Mitel 5000 Contact Center V3.3 Operating Manual

July 2017

CONTENTS

1 INTRODUCTION

1.1 PURPOSE OF THIS DOCUMENT

Mitel 5000 Contact Center (M5000 CC) comprises the following products:

- The Mitel 5000 Contact Center
- Conference Bridge.

The purpose of this online help is to:

- Explain how to install and/or update the Mitel 5000 Contact Center software, and configure the associated applications
- Provide operators with all the information required to use and manage Mitel 5000 Contact Center and Conference Bridge.

If the M5000 CC used is not fitted with a Conference Bridge, information about this products can be ignored while consulting this online help.

The M5000 CC solution is the automated contact center for Mitel which offers you a high level management capacity for:

- Telephone calls
- E-mails and fax
- Web sessions.

Conference Bridge enables users connected to the M5000 CC Server through a thin application (for example M5000 CC) to reserve and/or participate in conferences.

This online help is broken down as follows:

- **Chapter 1 : Introduction**

  This chapter gives general information (abbreviations, definitions, etc.).

- **Chapter 2 : Content of the kit**

  This chapter describes the hardware and software content of the product.

- **Chapter 3 : Security instructions**

  This chapter gives security-related recommendations.

- **Chapter 4 : Basic installation and configuration**

  This chapter describes the installation of the hardware, software and various configurations required for the system's basic configuration and the generation of a short script to validate the installation.

- **Chapter 5 : Recommendations on PBX configuration**

  This chapter gives recommendations on the PBX configuration.

- **Chapter 6 : Recommendations on M5000 CC configuration**

  This chapter gives recommendations on the M5000 CC configuration.

- **Chapter 7 : General installation diagram**

  This chapter summarises the installation/configuration procedure.

- **Chapter 8 : Features**

  This chapter gives an overview of the various functions of the components of M5000 CC and their interaction.

- **Chapter 9 : Advanced configuration and start-up**

  This chapter presents the configurations of the various media (Voice, e-mails, web) and the implementation of Mitel 5000 Contact Center and Conference bridge.

- **Chapter 10 : Use**

  This chapter describes the deployment and management procedures, in form of records for:

  - the different Mitel 5000 Contact Center applications: M5000 CC Administrator, M5000 CC Service Manager, M5000 CC User, M5000 CC Wall Display
  - the Conference bridge.

- **Chapter 11 : Troubleshooting aid**

  This chapter describes troubleshooting procedures, grouped by application or function, in form of tables.

- **Chapter 12 : Supervision appendices**
  12.1 : General information about statistical reports and data

This appendix gives general information on the reports and statistical data described in detail in the following appendices.

12.2 : Description of predefined reports of M5000 CC Report Server

This appendix describes the tables in the "LongTermReporting.mdb" database and the preset standard statistical reports.

12.3 : Description of statistical tables and databases

This appendix contains a detailed description of the statistical table of the "LongTermStatistics.mdb" database used, among others, by the Conference BridgeStatistics Builder application.

- **Chapter 13 : Development appendix**

  This appendix is meant more particularly for script developers. It gives detailed information about the Nodes, Variables, preset Scripts, and a some practical examples of Scripts.

- **Chapter 14 : Advanced development appendices**

  14.1 : Appendix description of the object models of the M5000 CC User API

  This appendix presents the items (properties/methods/events) available when the M5000 CC User API interface is connected.

  14.2 : Appendix to the description of the object models in the Outbound calls list API

  This appendix presents the items (properties/methods/events) available when the Outbound call list API interface is connected.

This online help is applicable to phase V3.3 of the product.

1.2 AUDIENCE OF THIS DOCUMENT

This document is intended for the various users and operators of Mitel 5000 Contact Center (administrator, Service manager, team supervisor, agent, etc.).

1.3 ABBREVIATIONS

ACD	Automatic Call Distribution
API	Application Programming Interface
ASP	Active Server Pages
CA	Certificate Authority
CLID	Calling Line Identification
CRM	Customer Relationship Management
CSTA	Computed Supported Telecommunications Applications
CTI	Computer Telephony Integration
DAO	Data Access Object
DCM	Dialogic® Configuration Manager
DCOM	Distributed Component Object Model
DCP	Direct Call Processing
DLL	Dynamic Link Library
DN (or DNR)	Directory Number
DNIS	Dialed Number Identification Service
DSN	Data Source Name
DTMF	Dual Tone Multiple Frequencies
FAQ	Frequently Asked Questions
GUI	Graphical User Interface
GV	Virtual Group
HTML	HyperText Markup Language
ICD	Intelligent Call Distribution
IED	Intelligent E-mail Distribution
IP	FInternet Protocol
IVR	FInteractive Voice Response
JAR	Java archive

MDI	Multiple Document Interface mode
M5000 CC	Mitel 5000 Contact Center
OCX	OLE Control Extension
ODBC	Open DataBase Connectivity
OLE	Object Linking and Embedding
PAD	FPacket Assembler Disassembler (asynchronous data link)
PBX	Private (Automatic) Branch eXchange
PC	Personal Computer
Agent PCP	Post Call Processing*(PCP in french)*
PEB	PCM Expansion Bus
MCQ	Multiple choice questions
DID	Direct Inward Dialling
RTP	FReal Time Protocol
SDI	[SDI] (Single Document Interface mode)
SDP	FSession Description Protocol
SIP	FSession Initiation Protocol
SRTP	FSecured Real Time Protocol
SMTP	Single Mail Transfer Protocol
SOAP	Simple Object Access Protocol
SSO	Single Sign-On
UUS	User to User Signalling
TAPI	*Telephony Application Programming Interface*
TCP/IP	Transmission Control Protocol / Internet Protocol (data exchange protocol on LAN)
PCP	Post Call Processing*(Agent PCP)*
TLS	FTransport Layer Security
TSP	Technical Service Provider
TTS	Text-To-Speech
UDP	User Datagram Protocol
URL	Uniform Resource Locator
VOIP	FVoice Over IP
WSDL	Web Service Definition Language

1.4 DEFINITIONS

Automatic Call Distribution

Routes incoming and outgoing calls to the most appropriate available agent. It manages incoming and outgoing calls.

Report Administrator

Privilege granted to a user enabling him to modify the report printing rights via the remote report printing interface.

Base memory address

The starting address in the PC memory that is assigned to a Dialogic shared RAM expansion board during installation or configuration.

Agent

The agents of a Service are people who can answer calls for that Service. Agents have to be chosen among the defined users.

Each agent associated to a Service can be (un)assigned. An agent takes part in the call distribution only if he is assigned. Unassigning an agent is useful when an agent temporarily works in another Service for example. An agent can be associated to more than one Services.

Each agent can be included in team(s). He can also be assigned a level for each skill and language. An agent's

level may vary from 0 (lowest) to 99 (highest).

Caution: *The administrator defines agents for a whole Service, but their properties (skills, languages, teams and assignment) are separately defined by the Service manager for each "version of the Service".*

Alias associated with the DNIS

Each DNIS interval defined can be associated with an "alias" (see Sheet U-321) (maximum 15 characters). This alias can then be used in statistical reports for ease of display (the aliases rather than the DNIS are displayed).

API

An Application Programming Interface is the particular method prescribed by an operating system or program with which a programmer writing an application can make requests to the operating system or another application.

Pattern matching:

Comparison of a set of string values with a pattern, resulting in the selection of values which match this pattern. For instance: "abCDE" is matched with the form "*C#E", according to the syntax of the operator "Like" (see Sheet U-443) in the Visual Basic language.

Call

A call is a session when this session is not associated to another one; otherwise a call is a set of associated sessions. A distinction is made between inbound calls (agent receiving calls) and outbound calls (agent making calls). See also inbound/outbound Services.

Applet

A program written in the Java programming language to run within a web browser compatible with the Java platform. Applets are referenced by a special tag in a HTML file: the <APPLET> tag. Applets can be located anywhere, either on your local machine or anywhere else on the Internet (see Sheet C-800). The location of the applet is completely invisible to the user. However, the location of the applet is encoded within the <APPLET> tag.

Tree

A tree defines the stages a call must pass through. It is a program that is run for each call.

It is composed of a hierarchical collection of nodes. Each node is of a particular type: it defines the function it performs during execution.

User Interface trees

Trees executed by the M5000 CC User application: it defines the questions that appear on the agent's screen.

M5000 CC Wall Display application

Application which manages and controls the wall display. The application has to be running on the PC to which the wall display is connected.

Statistics Builder Application

The Statistics Builder Application has no user interface. It manages the records in the "LongTermStatistics.mdb" database or in an external base when the configuration uses an external replication database.

Argument

Trees can have Arguments. Like procedure calls in programming languages, a tree can be executed, passing parameters to it. The scope of a tree's arguments is the tree. The value of these arguments is defined in the "RunTree" node (see section 13.2.4.4). Arguments are passed by reference, i.e. the address of the argument is passed instead of its value. This enables the called tree to access the actual variable. As a result, the variable's actual value can be changed by the tree to which it has passed. See example in § 8.5.6.3.1.

ASPActive Server Pages

Open application environment in which HTML pages, scripts and ActiveX components are combined to create Web applications.

Association

An association between sessions shares global variables and certain properties of each session. The result is a unique call. It is performed using an "Association" node (see § 13.2.4.11).

Babel

Text-to-speech software

Configuration database

This database is located in the "ReplicationDB" folder of the M5000 CC File Structure. It contains all the information required by the external replication process: the description of all the stored procedures defined in the external database and the way to replicate the content of the "Statbuffer.cst" or "LongTermStatistics" database into the external one.

Several configuration databases can be defined in the M5000 CC Administrator application. The Statistics Builder application uses only one: the database in the "Production" mode.

Configuration database in the "Production" mode

This is the configuration database normally used by the Statistics Builder application for the replication of an external database.

External database

Unlike the "Statbuffer.cst" or "LongTermStatistics" base, the external database is created and managed outside the M5000 CC system. This can be an Oracle or Access database. Besides the destination tables, this database must also contain stored procedures.

It is filled thanks to the external replication process done by the Statistics Builder application.

Mail-box

The e-mailbox is the delivery point for all incoming mail messages sent to a designated owner. Information in a user's mail-box is stored in the private information store on an MS Exchange Server computer. A mail-box contains received messages, message attachments, folders, folder hierarchy, etc.

Branch

A node, its children, the children of its children, etc.

Broadcasting

UDP protocol (User Datagram Protocol) provides a connectionless, unreliable transport service. It is often used for one-to-many communications, using broadcast datagrams. The broadcasting consists in sending a single message to a group of clients instead of several identical messages to each of them. This prevents sending time consuming DCOM calls from the clients to the M5000 CC Server.

CAB

Cabinet (CAB) is a technology for compression and distribution of files. When used for Java applets, the ".CAB" file serves as a single, compressed repository for all ".class" files required by the applet. Only the ".CAB" file is downloaded, so the time of download is what it takes to negotiate the transfer and download the compressed bytes.

Frame

A frame is a rectangular section of a Web page that is a separate HTML document from the rest of the page. Frames allow the browser display window to be sub-divided into separate sections each of which can be updated or have new documents loaded into it separately from the remaining frame sections.

Pie Chart

Pie charts display the contribution of each value of a set to its total value. They are used to compare the proportions of different values. See example in Sheet U-470.

Call blending

When an agent is simultaneously assigned to both inbound and outbound Services: he can thus receive both kinds of calls.

Address book

The address book is a subset of the directory, including mailboxes, customized recipients, distribution lists and public folders available to users so that they can access information about the organization just as they would with a telephone directory. The address book can contain one or more address lists.

CCO

Communication circuit. Used to manage on a single set as many calls as there are circuits programmed.

Virtual centre

A virtual centre is a structure with a set of ESX servers. Declaring a virtual centre (see Sheet U-339) in the product enhances the failure-tolerance function (Section8.10) by allowing an M5000 CC Media Server to be started if this latter is compatible with the ESX server on which the M5000 CC Server is running. (Section “Configuring M5000 CC Media Server’s physical PCs:).

Certificate

A certificate is a digitally signed statement from an entity (person, company, etc.), saying that the public key of some other entity has some particular value. If you trust the signature on the certificate, you trust that the association in the certificate between the specified public key and the other entity is authentic.

Software key code

A software key code is used to limit the use of an application.

The software is unlocked using a physical key or dongle. There are two dongle types:

- A standard dongle (see Section 8.3.8.1.1)
- A demonstration dongle (see Section 8.3.8.1.3).

The system cannot work without a dongle.

The physical key can only be used with the USB port:

- Dongle for parallel port
- Dongle for USB port

CLIDCalling Line Identification

Caller's phone number.

Activity code

An agent can manage a set of statuses. When this agent is "Not Ready"(see Sheet U-312, ***{Activity codes}*** tab) or in PCP (Post Call Processing), he can specify the type of activity by a code with an IVR script. This activity code can be shown by statuses and reports (see Sheet U-484/U-200).

Note: The default value of this activity code is 0.

Skill

A Skill defines a capacity that an agent may have. Skills are used to determine the agent to whom a call is transferred. Skills allow more precise transfers than teams, since each agent can have an individual skill level. See Skill management (see Sheet U-437).

Access Condition

Each node has an access condition. The access condition is a condition that must be evaluated to true in order to execute the node.

Standard statistics consolidation

When the administrator selects the type of replication (see Sheet U-312, ***{Statistics}*** tab) in the statistics, he can select either standard or external replication. Regardless of the type of replication chosen, he can also choose to consolidate his statistics. The consolidation mechanism provides (using the "LongTermStatistics.mdb" database) the means to store statistics at a lesser cost (disk space) over a longer period.

ActiveX Control

ActiveX controls, called OLE controls, are standard user interfaces used for easy assembly of forms and dialogue boxes.

CRM (Customer Relationship Management).

CRM refers to the processes defined in a company for managing its relations with customers. The CRM software is used to implement these processes.

CSTAComputed Supported Telecommunications Applications

CSTA is an international standard defining an interface between telephony and computing. It defines the type of information (e.g. new call, on-hold call, end of call, etc.) the PBX (telephony) must provide the M5000 CC (computer system) depending on the changes of status of a call. It also specifies which action (call transfer, pick-up, etc.) can be carried out by the PBX at the request of the M5000 CC. This protocol is used to supervise and manage calls and agents.

CTI (Computer Telephony Integration)

A CTI link connects a telephone system to a computer and serves an application running on that computer.

DAO (Data Access Object)

A programmable framework you can use to manipulate database systems (see § 13.2.1).

DCOM (Distributed Component Object Model)

A model in which distributed applications can expose (some of) their objects. These objects can then be used by other applications.

- see Online information about "Distributed COM" on the site:
  http:// channels.microsoft.com/com/tech/dcom.asp
- See the "Select function" tab in the generic part of the "FunctionCall" node (see § 13.2.4.10).

Minimum/maximum presentation timeout

- Minimum presentation timeout: it is the minimum lapse of time during which the call is presented to the

selected agent even if the global timeout occurs. The minimum presentation timeout must be*:*

- Equal to or higher than 0.
- Equal or lower than the maximum presentation timeout

• Maximum presentation timeout: it is the delay after which M5000 CC Server tries to transfer the call to another agent if the current one doesn't answer.

Note: The presentation timeout starts when the agent's phone is ringing.

DCP (Direct Call Processing)

The "DCP" status corresponds to: The call was forwarded, the caller is talking with the agent (in case of blind forwarding, the DCP also includes the agent set ringing time, as blind forwarding does not wait for the agent pick-up to be performed).

DLL (Dynamic Link Library)

Type of files containing libraries of objects and functions. These objects and functions can be used by applications without the developers knowing how the objects and functions work internally.

See the "Select function" tab in the specific part of the "FunctionCall" node (see § 13.2.4.10).

DN (or DNR) (Directory Number)

unique phone number which is automatically assigned to each phone extension.

DNIS (Dialed Number Identification Service)

These numbers correspond uniquely to the numbers dialled by callers. They must be assigned to a service managed by M5000 CC. This information is supplied by CSTA. Each DNIS may have a corresponding service managed by M5000 CC.

remote DNIS

Call pit type virtual group used to receive calls from a remote server via remote DNISes.

Dongle

A hardware key. Dongles are used for copy protection and license management.. You can copy programs protected with a dongle, but they will not run if the dongle is not physically connected to the USB port. Dongles also give access to licenses for using (parts of) programs.

Folder

A folder is a subdivision of the Mail-box used to store information, as a disk directory.

Root folder

The main subdivision of a mail-box. To view its content (in Microsoft Outlook), you have to deselect the "Show Folder Home Page" option in the **[View]** menu.

DSN (Data Source Name)

To access the external database, the ODBC is used to connect to a database. This model uses a DSN to establish connection to the external database. The DSN can be defined in the Windows Control Panel by clicking on the **Data sources (ODBC) icon**. The required driver to be connected to the database has to be specified, as well as the path to this database. In some cases, a user ID, name and password may be required.

DTMF (Dual Tone Multiple Frequencies)

When you dial a number on a push button pad, you hear a tone associated with each key. This tone is in fact a combination of two tones (hence Dual): a low and a high frequency. This combined tone can be analyzed by a decoder to find out which button(s) was (were) pressed.

Call duration

Duration of presence of the call on the agent's set. It includes the conversation time of the agent with the caller and duration of warning of the call.

Conversation duration.

The conversation duration is only the duration for which the agent actually talked with the caller. It does not include the call warning duration by the agent.

IVR duration

IVR duration is the interval before the waiting period. By default, waiting starts as soon as the call arrives for a service; in this case, IVR duration is equal to 0. It is possible to initialise the wait time in the transfer node: IVR duration then corresponds to the time that passed since the call's arrival up to the execution of the transfer node, while the waiting period corresponds to the time spent by the call on the node before being transferred to an agent.

By default, a call is considered as "to be transferred" (the "CallToTransfer" variable = 1). If in the script the call is no longer to be considered as to be transferred, the "CallToTransfer" variable must be reset to 0. In this case,

there will be no waiting, and the entire call duration will be considered as IVR.

The notion of IVR explained here is independent of the use or non-use of Dialogic cards (or HMP software): it applies both to scripts "with IVR" and scripts "without IVR". The use of strapping does not have any impact on these durations either.

Note: Once the transfer node is executed (except for a transfer to an extension), the value of the "CallToTransfer" variable is set to 1.

Replication failures and StatRecycler.cst

Every 15 seconds the Slave application tries to replicate the records in the StatBuffer.CST database to the selected statistics databases (standard and external replication). If replication of a record fails, the corresponding data is copied to the StatRecycler.cst database. The slave application then tries every 30 minutes to replicate the record from StatRecyler until it succeeds.

Replication failures from LongTermStatistics

If replication of a record in LongTermStatistics to an external database fails, a new attempt is made after the next Night Mode. This is repeated until the replication is successful.

E-mail

A message sent through a computer network to an e-mail Server. The e-mail has many properties such as subject, sender, recipients, importance, attachments, etc. The e-mail processed by the M5000 CC can come from a fax, which has been transformed into an e-mail. A specific intrinsic variable "EmailMessageType" enables you to distinguish a "pure" e-mail from a transformed fax.

Team

The agents of a Service can be grouped into Teams. Teams define groups of agents having common characteristics.

Replication steps

See stored procedure instance.

Private extension

A private telephone extension is a supervised extension to which the M5000 CC Server will never distribute any incoming or outgoing calls. So, a private extension can only be used to make or receive private calls. It is declared in M5000 CC in order to take account of the presence of a call on it and thus (not) distribute calls to professional extensions.

Main extension

The main telephone extension is the extension for which the M5000 CC Server synchronises the status (Connected / Disconnected, Ready / Not ready) of the agent using the terminal with the status (added to or removed from the hunt group) of the corresponding line on the PBX.

Professional extension

A professional extension of a telephone is an extension to which the M5000 CC Server can distribute incoming or outgoing calls. (It may also be used to make or receive private calls).

Mixed professional extension

It is a phone extension where the M5000 CC can distribute incoming and outgoing calls. For incoming call distribution, the three transfer type (blind, monitored or pool) can be used.

Push professional extension

It is a phone extension where the M5000 CC can distribute incoming call and outgoing calls. For incoming call distribution, only call pushed by the server using blind or monitored transfer can use this extension.

Pool professional extension

It is a phone extension where the M5000 CC distributes only incoming call waiting in the pool and selected by the agent

Leaf

Node without children.

PBX prompt

Each PBX prompt is a voice message played by the PBX. The Service manager cannot record or play any PBX sound. He can only configure the properties of this type of sounds (name, duration and PBX access number).

Filter

Service status information which is available on the info bar of the client applications; it is global to all calls and agents of the Service and can be insufficient. This information cannot be applied to specific categories of calls or agents.

The purpose of the filter is to solve this problem.

A filter is a **set of conditions** that calls and/or agents have to meet to be taken into account in the calculation of a status information relating to a Service. See filter applied to a Service or sheet U-404.

Form

Character string with a particular syntax, enabling to search on text or filter values of the (text) string type by selecting only those matching this form (see Sheets U-210 and U-443).

Service manager

Service managers are people who can manage a Service: they can open and modify the content of the Service with the M5000 CC Service Manager application. They can modify the agent languages, teams and skills of a Service as well as the Service script. Furthermore, depending on the rights granted by the Administrator, Service managers may be able to create new users in the system and modify the list of agents assigned to their Service. Service managers have to be chosen from defined users, but do not need to have "Administrator" privileges.

Team manager

Team managers can manage one (or more) teams in a Service: they can modify the content of this team via the M5000 CC Service Manager application. Depending on the rights granted by the Service Manager, team managers may be able to create new users in the system and modify the list of agents in their team. Team managers are chosen by service managers from the agents assigned to the service in question.

Message call pit group

A message call pit group is a set of extensions associated with call pit type telephones, and playing the same sound. In a configuration without IVR, if a message must be played very often (>2 calls/second), it is best to define several extensions in a message call pit group. The call is then directed cyclically to an extension in the message call pit group.

Virtual Group

A group "without a declared set" can be called a "Virtual Group" (VG). It can fulfil the "Inbound call pit" function or be used just to play a message. From release V12.2.2 virtual groups can be used (without a declared set) to carry out the call pit function. For each group the size of the queue can be managed via survop and the call waiting time in the queue via the MMCs. You have 96 waiting calls during virtual group (VG) declaration. This is largely sufficient. The number of groups is limited to 30.

Virtual music group

From V12.2.2 virtual groups will be used (without a declared set) to perform the music set function. Each group will belong to a different company/department. For each company/department pair, PBX tones before and after the response ‘extension busy’ will be replaced with an announcement broadcast by the CCS card. This way, the size of queues will be easy to define since a large number of calls can be put on hold. To cope with load problems M5000 CC can manage several virtual groups for the same message.

GUI Graphical User Interface

What you see when running an application. It is the set of windows, menus and other application objects with which you can manipulate your data.

Histogram

Histograms show the evolution of a set of values over time. They keep the values of previous snapshots in the memory and display them in two-dimensional charts. The X-axis represents time, and the Y-axis values. See example of extension histogram showing the stacked values for the extension statuses in Figure 10.58 of Sheet U-470.

HTML (HyperText Markup Language)

Computer language based on hyperlink tags. This is a file format for hypertext documents on the Internet. It is very easy to design and is used to embed images, sounds, video streams, form fields and simple text formatting. References to other objects are embedded using (URL) addresses.

ICD (Intelligent Call Distribution)

An evolution of the ACD that routes calls on the basis of information provided by the caller, a database on callers and/or human resources management data such as the agents' skills, languages and team membership.

IED (Intelligent e-mail Distribution)

Similarly to its powerful automated voice calls distribution functionality (ICD), the M5000 CC solution intelligently routes inbound e-mails and faxes to the agents working in the contact centre on the basis of skills, languages and team membership. Hence, the M5000 CC introduces the notion of IED (Intelligent E-mail Distribution): Intelligent e-mail Distribution. All basic actions which can be performed on an e-mail are managed by the M5000 CC by means of an e-mail processing script: the system itself or the agents of the contact center are able to reply to, forward, move, copy or delete the e-mails or faxes (converted into e-mails by Faxination).

Global information

Status information cumulated separately on inbound and outbound Services in "Production". Depending on the type of data, the calculation returns an addition (for example: the Number of calls), a maximum value (Longest waiting time) or an average value (Service Quality). Global information is computed by client applications.

Stored procedure instance

Each stored procedure of the external database can be used several times, with different parameters. Each user of this stored procedure is called an instance, or a replication step.

IRQ (Interrupt Request)

A signal sent to the central processing unit (CPU) to temporarily suspend normal processing and transfer control to an interrupt handling routine. Also known as hardware interrupt. Dialogic boards must be assigned an IRQ level during installation or configuration.

IP IVR

By extension: IP type IVR channels.

JAR

The Java Archive (JAR) file format enables you to bundle multiple files into a single archive file. Typically, a JAR file will contain the class files and the auxiliary resources associated with applets and applications.

Link CSTA

For the M5000 CC, a CSTA link is a TCP connection which will be set up with a CSTA server of the PBX to supervise extensions. A CSTA link is characterized therefore by the IP address and the IP port of a CSTA server and the extensions that are allocated to it.

Localization

The concept of localization enables you to display the applications in several languages (see the section about 8.6).

MDI (Multiple Document Interface)

In **MDI** display mode, you can see all agents, services, phones and extensions without any link between them.

Media

A media is a means of broadcasting, distributing, or transmitting signals carrying written, sound or visual messages. The media used are:

- Voice
- E-mail and Fax
- Web.

Tree-view mode

Items appear in a tree format, i.e. hierarchical tree relationship. For scripts, the items in the tree appear as nodes, as in the tree management window of the M5000 CC Service Manager.

Tree-listing mode

The nodes in a tree are listed with all useful information (i.e.: the return code variable, the global variables used, the name of the parent and children nodes, etc.).

Maintenance mode

Usually, the M5000 CC Server application has an exclusive write access to the database where system data is

stored. However, this inhibits other operations, such as database compression, backup, etc. This is why the system may sometimes be switched to a special mode during which the M5000 CC Server releases the database access rights: the maintenance mode.

Night mode

Daily period in which the system explicitly switches to the maintenance mode (see § 8.3.8.4).

Replication model

This model is saved in the configuration database. It defines how the replication of the statistics is done: which fields from the different tables of 'Statbuffer.cst' are replicated into an external database by the stored procedures.

Add-on module

An add-on module is a set of logically related nodes. Some add-on modules are pre-defined, but user-built modules can be added to the system.

List of predefined add-on modules:

- Database management node module
- Nodes module IVR
- MakeCall node module
- System node module
- User interface node module
- E-mail node module
- Web server node module.

M5000 CC Media Server

Application which manages interactions between the system and callers, using IVR scripts.

Node

Nodes are small programs that form trees. Each node corresponds to a particular action taken during call processing.

Nodes are organized in a precise manner to build trees:

- The relations between nodes are well established.
- Specific rules are followed during each tree execution.

Different sets of nodes are predefined in the system: they are called Add-on modules (see Section 8.5.5.2). Each of them contains nodes with similar features.

ODBC (Open DataBase Connectivity)

A standard protocol that allows applications to connect to a variety of external database servers or files, without having to know the specifications of those systems.

P(A)BX (Private (Automatic) Branch eXchange)

A small version of a phone company's central switching office. Formerly, connections were made manually, and there was a distinction between automatic PBX and manual PBX. Nowadays, all central switching systems are automatic, so PBX are simply called PBX (even though they are not manual).

PEB (PCM Expansion Bus)

The PEB is the PCM extension bus used to connect voice cards to the network interface cards.

Pool

The pool is a dynamic window (see Sheet U-520) dedicated to e-mail management and which is common to all agents, but the agents only see the e-mails matching their skills, languages and team membership. The pool window is available in the M5000 CC User application.

Once an agent chooses an e-mail, it disappears from the pool.

Port

A location used to pass data in and out of a computing device. This term can refer to an adapter card connecting a server to a network, a serial RS232 port, a TCP/IP port, or a printer port.

Portal

Web page allowing users to access several services inside the same browser. These services are grouped together in form of web applications, which are displayed in one of the portal frames. In particular, it gives the agent access to the M5000 CC User application as a thin client (the application is not installed on his or her PC).

I/O port

The I/O port is a connector that allows you to connect peripherals to computer system.

Virtual Set

A "set with right to disconnect the set" type call pit is considered as a "virtual set".

This set (preferably digital) is not systematically connected. This set can have several lines (different directory #). For each line, 1 to n CCO conversation circuit(s) can be programmed in order to size the call flow if required. To manage some traffic, it is better for the virtual terminal to have only one line (with 1 to n CCOs).

Virtual music set

This virtual set is used to broadcast messages by replacing the network tone. It is not possible to broadcast a message when an internal call is made from the call pit. On the virtual set each line belongs to a different department of the same company. For each company/department pair the PBX tones ‘before and after answer on free extension’ and ‘before and after answer on busy extension’ are replaced by a message broadcast by the CCS, CC1 or BVF card. It is important to size the traffic; sufficient CCOs must therefore be programmed for each line. The number of CCOs will permit as many messages as CCOs plus 1 to be broadcast simultaneously. This set is not necessarily connected physically.

Night procedure

Night procedure occurs only when the standard statistics database (see section 8.4.2.2.1) is used. This is a daily procedure during which the databases are compressed; previous backups are deleted from the statistics tables, as well as the backed up files located in the publication directory with a lifecycle above the deletion period (see Section U-312). This takes place in night mode.

Stored procedure

In the external database, a stored procedure is an SQL request. It should be an "Insert into" request which allows you to create new records in a table of the external database. The request must also have parameters that provide the values to put in the fields of a new record.

Thanks to the configuration database, the M5000 CC knows these different stored procedures. To use them, the administrator must associate a stored procedure with a table in the 'Statbuffer.cst' or 'LongTermStatistics' database. Then the administrator associates one of the fields of the selected 'Statbuffer.cst' or 'LongTermStatistics' table with each parameter of the selected stored procedure.

Profile

A group of settings that provide MS Exchange Server with essential information about a client's configuration. It contains the delivery location for incoming messages, files and other items, the location of the user's personal address book and a list of all the information services that are available. A user may have several profiles on a single client for different configurations; however, only one profile can be used at a time. The profile defines the parameters of a resource (e.g. voice, inbound, outbound, etc.).

Detailed table replication profiles

Detailed table replication profiles are used to apply some constraints to all stored procedures defined during the external detailed data replication process.

These constraints can be applied to:

- The services and associated filters
- The users.

Consolidated table replication profiles

Consolidated table replication profiles enable you to apply constraints to all stored procedures defined during the external replication process on the consolidated data.

These constraints can be applied to:

- The services and associated filters
- The users.
- precision of the consolidated data (quarter hour, half-hour, hour, day, week, and month).

Inbound call pits or message call pits

A Call pit can be of the "Virtual set" or "Virtual Group" type, and can be used as an entry point for M5000 CC, or to broadcast messages.

Extension defined in the PBX and used by the M5000 CC, to either receive incoming calls or play voice messages to the caller. In the second case, the Call pit is programmed in the PBX to ensure the usual call return tone is replaced by a voice message from the CCS card when a call is presented to this call pit.

A Call Pit is programmed as multiple keys with the same extension on a given phone. The number of keys is the number of calls that can be handled simultaneously on the Call Pit: choosing the right value for this number is

an important part of the dimensioning problem to be solved when installing the M5000 CC.

Inbound call pits associated to the Service '

Call pits can be associated to Services by the administrator in order to use the Reject 21 function. When a Service is closed, the calls entering the call pits associated with this Service are rejected. A call pit can be associated to a single Service, but one Service can have several associated call pits. The Service - Call pits link (see SheetU-321) is defined on the level of the M5000 CC Administrator application.

the quality of Service

Voice: A notion that represents the percentage of calls that are transferred within a "reasonable" time. What is reasonable or not is defined by a threshold (see Sheet U-417) (expressed in seconds). Each Service can have a different threshold. The percentage is calculated as follows: this is the relationship between the number of calls transferred with a wait time below the threshold and the total number of calls transferred and abandoned. (Calls that do not have to be transferred are, therefore, not taken into account in this calculation.)

E-mail: It is a value representing a "reasonable" time for treating an e-mail. The e-mail Quality of Service threshold is a combination of days, hours, minutes and seconds. The default value is 20 hours. The threshold is defined in the properties of the M5000 CC Administrator application.

Note: The shorter the waiting time, the higher the Quality of Service.

MCQ(Multiple choice questions)

A question for which the answer is to be chosen among several available options.

Root

The first node of a tree.

Redirection

A call arriving in an extension can be redirected to another extension. The result of this operation is the disappearance of the call from the first extension, and arrival of the call on the second. This mechanism is used in scripts without IVR when a "TransferCall" (see § 13.2.2.7) or "PlayVoiceMessage" (see § 13.2.2.4) node is executed.

Redirection execution duration

The redirection execution duration is the time required to send the corresponding request to the PBX and receive all the events associated with this operation.

Redirection waiting duration

If a redirection is applied to an extension, another redirection can be executed only when the first is finished. The redirection waiting duration is the time during which the second redirection remains waiting.

Reject 21

Reject 21 (see § 8.3.1.8) is a feature used to refuse incoming calls if certain criteria are met. For example, the calls of a Service can be refused when the current load in incoming or other calls become too important or if the current day is a holiday. In this case, calls are rejected by the PBX itself, and should be managed on the front-end.

This feature is available only in a CSTA configuration without IVR.

External replication

The external replication is the process done by the Statistics Builder application to replicate the 'StatBuffer' and/or 'LongTermStatistics' database to an external database.

Since the external database is not defined in M5000 CC, the following items are required in the M5000 CC Administrator application:

- A DSN : indicates how to connect to the external database
- A configuration database: explains which information from 'StatBuffer' is replicated and where in the external database.
- Depending on the type of external database, a user name and password may be required.

This external replication is also based on the stored procedures defined in the external database. By calling these, the Statistics Builder application can replicate the statistics.

Standard replication

The M5000 CC records the statistics in the '**Statbuffer.cst**' database, which contains several circular, hence temporary, tables. Every 15 seconds, the Statistics Builder application duplicates all these tables into another database, i.e. **'LongTermStatistics.mdb',** which is a linear base. This type of replication gives access to Reporting (see Section 12.2.2). This type of replication also gives access to data consolidation.

Call return to attendant

Call return to attendant is a feature used to manage incoming calls arriving directly or indirectly on a terminal but which have not been picked up.

After a too long call presentation timeout and if the PBX configuration allows this, the call not answered on a terminal is diverted to an incoming-call pit. There are two types of call return to attendant:

- **Unanswered returns**; these are calls that have never been taken by at least one internal subscriber (a terminal declared in the PBX and supervised by M5000 CC).
- **Answered returns**; a call will be seen as “answered return” if after being picked up at least once by an internet subscriber, it is diverted to another terminal which did not answer after the presentation timeout. In this case, the call is diverted by the PBX to an incoming call pit and regarded as an answered call return to the attendant.

This feature is available only in a CSTA configuration without IVR.

Run

A Run corresponds to the execution of a script in one client application (actually in the M5000 CC User or M5000 CC Media Server application). Each call has its own Run object(s). A Run can be associated with Voice, Web or E-mail media.

Consultation script

A consultation script (script of a consultation Service) modifies some variables of an associated call (see § 8.3.1.10).

SDI (Single Document Interface mode)

In the **SDI** display mode, you can see all users of a Service, all Services where an agent is present, all extensions of a phone, as well as the phone associated to an extension. All windows are connected. Click on one will highlight all related items of other windows.

Section

A branch situated just below the root.

Innerflow Server

An innerflow Server informs the M5000 CC Administrator application that the local Server can receive calls coming from another remote Server.

Overflow Server

An overflow Server informs the M5000 CC Administrator application that a local Server can transfer calls to another remote Server.

Interactive Voice Response (IVR)

The term "Interactive Voice Response" (IVR) is used in several senses:

- Call status

  An incoming call takes on the IVR status when it is processed automatically. The IVR status is generally defined as the status before the agent waiting phase. This status is used in real-time statistics and statuses, regardless of whether or not Dialogic cards (or IP/IVR/HMP licences) are used.

- Type of tree

  Tree run by the M5000 CC Media Server. It contains, among other things, all nodes that have an effect on the phone communication (i.e. play or record a message, listen to DTMF, transfer a call, etc.).

  Telephony features are implemented on this type of tree via a Dialogic card (or IP-IVR HMP licence) managed by the M5000 CC Media Server. Voice Server trees without IVR trees do not use this card.

  See "Tree categories" in Section 8.5.4.1.

Voice Server without IVR

Tree run by a M5000 CC Media Server. It contains, among other things, nodes that have an effect on the phone communication (i.e. play a message, transfer a call, etc.).

Phone functionalities in such a tree are implemented using a board in the PBX.

See also Categories of trees § 8.5.4.1.

Service

A Service (see § 8.2.4.3) defines one "category of calls", i.e. the way some calls are handled. A service type is either "Incoming" or "Outgoing".

Consultation service

A consultation Service is a Service used by the agents for internal management (i.e. modification of statistics) when there is no User Interface.

Incoming service

A Service in which all calls are coming in the contact center, e.g. a technical hotline. Agents receive calls distributed by the application. When an incoming call is detected, the system can interact with the customer using Interactive Voice Response (IVR) features, then the call is transferred to the best agent available.

Outgoing service

Service in which all calls are going out of the contact centre, for example in "telemarketing". When an agent is idle, he or she can be selected by the system to handle an outgoing call.

Web Service

Web Services are services made available from a web server to web users or other programs connected by the web. Web Services are becoming increasingly popular due to the use of XML (eXtensible Markup Language) as medium for standardisation of formats and data exchanges.

Session

A session is the link between a caller or called person (A-part) and the M5000 CC system (B-part).

Single Sign-On

Single Sign-On enables a user to connect to the system without having to identify him/herself because it is based on Windows authentication via Active Directory (the web server security module (IIS) checks the access rights and then the system checks the user rights).

This feature is only available for the portal user (thin client) via Internet Explorer 6.0.

Digital signature

A digital signature is a string of bits that is computed from some data (the data being "signed") and the private key of an entity. The signature can be used to verify that the data came from the entity and was not modified in transit.

SMTP (Simple Mail Transfer Protocol)

The SMTP is a TCP-IP communication protocol used to exchange electronic mail on the internet. In M5000 CC, it is used to send e-mails via Lotus Notes.

Snapshot

File (extension .snp) containing a high fidelity copy of each page in a Microsoft Access or Excel report, and preserving the page layout in two dimensions, the graphic views and other objects included in the report.

SOAP

SOAP (Simple Object Access Protocol) is a protocol used by a program running on a given operating system to communicate with another program on the same operating system or on another operating system, using World Wide Web HTTP (Hypertext Transfer Protocol) and its XML (Extensible Markup Language) to exchange information.

An API is neither a graphical interface nor a command line interface (both being direct interfaces with the user) but an operating system or program interface.

Socket

A socket is one endpoint of a two-way communication link between two programs running on the network. A socket is bound to a port number so that the TCP layer can identify the application where data is destined to be sent.

Sound

Sounds, also called voice messages, are played by the M5000 CC Media Server (solution with IVR) or the PBX (solution without IVR).

Agent statuses

An agent can manage a set of statuses. List of different statuses:

- **Logout**: An agent needs to log in, in order to receive calls. The service status does not take logged out agents into consideration.
- **Ready**: The agent is logged in and ready to receive calls. When an agent is having a conversation, he remains in the Ready status.
- **Not Ready**: The agent is not ready to receive calls.
- **Post Call Processing (PCP)** : The agent is carrying out call hang-up tasks. The agent does not receive new calls while in **PCP** status.
- **Break**: the agent is on break. During this period, agents do not receive new calls. This status is automatically activated when agents finish a conversation if the break period (see Sheet U-417) is not zero.

Note: An agent can have different statuses, 'Not ready' or 'PCP'.

Call statuses

A call can pass through a set of statuses. List of different statuses:

- **Not to be transferred**: The caller is interacting with the IVR part of the script and is not in a 'CallTransfer' node (see § 13.2.2.7).
- **To be transferred**: The call has entered a 'TransferCall' node but either no available agent has been found yet or an agent has been found and has been reserved for the call but the call has not been transferred yet.
- **DCP** (Direct Call Processing): The call has been transferred: The call was forwarded, the caller is talking with the agent (In case of blind forwarding, the DCP also includes the agent set ringing time, as blind forwarding does not wait for the agent pick-up to be performed).
- **On hold** : the agent has put the call on hold
- **PCP (Post Call Processing)**: The physical call is terminated but the agent is still doing some work for that call. The agent does not receive new calls while in PCP status.

Extension statuses

An extension can pass through a set of statuses. List of different statuses:

- **Free**: no call is using the extension at the moment.
- **Reserved**: a call has the status "Reserved" on the extension.
- **DCP** : The agent is having a conversation on the extension.
- **On hold** : the agent has put the call on hold
- **Private inbound call**: The agent is using the extension for inbound "private" calls, i.e. he receives calls which are not distributed by the application.
- **Private outbound call**: The agent is using the extension for outbound "private" calls, i.e. he is making calls which are not distributed by the application (for outbound campaigns).

Service status

This is information about a Service status at a given time. For example, this information includes the number of calls, the average waiting time before transfer, etc.. The Service "instants" are taken at regular intervals (every 5 seconds). They can be a basis for dynamic supervision. They are stored in the statistics database and can be used for reporting (only if the standard statistics database is used).

Statuses are computed by the M5000 CC Server.

Service status

The status of a Service can have two values: **Open** or **Closed**. This notion is defined only for a CSTA configuration without IVR and only for Services associated with at least one inbound calls pit. A closed Service (i.e. Reject 21) is a Service which no longer handles inbound calls. Indeed, any call arriving in one of the call pits associated with this Service will be rejected instantly by the PBX (with an ISDN cause of Reject 21). Only the number of calls rejected will be included in the statistics. Conversely, an open Service is a Service handling all inbound calls.

The current status of a Service is indicated in the status bar of the M5000 CC Service Manager.

Strapping

Strapping" is a "Voice" script function which makes it possible to use IVR resources and call pits simultaneously when an incoming call is processed by a Service (see Section 8.5.8). This function uses "ChangerTypeRessource" (see section 13.2.2.10) and "RetourARessource" nodes (see Section 13.2.2.11).

Team supervisor

Team supervisors are chosen by Service managers from the agents assigned to the Service in question. They have no management rights and can only access data relating to agents in the teams that they supervise. They only have access to real-time statuses and reports concerning their teams.

SURVOP

M6500 tool which, for our purposes, provides access to hunt group parameters via a PAD link. This tool must be used to set terminal idle timeout in a hunt group.

UUS(User to User Signalling)

Data buffer associated to a voice call. In the product, this data is obtained from the PBX upon detection of a new inbound call.

IVRInteractive Voice Server

The IVRenables callers to access and retrieve information over the phone without the intervention of a human operator. The caller uses a touchtone telephone to enter information and a digitized synthetic voice to present the results.

Synchronization

Between two sessions of the same call

A synchronization between two sessions of the same call (two associated sessions) is an interruption of the execution of the active run of the second session, followed by the execution of the node of the tree which is specified in the 'Synchronization' node (see § 13.2.4.13) of the first session active run.

Users' personal data

The use of Active Directory makes it possible to retrieve the personal data associated with the different users (name, e-mail, phone number + membership of Windows security groups). A synchronisation function makes it possible to automatically homogenise the Active Directory data and the data entered by the M5000 CC Administrator application. In case of discrepancy, it is the Active Directory data that is used.

Socket table

The "Sockets" table owns the sockets configuration parameters which are used by the "SendUDP" (see § 13.2.2.6) and "GetUDP" (see § 13.2.2.5) nodes.

TCP/IP

Transmission Control Protocol based on Internet Protocol. This is an Internet (connection-based) Protocol that provides a reliable delivery of data streams from one host to another.

PCPPost-call processing

One of the call statuses. The physical call is terminated but the agent is still doing some work for that call. The agent does not receive new calls while in PCP status.

UDPUser Datagram Protocol

A network transport protocol, member of the TCP/IP protocols family. In the UDP the link between the sender and the receiver is not continually open, but data is sent in small packages (datagrams). The arrival of these packages is not guaranteed, i.e. some may be lost, and the order is arbitrary. For instance,. if package B is sent after package A, package B may arrive before package A.

URL

Uniform Resource Locator: Web address. A URL is of the type "protocol://host/local_info" where "protocol" specifies the protocol (HTTP or FTP) used to get the object, "host" specifies the Internet name of the host containing the object (e.g.: www.example.com) and 'local_info' is a string (often a file name) sent to the remote host's protocol manager.

User

A User corresponds to any person who plays a role in the call distribution process. Among the users are the agents who answer calls and the administrators.

A user has the following properties:

- An identifier (must be unique)
- A (full) name (must be unique)
- An alias number (must be unique)
- A numeric password
- Optional : Administrator rights. Only users with this privilege can connect to the M5000 CC Server via the M5000 CC Administrator application.
- Optional : "administrator report" rights. Only users with this privilege can define the content of the reports.
- Optional **:** "conference administrator" rights. Only users with this privilege can supervise and, if necessary, delete some conferences defined using the Conference Bridge function.
- Optional : "conference organiser" rights. Only users with this privilege can organise conference
- Optional : "directory user" rights. Only users with this privilege can use the directories.
- Optional : A user's conversation can be recorded. Only users having that option checked can be recorded on demand of the Service Manager.
- An initial activity: It is the status of the agent's activity just after his connection. Two statuses are possible **'Ready'** or **'Not Ready'**.

Users are managed by the M5000 CC Administrator application.

Return code variable

A return code variable has to be specified for each node. This variable contains the result of the node execution. The type of variable depends on the type of node. See also the values for a return code variable (see description of the nodes in § 13.2).

Global variable

A global variable (see § 8.5.6.4) contains information available for all the trees in a script. Global variables are divided into two families: user variables (created by the user) and inherent variables (preset and managed by the system). Global variables can be displayed in the M5000 CC User application and in statistics. They can also be used in the trees of all media.

Intrinsic variable

Predefined variable which exists in every script. There are intrinsic variables for inbound Services (see § 8.5.6.4.1) and intrinsic variables for outbound Services (see § 8.5.6.4.2).

'Beta' version

A service is divided into versions. Versions allow the Service manager to continue developing the Service while it is in 'Production'. Creating a new version is not necessary for minor changes but is very useful when major changes have to be made to the Service structure. You can create a new version as a carbon copy of an existing version.

In each Service, one version can be defined as the 'Production' version: this version will be receiving or giving calls outside the contact center. Another version can be defined as the **'Beta' version**: it can receive calls for test purposes (but online monitoring and reporting are disabled). Several versions can co-exist in a Service, but only two can manage calls: the 'Production' version and the 'Beta' version.

Statistics and Service status are computed for the 'Production' version only.

See also how to activate a version as the 'Beta' version of a Service or Sheet U-413.

'Production' version

A service is divided into versions. Versions allow the Service manager to continue developing the Service while it is in 'Production'. Creating a new version is not necessary for minor changes but is very useful when major changes have to be made to the Service structure. You can create a new version as a carbon copy of an existing version.

In each Service, one version (and only one at a time) can be defined as the **'Production' version**: this version will be receiving or giving calls outside the contact center. Another version can be defined as the 'Beta' version: it can receive calls for test purposes. Several versions can co-exist in a Service, but only two can manage calls: the 'Production' version and the 'Beta' version.

Statistics and Service status are computed for the 'Production' version only.

See also how to activate a version as the 'Production' version of a Service or Sheet U-413.

Service version

A service is divided into versions. Versions allow the Service manager to continue developing the Service while it is in 'Production'. Creating a new version is not necessary for minor changes but is very useful when major changes have to be made to the Service structure. You can create a new version as a carbon copy of an existing version. See how to manage Service sheet versions U-402.

One version can be set as 'Production' Version and another as 'Beta' version.

SIP

Session Initiation Protocol (SIP) is an ASCII-based, peer-to-peer protocol designed to provide telephony services over the Internet. The SIP standard was developed by the Internet Engineering Task Force (IETF) and is one of the most commonly used protocols for VoIP implementations.

SDP

The Session Description Protocol (SDP) is a format for describing streaming media initialization parameters.

RTP

Real Time Protocol (RTP) defines a standardized packet format for delivering audio and video over IP networks.

SRTP

The Secure Real-time Transport Protocol (SRTP) defines a profile of RTP (Real-time Transport Protocol), intended to provide encryption, message authentication and integrity, and replay protection to the RTP data in both unicast and multicast applications.

TLS

Transport Layer Security (TLS) is a security mechanism that operates on the Transport layer, on top of TCP transport. By using TLS as the connection transport, a SIP entity can send and receive SIP messages in a secure, authenticated manner.

VTI/XML

Protocol used to supervise and control IVR-IP type channels.

Zone

A set of wall display lines used to display statuses in real time.

1.5 STYLE CONVENTIONS

The conventions used in the procedures that require software applications are:

- The windows and programs, applications, files, folders, directories, etc. are presented in bold format and in brackets.

  Example: Open the **"Control panel"** folder and select the file **"Install"**.
- The menus in the windows that open on the screen are presented in bold format and in square brackets.

  Example: In the **[Session]** menu, select **[Open]**.
- The tabs in the windows that open on the screen are presented in bold format and in braces.

  Example: Click on the **{Characteristics}** tab.
- The fields in the windows that open on the screen are presented in bold italics format and in braces.

  Example: The ***{Attributes}*** field is used to display the attributes of an item.
- The checkboxes and the buttons in the windows that open on the screen are presented in bold italics format and in brackets.

  Example: Check the ***[Exit]*** box then click ***[OK]***.
- The guests, messages and questions displayed on the screen are presented in bold italics format and in brackets.

  Example: "Press any button to continue..."
- The keyboard keys to be pressed by the operator are in bold and between angle brackets.

  Example: Press **<Enter>**.
- The answers and commands are presented in bold format.

  Example: Enter the **install** ␣ ***.***command.
- The sign " ␣ " stands for the "space" character.
- Names of applications and of major Mitel 5000 Contact Center components are written in the upper case.

  Example: "M5000 CC Service Manager" application as opposed to the person in charge of managing the Service, known as "Service manager", or "M5000 CC Administrator" application as opposed to the person in charge of system administration, called "administrator".

2 CONTENT OF THE KIT

2.1 COMPONENTS

The components are:

- A software kit
- a hardware kit (optional).

Note: *The PC can be integrated at the factory as an additional service to be ordered with the hardware.*

2.1.1 SOFTWARE KIT COMPOSITION

- Installation kit:
  - DVD: M5000 CC installation and tools (Dialogic® driver, HMP driver, Text-To-Speech)
  - dongle
- M5000 CC licence.

Note: *Licenses for optional modules may be added to order.*

2.1.2 COMPOSITION OF THE (OPTIONAL) HARDWARE KIT

- Server PC.
- Dialogic® cards (optional).
- Remote maintenance kit (optional).
- Integration service.
- Removable Ethernet network card if IP/IVR is used.

2.2 CHARACTERISTICS

This section defines the minimum hardware and software specifications of PCs on which M5000 CC applications are to be installed.

2.2.1 PC HARDWARE SPECIFICATIONS

For the PC hardware specifications, please refer to M5000 CC Ordering Guide.

2.2.2 PC SOFTWARE SPECIFICATIONS

For the PC software specifications, please refer to M5000 CC Ordering Guide.

3 SECURITY INSTRUCTIONS

The application should be configured and deployed only after having read this online help.

Mitel 5000 Contact Center should only be installed and configured by skilled and authorized staff.

No intervention other than those described in the manual must be performed in order to prevent any malfunction.

Note: M5000 CC operation is secured by a dongle connected to the parallel port or USB port *of the PC on which the M5000 CC Media Server application is installed.*

Computer media

Follow the recommendations below to avoid computer media damage:

- make back-up copies of original data-storage media,
- install components from back-up copies,
- never leave any data-storage medium in a drive,
- store data-storage media upright, in a dry place and away from light.

4 BASIC INSTALLATION AND CONFIGURATION

Note: *The overall installation-configuration diagram for Mitel 5000 Contact Center is given in Plate 7.1. The figure below gives an example of the general architecture.*

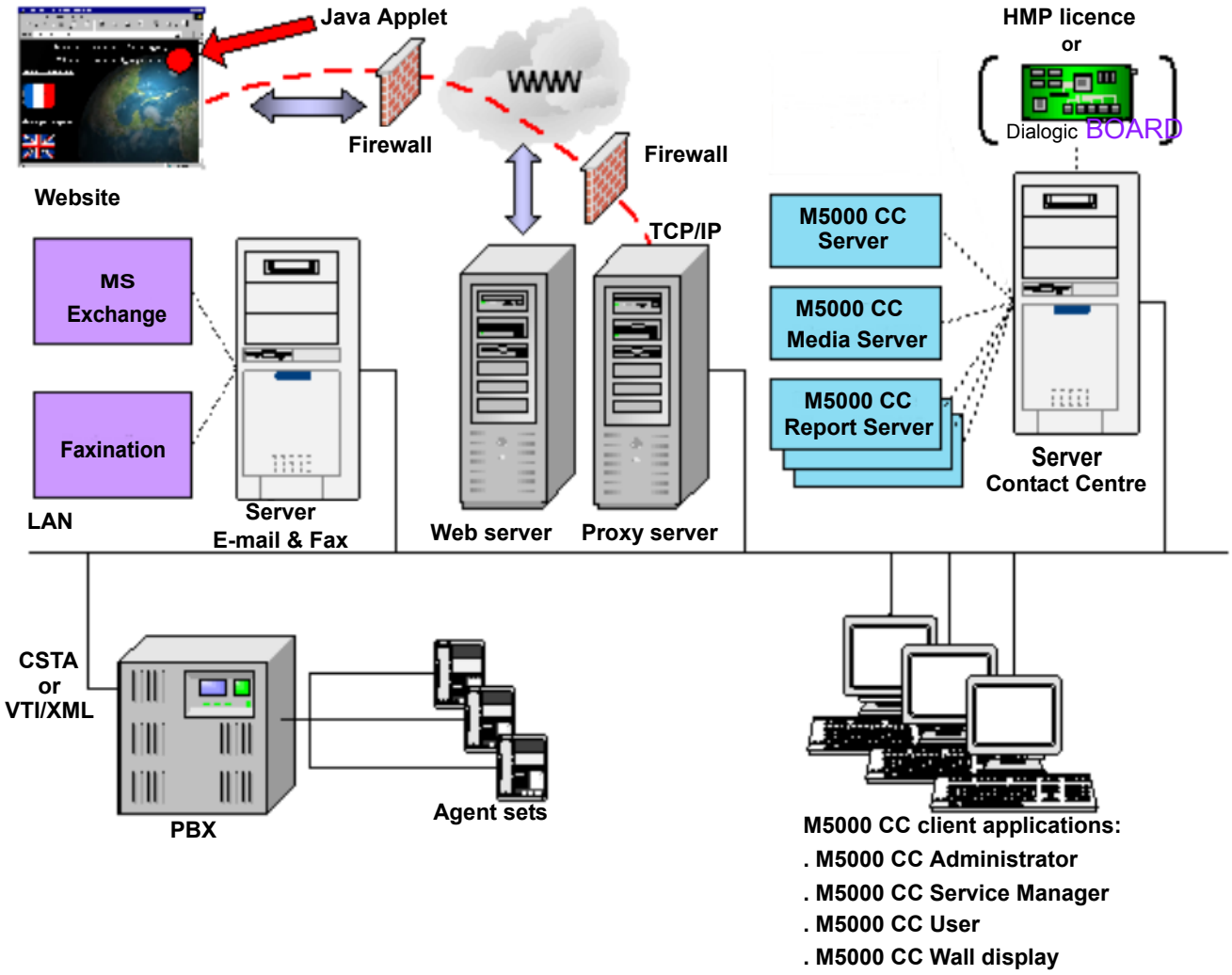


Figure 4.1 EXAMPLE OF GENERAL ARCHITECTURE

4.1 PRELIMINARY HARDWARE INSTALLATION

Caution: *The Dialogic® cards and dongle must be installed with the equipment POWERED DOWN.*

4.1.1 INSTALLING THE DIALOGIC® CARDS

Note: Several Dialogic® cards may be installed on the same M5000 CC Server PC.

You need the PC manufacturer's manual and the Dialogic® card to install the hardware. Then proceed as follows:

- switch off the PC,
- install the card in the central unit (refer to PC manufacturer's manual),
- adjust the card as necessary (refer to the Dialogic® card manufacturer's manual).

4.1.2 INSTALLING THE DONGLE

Note: *In a multi-server configuration install a dongle on each Server PC.*

Connect the dongle to the USB port of the Server PC on which the M5000 CC Server application is installed.

4.2 CONFIGURING THE WINDOWS ENVIRONMENT AND M5000 CC FILE STRUCTURE

Before installing M5000 CC, the **local network (or domain) administrator** and the installer must first carry out the following operations:

- on the "M5000 CC Server" PC:
  - Install the operating system (see Section 4.2.1.1).
  - declare the TCP/IP address of the M5000 CC Server (see section 4.2.1.2),
  - declare the M5000 CC Server in the domain (see section 4.2.1.3),
- on the "Domain server" PC:
  - declare the users, user names and passwords (see section 4.2.2.1),
  - declare an administrator dedicated to the Mitel 5000 Contact Center (see section 4.2.2.2),
  - declare one or more user groups for the M5000 CC Server (see Section 4.2.2.3)
- on the "M5000 CC Server" PC:
  - create the shared directory that will be used later when the M5000 CC File Structure is installed (see section 4.2.3).

4.2.1 CONFIGURING THE M5000 CC SERVER

The following operations must be carried out on the M5000 CC Server PC.

4.2.1.1 INSTALLING THE OPERATING SYSTEM

It is advisable to install Microsoft Windows operating system (with the default functions and latest Service Pack) from the start-up CD-ROM supplied with the PC to avoid having to install all the drivers manually.

The following parameters are recommended:

- RAID level: RAID 1 (mirror mode, for RAID servers only)
- File system: NTFS
- Main partition size: about 25 GB
- With versions earlier than Windows 2000, add the optional component "Windows Installer WMI provider" from Control panel.

Note: *A special configuration may be required for servers in Windows 2003 (see Section 6.7).*

On Dell servers pre-configured by , the following factory settings must be made:

- Install OpenManage from the "Dell Server Management" installation CD-ROM.
- Install Microsoft Office.
- Install Adobe Acrobat Reader.

4.2.1.1.1 CHECKING THE INSTALLATION

Check the presence of the following components:

- Latest Service Pack for Windows
- Windows Installer WMI provider
- Internet Information Services
- OpenManage
- Microsoft Office
- Adobe Acrobat Reader.

Then check the server's functional status using OpenManage.

4.2.1.2 DECLARE THE TCP/IP ADDRESS FOR THE M5000 CC SERVER

Adding the M5000 CC Server to the client network requires the following settings:

- Static TCP/IP address,
- Subnet Mask,
- Default gateway. This gateway is mandatory only if access to external databases is required.

This information must be supplied by the administrator of the customer network.

Procedure:

- Log on to the PC under the local Administrator account.
- From Windows explorer, right click **"Network Favourites"**, then select **[Properties]** from the context

menu.

- In the **"Network and Dial-up connections"** window, right click **"Local area connection"** then select **[Properties]** from the context menu.
- In the **"Local Area Connection Properties"** window, click and select the **"Internet Protocol (TCP/IP)"** icon, then click the ***[Properties]*** button (or double-click the **"Internet Protocol (TCP/IP)"** icon).
  - In the **"Internet Protocol (TCP/IP) Properties"** window:
    - Tick the ***[Use the following IP address] box***.
    - Fill in the **{IP Address }** and **{Sub-Network mask}** fields using the addresses supplied by the administrator.
    - Click ***[OK]***.
  - Click ***[OK]***.
  - On the desktop right-click the icon "Network favourites" and select **[Properties]**.
  - In the "Network and Dial-up connections" window, select **[Advanced parameters...]** in the **[Advanced]** menu.
  - If necessary, move the network card dedicated to the PBX LAN to the top of the list using the arrows " ▲ ".
  - Click ***[OK]***.

4.2.1.3 DECLARE M5000 CC SERVER DOMAIN MEMBERSHIP

Declare the M5000 CC Server domain membership as follows:

- From Windows explorer, right click **"My computer"**, then select **[Properties]** from the pull-down menu.
- Select:
  - on Windows 2000 server: the **{Network identification}** tab, then click the ***[Properties]*** button.
  - on Windows 2003 server: the **{Computer name}** tab, then click the ***[Modify]*** button.
- In the **"Change identification"** window (Windows 2000 server) or **"Change computer name"** window (Windows 2003 server):
  - enter the M5000 CC Server PC name in the **{Computer name}** field,
  - tick the ***[Domain]*** box in the **"Member of"** zone,
  - in the **{Member of - Domain}** field, enter the name of the domain to which the M5000 CC Server belongs,
- Click ***[OK]***.
- In the **"Domain user name and password"** window:
  - Enter the name and password of an authorised account (domain Administrator) in the ***{Name}*** and ***{Password}*** fields,
  - Click ***[OK]***,
  - Click ***[OK]*** in the window where the message "Welcome to the domain" appears,
  - Click ***[OK]*** in the window where the message **"You should restart..."** appears to reboot the Server PC.
  - Wait until the PC has rebooted, then re-open the Windows session under the M5000 CC Administrator account.

4.2.2 CONFIGURING THE DOMAIN SERVER

The following operations must be carried out on the Domain controller.

4.2.2.1 DECLARING M5000 CC USERS, THEIR “NAME” AND “PASSWORDS”

To declare users:

- Select the Windows menu **[Start > Programs > Administrative tools > Active directory users and computers]**,
- In the **"Users and computers Active directory"** window, select the **[Action > New > User]** menu,
- From the **"New Object - User"** window, fill in the following fields:
  - {First name},
  - {Surname},

- {User session opening name}.
- {Phone number} (optional internal number).

- Click ***[Next >]***.
- Enter the same password in the ***{Password}*** field and in the ***{Confirm password}*** field.
- Tick one of the password change and expiry options (see the security policy with the domain administrator),
- Click ***[Next >]***: the **"Users"** zone in the **"Active directory users and computers"** window is incremented by one line with the name of the newly registered user.

4.2.2.2 DECLARE AN ADMINISTRATOR DEDICATED TO THE MITEL 5000 CONTACT CENTER

To declare an administrator dedicated to Mitel 5000 Contact Center, a "user" must be created on the domain Server, then given "administrator" rights for the M5000 CC Server:

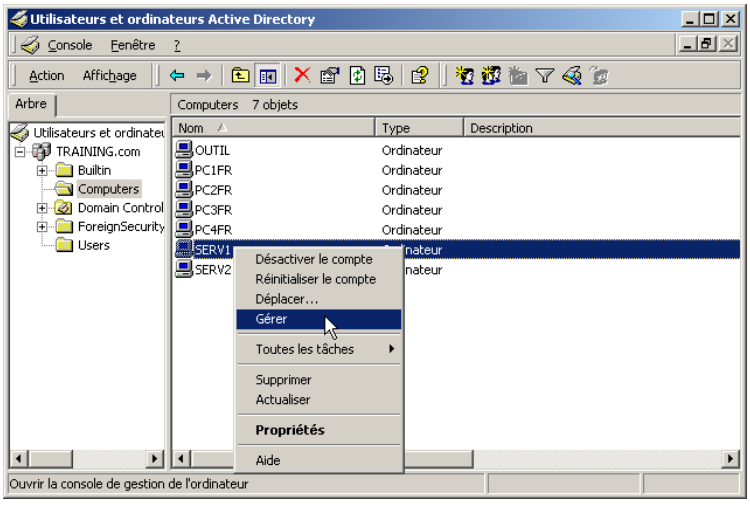
Create a user:

- On the domain Server, from the Windows menu, select **[Start > Programs > Administration tools > Users and computers Active directory]**,
- In the **"Users and computers Active directory"** window, select the **[Action > New > User]** menu,
- From the **"New Object - User"** window, fill in the following fields:
  - {First name}: (example: **adminM5000CC**)
  - {User session opening name}: (example: **adminM5000CC**)

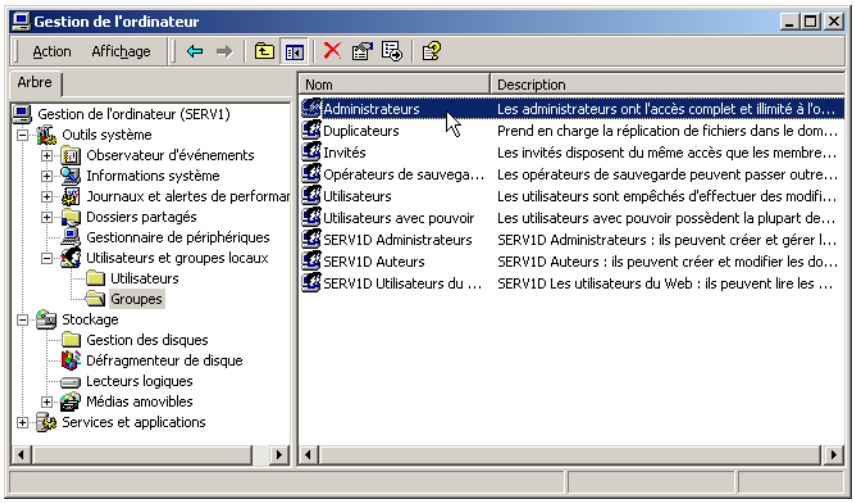
  Note: *The name of the domain relating to the M5000 CC should be displayed to the right of the last field; if it is not, select it from the drop-down list for this field.*
- Click ***[Next >]***.
- Enter the same password in the ***{Password}*** field and in the ***{Confirm password}*** field.
- Tick the following password change and expiry authorization options:
  - [User cannot change password],
  - [Password never expires].
- Check the option ***[Create an Exchange mailbox]*** (this is the box which will be used when the M5000 CC Media Server is configured, see section 4.13.1), then click ***[Next >]***,
- Click ***[Next >]***.
- Click the ***[Finish]*** button; the **"Users"** zone in the **"Users and computers Active directory"** window is incremented by one line bearing the name of the newly registered user.

Grant "administrator" rights for the M5000 CC Server:

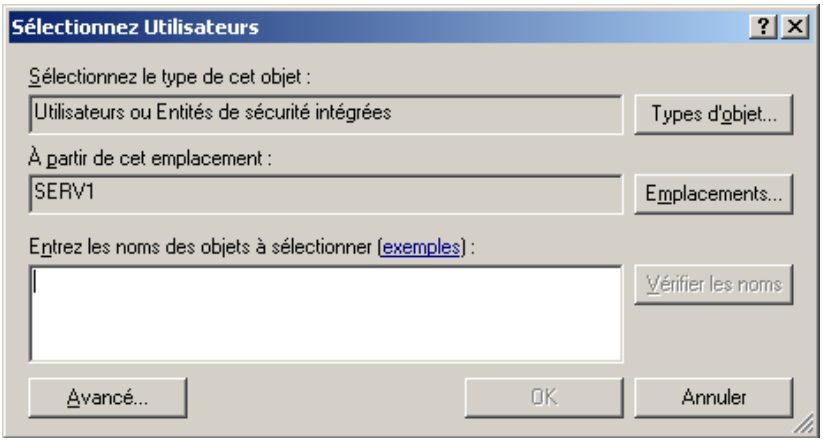
- In the **{Tree}** structure on the left of the previous window **"Users and computers Active directory"**, select the **"Computers"** directory of the domain used by M5000 CC. Then in the frame on the right, select the Server assigned to M5000 CC and then right-click and select **[Manage]** from the popup menu.



- In the **{Tree}** structure on the left of the **"Computer Management"** window, select the directory **"System Tools > Local Users and Groups > Groups"**. Then in the frame on the right, double-click the line "**Groups**", then **"Administrators"**.



- In the **"Administrators Properties"** window click ***[Add]***.
- In the **"Select** Users**"** window, select the domain used by M5000 CC from the **[Look in:]** drop-down list, then select the line of the previously created user (e.g.: adminM5000CC) and click **[Add]**: A new line with the name of the user appears in the **"Members"** frame of the **"Administrators Properties"** window.



- Click the ***[OK]*** button in this window.

4.2.2.3 DECLARE A USER GROUP FOR THE M5000 CC SERVER

The M5000 CC users and the M5000 CC administrator must be in a group.

It may be necessary to create several M5000 CC user groups to distinguish between the different user categories (agent, conference user).

To declare a user group name:

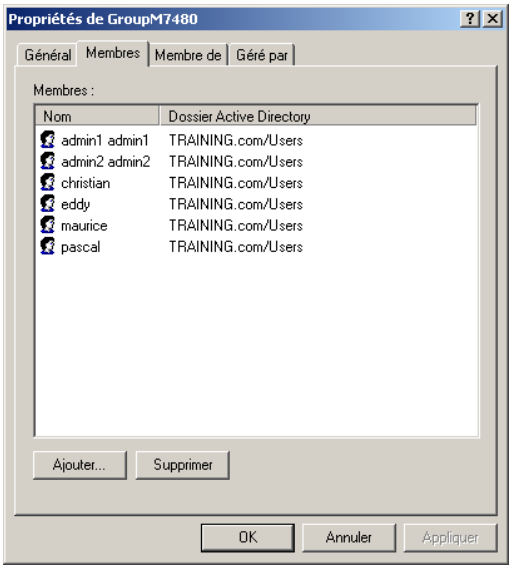
- Select the Windows menu **[Start > Programs > Administrative tools > Active directory users and computers]**,
- In the **"Active directory users and computers"** window, select the **[Action > New > User]** menu,
- In the **"New object - Group"** window:
  - Enter the group name (e.g.: Group M5000CC) in the ***{Group name}*** field
  - Check the related options in the following zones:
    - u **{Group Scope}** zone (see note) :
      - [Domain local]: this type of group only contains users from the local domain in which this group is defined and can only be used in this domain, or
      - ***[Global]***: these groups can only contain users from the local domain. HOWEVER, they can be used in any domain of the forest (a Windows 2000 forest encompasses all of the domains that "share" a common structure at active directory level), or
      - ***[Universal]***: these groups can contain users from any domain in a Windows 2000 forest AND can be used in any domain of the forest. These groups can be seen as not belonging to any particular domain. "Universal" groups do not exist in a domain configured to be compatible with NT4 controllers (Mixed Mode).

      Note: *For M5000 CC, a **"Local Domain"** group should suffice, provided that the M5000 CC Server is located in the same domain as the users. If not, a **"Global"** group should be used. A "Universal" group can also be used, though this type of group increases the replication load between domain controllers and should therefore only be used if absolutely necessary (that is, if it is to contain users from different domains).*

    - u **{Group Type}** zone:
      - ***[Security]***:
- Click ***[OK]***.

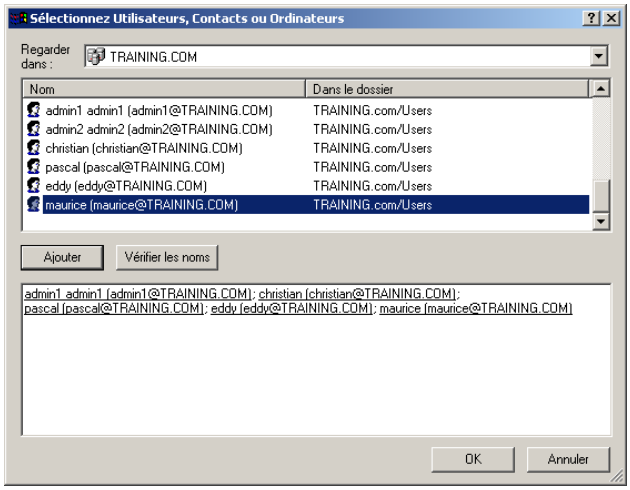
Add the user to the group of M5000 CC users:

- In the previous window **"Active directory users and computers"**, select **"Groups"** in the **{Tree}** on the left of window. Select the line of the related group, then right click and select the **[Properties]** command from the contextual menu (or from the **[Action > Properties]** menu.
- From the **"Properties of <Group Name>"** window, select the ***{Members}*** tab.
  - Click ***[Add]***: the window **"Select Users, Contacts, Computers, or Groups "** opens:



  - In the upper frame, select the users concerned, then click ***[Add]*** (or double-click the user to be added):

the added users appear in the lower frame.



(Windows 2000 server)

(Windows 2003 server)

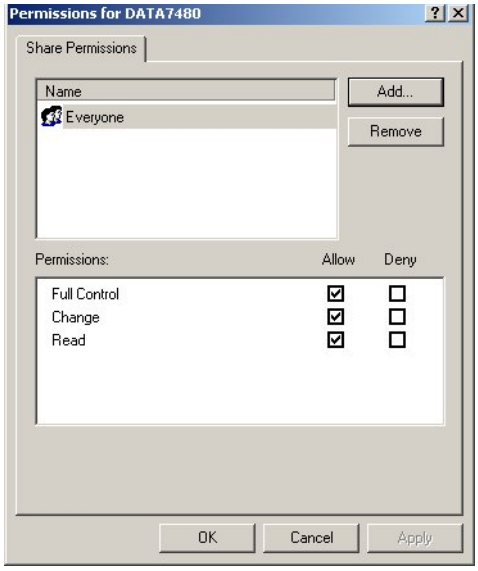
- Once all the users have been added, click ***[OK]***.

4.2.3 CREATE THE "DATAM5000CC" SHARED DIRECTORY ON THE "M5000 CC SERVER" PC.

The M5000 CC Server must have a shared directory containing the M5000 CC File Structure.

It is advisable to create this directory in a different NTFS partition of the main partition so as to be able to reinstall the operating system without loosing the M5000 CC data. This partition can be created using the server management tool.

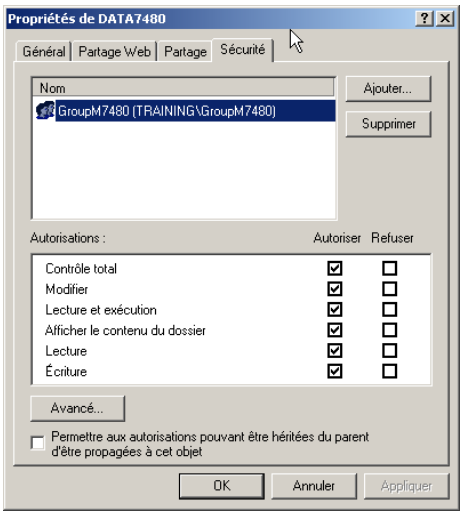
- Create the shared directory in Windows explorer:
  - Create a shared directory with the name **"DATAM5000CC"**.
  - Create a sub-folder in the **"DATAM5000CC"** folder with the name "**M5000CC"**.
- To display the shared directory:
  - In Windows explorer, right click the "DATAM5000CC" directory to be shared, and in the drop-down menu select **[Properties]**.
  - Select the **{Sharing}** tab, then tick the following options:
    - u ***[Share this folder]***,
    - u ***[Maximum allowed]***.
  - Click the ***[Permissions]*** button, then:
    - u click [Add].
    - u Select the M5000CC group, then in the **"Permissions"** frame, tick the ***[Allow]*** box on the right of the **"Full Control"** line.
    - u Delete the line "Everyone" from the **"Name"** frame by selecting it and clicking the ***[Remove]*** button.



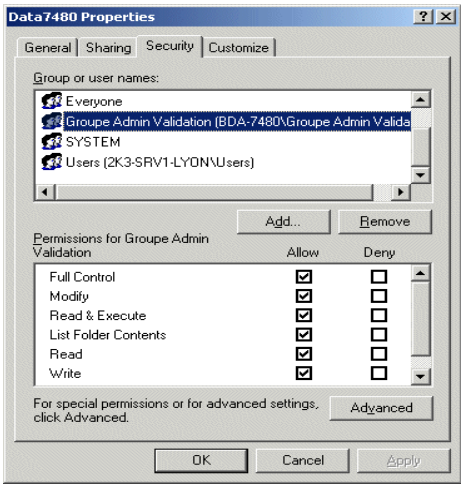
- Click ***[OK]***.

• To define access rights to the shared directory:

- In the previous Properties window for the directory to be shared, select the **{Security}** tab, then:
  - u click [Add].
  - u Select the **M5000CC user group(s)**.
  - u then, in the **"Permissions"** frame, tick the ***[Allow]*** box on the right of the **"Full Control"** line.
  - u On the Windows 2000 server, delete the line "Everyone" by selecting it and clicking the ***[Remove]*** button.



(Windows 2000 server)



(Windows 2003 server)

- Click ***[OK]***.

4.3 CONFIGURING THE PBX

4.3.1 PBX CONFIGURATION

This section concerns configurations with or without IVR.

Note: The PBX release must be 2.1 or above for the Reject21 function to be used.
For the IP IVR resources to be used, the PBX release must be above or equal to R3.2 - F2E.

4.3.1.1 OVERVIEW

M5000 CC may be connected to a MiVoice 5000.

Programming is performed in three phases:

- Creating agent terminal extensions These terminals will be divided into cyclic hunt groups.
- Defining IP IVR channels and/or call pits:
  - IP IVR solution: create logical subscribers. IVR/IP resources will be placed in a hunt group with the longest idle time.
  - solution without IVR: create inbound call pits and message call pits for calls on-hold and program them on empty hunt groups or multi-CCO sets.
- Create the DNISes on a multi-line set and forward each number to the IP IVR channels hunt group (solution with IVR) or to an incoming call pit (solution without IVR).

4.3.1.2 DEFINING AGENT SETS

- Select the menu: **1 – 1 – 1 USER CHARACTERISTICS**
- Defining agent sets
- First define the user by his digital subscriber card "equipment number"

```
SUBSCR. STATUS                              IN SERVICE
INTERCEPTION PROTECTION                     YES
INTRUSION ALLOWED                           NO
WAITING CALL                                REFUSE
HUNT GROUP SETTING ALLOWED                  YES
```

Note: The agents must belong to a company different from SOC0.

4.3.1.3 CREATING THE AGENT SET HUNT GROUP

- Select the menu: **1 – 1 – 4 HUNT GROUP CHARACTERISTICS**
- Select a "cyclic" hunt group.
- Add the agent terminals (16 or 32 depending on PBX) to a “cyclic” group.

```
HUNT GROUP DIRECTORY NUMBER          15
DIRECTORY NUMBER                     5049
HUNT GROUP NAME
HUNT GROUP TYPE                      CYCLIC
HUNT GROUP SUBSCRIBERS DIRECTORY NO. 5000
                                     5001
                                     ....
```

Note: An error message appears if the subscriber has not been configured "HUNT GROUP SETTING ALLOWED = YES".

4.3.1.4 CREATING DIALOGIC® RESOURCES (SOLUTION WITH IVR ONLY)

- Select the menu: **1 – 1 – 1 USER CHARACTERISTICS**
- Define the Dialogic® resources
- First select an analogue subscriber card equipment number

```
SUBSCR. STATUS                       IN SERVICE
SET TYPE                             KEYPAD
INTERCEPTION PROTECTION              YES
INTRUSION ALLOWED                    NO
WAITING CALL                         REFUSE
```

4.3.1.5 CREATING THE DIALOGIC® RESOURCES HUNT GROUP (SOLUTION WITH IVR ONLY)

The notion of hunt group makes it possible to guarantee independence between the M5000 CC Media Server resources and the DNIS as well as their respective numbers. With this method, the different Services will share the same IVR resources and the system will be able to manage several simultaneous calls for this DNIS.

- Select the menu: **1 – 1 – 4 HUNT GROUP CHARACTERISTICS**
- Select a cyclic hunt group.
- Add Dialogic® resources to a cyclic hunt group

```
HUNT GROUP DIRECTORY NUMBER          10
DIRECTORY NUMBER                     2009
HUNT GROUP NAME                      DIALOGIC®
HUNT GROUP TYPE                      CYCLIC
WAITING CALL                         REFUSE
HUNT GROUP SUBSCRIBERS DIRECTORY NO. 2001
                                     2002
                                     ....
```

Note: "Call Distribution Services" should be added for handling possible failures of the M5000 CC Server or computer network. A call distribution service should contain the DNISes programmed on a multi-line set.

4.3.1.6 CREATING IP IVR RESOURCES (SOLUTION WITH IP IVR ONLY)

Each IP IVR (or IP conference) channel in M5000 CC is declared as an ETHERSET type IP set. So, you have to unlock a number of IP sets equal to (or more than) the number of IP channels (IVR + Conference) in M5000 CC.

- Select the menu: **1 – 1 – 2 – 1 – CREATE LOGICAL SUBSCRIBERS**
- Define the logical subscriber by selecting ETHERSET.

```
SUBSCRIBER TYPE                                ETHERSET
ALREADY DECLARED: --            UNLOCKED: --
FIRST DIRECTORY NUMBER                         3010
NUMBER OF SUBSCRIBERS REQUIRED                 1
WITH CONTROL OF EXISTENCE MULTISITE            YES
ACCESSIBLE DID IN PLAN 1                       NO
EXT. LAST CALLERS CALL BACK                    NO
```

4.3.1.7 DEFINING IP IVR RESOURCE FUNCTIONS (SOLUTION WITH IP IVR ONLY)

To configure the features associated with one or more IP IVR resources, you have to define a feature class dedicated to these resources.

- Select the menu: **1 - 1 - 7 - 4 DEFINITION OF FEATURE CLASSES**
- Choose the creation of a new XY feature.
- Define the parameters as follows:

```
ACCESS TO PAGING                          NO
PRIVILEGED SET                           NO
PROTECTION OVERRIDE- INTERCEPTION        YES
LOCKING ALLOWED                           NO
UNLOCKING ALLOWED                        YES
MOBILE RECORDING ALLOWED                  NO
INTERCEPTION PROTECTION                  YES
NIGHT CATEGORY OVERRIDE                  NO
CALL FORWARDING PROTECTION               NO
DYNAMIC PROTECTION                       NO
DO NOT DISTURB ALLOWED                   NO
INTRUSION ALLOWED                        NO
INTRUSION ACCEPTED                       NO
LISTENING/INTERVENTION ALLOWED           NO
LISTENING/INTERVENTION ACCEPTED          NO
MASTER OF CONFERENCE                     NO
PRE-EMPTIVE REROUTING TO VOICEMAIL       NO
USE OF DISA FUNCTION                     NO
CALL WAITING                             REJECTED
RETURN TO CONSOLE ON SPEC. TIME-OUT      NO
EXTERNAL FORWARDING ALLOWED              YES
ASSISTANT FORWARDING ALLOWED             NO
SPEAKER PAGING                           NO
NETWORK SHIFT ALLOWED                    YES
NETWORK REROUTING ALLOWED                YES
ID SENT TO TO PUBLIC NETWORK             N.D.S
ID SENT TO PRIVATE NETWORK               N.D.S
ID SENT CAN BE MODIF. FOR EACH CALL      NO
PRIORITY SET                             NO
IMMEDIATE FORWARDING ALLOWED             YES
FORWARDING ON BUSY ALLOWED               YES
FORWARD ON NO ANSWER ALLOWED             YES
RING DURATION BEFORE FORWARD             STANDARD
RECORDED CALLS ALLOWED                   NO
AUTOMATIC CALLBACK ALLOWED               NO
APPOINTMENT REMINDER ALLOWED             NO
COMMON ABBREV. NUMBERS ALLOWED           NO
PRIVATE ABBREV. NUMBERS ALLOWED          NO
PERSONAL CALLS ALLOWED                   NO
TRANSFER BEFORE ANSWER ALLOWED           YES
HUNT GROUP SETTING ALLOWED               YES
LOGOFF ACCEPTANCE                        NO
HOTEL ROOM SET TYPE                      NO
EXT.LAST CALLERS CALL BACK               NO
MAINTENANCE SET                          NO
EXTENSION WITH PREPAYMENT                NO
EXTENSION WITH MULTI-CHARGING            NO
BUSY FOR HUNT GROUP ON 1ST CALL          YES
```

Note: *By default, disable a feature that is not described in this document.*

Then for each IP IVR resource defined, assign it the new XY feature.

- Select the menu: **1 - 1 - 1 EXTENSION CHARACTERISTICS**

```
XY FEATURE CLASS
```

Note: *If you are not using the feature classes, the ETHERSETs must have certain features defined:*

- "Grouped line" set to "YES"
- "Call back last external callers" for F1/F6 or "External call log" for F4 set to "NO"
- "Busy for 1st-call hunt group" for F1/F6 or "Only one call on multi-lines" for F4 set to "YES".

Note: *The number of VoIP must be able to absorb the traffic in keeping with the PBX engineering rules. Therefore, it is more than the number of HMP channels.*

Note: *Do not forget to associate an encoding law for the IP IVR (Etherset) resources (see SectionDefining the encoding law for IP channels (solution with IP IVR only)).*

4.3.1.8 CREATING IP IVR RESOURCE HUNT GROUP (SOLUTION WITH IP IVR ONLY)

The HMP channels are configured statically, either for IP conference or for IP IVR.

- Select the menu: **1 – 1 – 4 HUNT GROUP CHARACTERISTICS**
- Select a hunt group with the "longest idle time.
- Add the IVR/IP resources in the hunt group with the longest idle time.

```
HUNT GROUP DIRECTORY NUMBER          9
DIRECTORY NUMBER                     2499
IP IVR GPT                           HUNT GROUP
HUNT GROUP TYPE                      PAUSE TIME
WAITING CALL                         REFUSE
HUNT GROUP SUBSCRIBERS DIRECTORY NO. 3001
                                     3002
                                     ....
```

Note: ETHERSETs are added to an "Idle time" type hunt group for F1/F6 or "Distrib. Idle" hunt group for F4. This hunt group must have the feature "Protection against waiting calls" set to "YES".

Note: If the "Conference bridge" function must be used in Mitel 5000 Contact Center during installation, you have to create a second hunt group different from this type.

Note: On F4, ETHERSETs in the same hunt group (conference or IP IVR) can be spread over a maximum of two clusters; in this case, set DCF 301 to "1".

4.3.1.9 DEFINING THE ENCODING LAW FOR IP CHANNELS (SOLUTION WITH IP IVR ONLY)

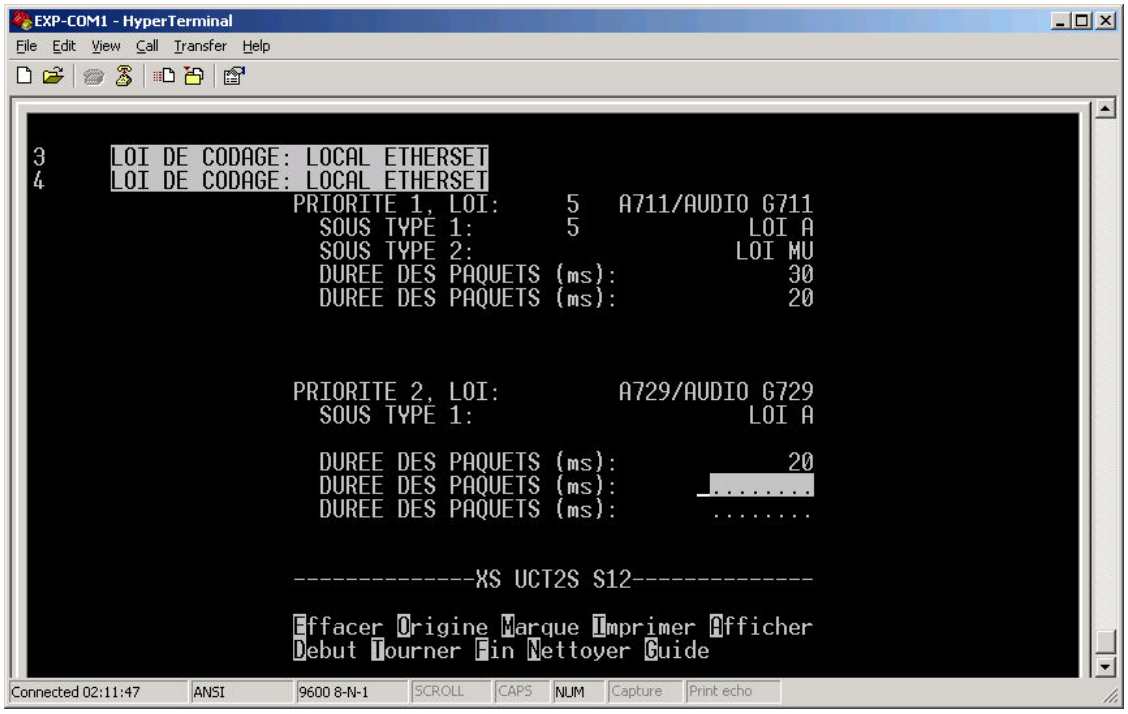
The recommended encoding law is "G711-30 ms" because it brings in the following advantages:

- Good audio quality
- Low media server CPU consumption (additional CPU load if the encoding law is not G71: 25%)
- Allows 32 communications with a PT2 or PVI.

The encoding law can be configured on the PBX by the "XPASIP" MMC on F4 or the "VoIP encoding law" menu for F1/F6; it is advisable to leave G711 30 ms only for Local/Ethersets.

IMPORTANT: there is no reservation mechanism for VoIPs on the PBX side.

- Select the MMC menu: **1 – 7 – 7 VOIP ENCODING LAW**
- Select INTERNAL call and ETHERSET;
  The following MMC window opens:



- Choose in this window the encoding law that the IP IVR resource must follow.

Note: In an IVR or conference configuration, a digital set (DNIS) is called, which is forwarded to the hunt group containing ETHERSET resources. For this call type which is diverted, negotiation is made as follows:

•For an internal (or multi-site) call, it is the encoding law list defined for ETHERSETs that has priority:

•For a network call, it is the network half-call that has priority.

4.3.1.10 DECLARING CALL PITS (SOLUTION WITHOUT IVR ONLY)

You must:

- either create empty (or virtual) hunt groups,
- or create call pits on multi-CCO sets (see Note).

Note: The number of hunt groups is limited to 30. Beyond this limit, the following method can be used for defining call pits, though it does have the disadvantage of using PBX resources (junctor, set, directory number, etc.). Empty hunt groups may be created in PBX release 2.1 and later.

Creating empty hunt groups:

- Select the menu: **1 – 1 – 4 HUNT GROUP CHARACTERISTICS**

```
DIRECTORY NUMBER                        3009
HUNT GROUP NAME                         PAE
HUNT GROUP TYPE                         EMPTY
CALL WAITING BEFORE RETURN TO OP (SECONDS)15
WAITING CALL                            ACCEPTED AND BEEP
```

Creating call pits on multi-CCO sets

The first three configuration steps are common to inbound call pits and message call pits (see sections 4.3.1.11.1 to 4.3.1.11.3).

4.3.1.10.1 DECLARING MULTI-CCO SETS

- Select the menu: **1 – 1 – 1 USER CHARACTERISTICS**
- First select an equipment number on a subscriber card.

```
SUBSCR. STATUS                                  IN SERVICE
INTRUSION ALLOWED                               NO
USE AS VIRTUAL SET ALLOWED                      YES
```

4.3.1.10.2 ASSOCIATING THE INBOUND CALL PIT TO MULTI-CCO SETS

- Select the menu: **1 – 1 – 5 ADD/DELETE SUBSCRIBERS**
- Several inbound call pits can be configured on the same multi-CCO set since calls are never redirected between inbound call pits.

4.3.1.10.3 PROGRAMMING THE KEYS OF MULTI-CCO SETS AS INBOUND CALL PITS

- Select the menu: **1 – 1 – 8 – 1 PROGRAMMING KEYS**
- Select the number of the multi-CCO set for the call pits.

```
NUMBER OF THE KEY TO EDIT                       01
```

```
NUMBER ASSIGNED TO KEY                          2050
PROGRAMMING TYPE                                M: MON YOUR MULTIKEY NUMBER
PROTECTED KEY                                   YES
PROGRAMMING VALIDATION                          YES
```

- The number of keys programmed as inbound call pit corresponds to the number of calls that can be received simultaneously (this number must be limited to 10).
- Key protection can be used to prevent the key from being programmed on the set.

4.3.1.11 DECLARING MESSAGE CALL PITS

4.3.1.11.1 CREATE A TONE FOR EACH MESSAGE

For each sound on the "MUSIC" card, create a definable tone.

- Select the menu: **5 – 5 – 1 DEFINING A TONE**

```
OR DEFINABLE, NUMBER (64 TO 111)    101
SIGNAL TYPE                         PHRASE
ANNOUNCEMENT FROM                   CC1/BVF
SLOT/CARD/EQT OR MESSAGE NUMBER     0522
```

- Define one tone per service.
- Replace the usual tones with a message.

4.3.1.11.2 CREATE A COMPANY/DEPARTMENT FOR EACH MESSAGE

- Select the menu: **1 – 8 – 2 DEPARTMENT NAMES**
- Enter a number and name for each department

```
DEPARTMENT NUMBER                           1
NAMED                                       DEPT1
```

Note: Do not alter service 0, which is created by default.

4.3.1.11.3 REPLACE THE COMPANY/DEPARTMENT TONES WITH DEFINABLE TONES

- Select the menu: **5 – 5 – 5 COMPANY/DEPARTMENT SPECIFIC TONES**
- Enter the department with which you want to associate the announcement and replace the following four tones:
  - BF ANS: EXT FREE
  - AF ANS: EXT FREE
  - BF ANS: EXT BUSY

- AF ANS: EXT BUSY

```
AND DEPARTMENT                          DEPT1
TONE                                    BF ANS: EXT FREE
IS REPLACED BY DEFINABLE TONE
NUMBER (64 TO 111)                      101
```

- Select the menu **5 – 5 – 7 DISPLAY DEFINABLE TONES** in order to display a summary of the replaced tones.

4.3.1.11.4 CREATE THE MESSAGE CALL PITS

The procedure is the same as for inbound call pits (see section 4.3.1.10), except that a Company/Department pair needs to be associated with each number.

Note: If a multi-CCO set is used, it is necessary to program as many keys per number as there are messages which may be played simultaneously.

4.3.1.12 PROGRAMMING AND FORWARDING DNISES

Create the DNISes on a multi-CCO set and forward each number to the Dialogic® channels or IP IVR hunt group (solution with IVR) or incoming call pit (solution without IVR).

4.3.1.12.1 DECLARE A MULTI-LINE SET

- Select the menu: **1 – 1 – 1 USER CHARACTERISTICS**
- First declare the user by his equipment number.

```
SUBSCR. STATUS                                IN SERVICE
INTRUSION ALLOWED                             NO
USE AS VIRTUAL SET ALLOWED                    YES
```

4.3.1.12.2 ASSOCIATE SUBSCRIBER NUMBERS (DNISES) WITH THE MULTI-LINE SET

- Select the menu: **1 – 1 – 5 ADD/DELETE SUBSCRIBERS**
- Select the reference directory number created previously.
- Add subscriber numbers (DNISes) to the multi-line set.

4.3.1.12.3 RESERVING KEYS FOR DNIS

- Select the menu: **1 – 1 – 8 – 1 PROGRAMMED KEYS**
- Select the DNIS directory number and the key to edit.

```
NUMBER ASSIGNED TO KEY                2050
PROGRAMMING TYPE                      M: MON YOUR MULTIKEY NUMBER
PROTECTED KEY                         YES
PROGRAMMING VALIDATION                YES
```

- Reserve one key for each DNIS.

4.3.1.12.4 FORWARD EACH DNIS AVAILABLE ON THE MULTI-LINE SET TO A HUNT GROUP MADE UP OF DIALOGIC® CARD RESOURCES AND IP IVR RESOURCES, OR TO THE INCOMING CALL PIT.

- Select the menu: **1 – 1 – 9 – 6 FORWARDING MANAGEMENT**
- Select the DNIS directory number to be forwarded.

```
TYPE                                  IMMEDIATE
FORWARDING NUMBER                     2009
FORWARDING LOCKED                     YES
ACTION                                ACTIVATE
```

Forwarding number:

- Solution with IVR: enter the Dialogic® or IP IVR channels hunt group directory number.
- Solution without IVR: enter the inbound call pit directory number.

4.3.1.13 CHECKING THE PBX CONFIGURATION

To check the PBX configuration and the proper operation of the associated telephone sets, call the various sets configured to make the sure the connections, forwarding, etc. are correct.

4.3.2 CSTA CONFIGURATION ON THE PBX

4.3.2.1 CONNECTIONS

4.3.2.1.1 DEFINITION

On the PBX the total number of supervisable objects per CSTA port is 255:

- Agent sets,
- Dialogic® channels,
- IP IVR channels
- inbound call pits,
- message call pits.

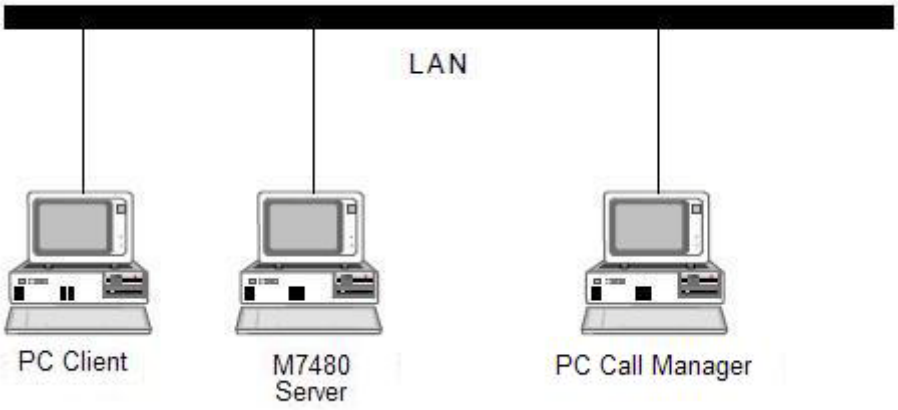
Caution: *When declaring the CSTA port, set **TPKT** mode (not declared by default).*

Note: If there are more than 255 supervisable objects, several CSTA ports are required (maximum = 8 in a multisite network).

The SERVTL/SERVTP server is used for the CSTA, with subaddress 6 and the internal number used (0 to 7).

The complete numbering sequence is thus 9xx 011 6 y (PROM Range) or 9xx 0096 6 y (DISK Range).

4.3.2.1.2 PBX M6501: PT2 CARD / M6540 PBX: PVI CARD

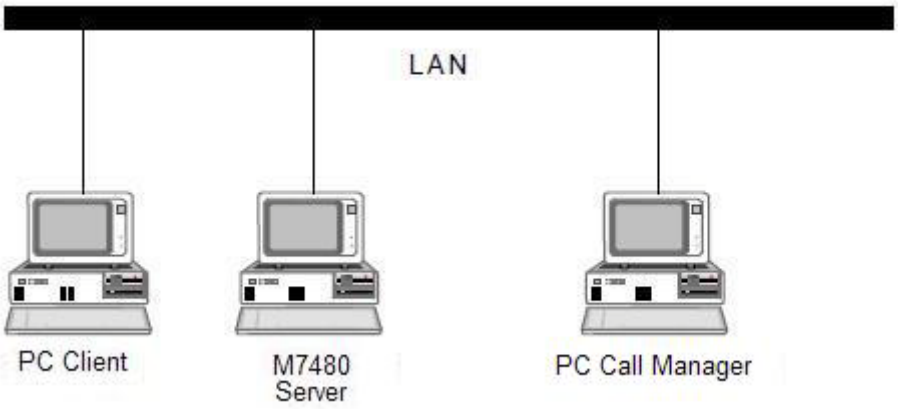


The PT2/PVI card is plugged directly into an RJ45 connector.

This card is available from release 1.3.

4.3.2.1.3 CALL MANAGER: PTX CARD

Call Manager is available from release 1.2



4.3.2.2 CONFIGURING THE PT2 CARD LINK OF A PBX

Declaring the card in a PBX (PROM range):

`1 : PT2 card equipment DISABLED`

3/2 CARD MANAGEMENT
CARD 0-04 : TYPE **N-CHANNEL PTx**
: **DISABLED**

2 : Link 0 equipment on the PT2 card: DISABLED

2/1/1 CHARACTERISTICS OF A PT2 LINK 0-04-00

STATUS	DISABLED	.....
NAME	PT2	
DIRECTORY NUMBER	4000....	
CATEGORY	CATEG_1	
COMPANY	COMP 0	
DEPARTMENT	DEPT 0	
ACCESS LISTS	.....	
OUTGOING CUG (0-----15) 1000000000000000		
MODIFY GROUP NUMBER:	...	
INCOMING CUG (0-----15) 1000000000000000		
MODIFY GROUP NUMBER:	...	
NR. OF LOGIC. CHANNELS EQUIPPED (1/250) 16.		
NR. OF OUTGOING LOGIC. CHANNELS (0/250) 0..		
NR. OF INCOMING LOGIC. CHANNELS 0/250) 0..		

3 : Declaring the gateway address

2/8/1 GATEWAY CHARACTERISTICS

PT2 CARD SLOT: 0-04

IP ADDRESS131.131.131.1..

MASK255.255.255.0..

DEFAULT ROUTER.....

UDP PORT 40000

ETHERNET ADDRESS08-00-71-03-00-20(given by the card)

Note: This menu is different for NEXSPAN (menu 3-2-3).

4 : Declaring the gateway ports

2/8/3 or 2/8/2/3 DISPLAY PORT TCP -TRANSL. ADDR. X.25

GATEWAY PORTNUMBER X25

0-04-00 9999 901003NOT DEFINED(Afiser)

0-04-00 **3211** **901160TPKT**(CSTA)

0-04-00 **2555** **901161**NOT DEFINED(CSTA Call Path)

For declaring a port:

2/8/3 or 2/8/2/1 TCP/IP - X25 ADDRESS PORT TRANSLATION

DIRECTORY NUMBER = 4000.

(or the number declared on the 0 link)

PORT = 3636

X25 NUMBER = 901160

MODE = **TPKT**

CALL DATA = (empty)

ACTION = WRITE

address: 9xx0116y = X25 number to call a CSTA server

internal routing 9xx +

SERVTL call number 011 +

CSTA sub-address 6 +

server number 0 to 7: y

5 : Putting the PT2 card in service: IN SERVICE

3/2 CARD MANAGEMENT

CARD 0-04	: TYPE	**N-CHANNEL PTx**
	:	**IN SERVICE**

6 : Putting link 0 on the PT2 card in service: IN SERVICE

2/1/1 CHARACTERISTICS OF A PT2 LINK 0-04-00

STATUS **IN SERVICE**

4.3.2.3 CONFIGURING THE PVI CARD LINK OF AN M6540 PBX

Declaring the card in an M6540 PBX:

1 : PVI card equipment: DISABLED

3/2/2 "MULTIBUS" CARD MANAGEMENT

```
CARD 0-C4     : TYPE          PVI card
                :               DISABLED
```

2 : Link 0 equipment on the PVI card: DISABLED

2/1/1 PVI LINK 0-C4-00

```
STATUS                                      DISABLED          .....
NAME                                        PVI
DIRECTORY NUMBER                            4000....
CATEGORY                                    CATEG_1
ACCESS LISTS .                              .......
OUTBOUND CUG (0-----15)    1000000000000000
MODIFY GROUP NUMBER:                                          ...
INCOMING CUG (0-----15)  1000000000000000
MODIFY GROUP NUMBER:                                          ...
NR. OF LOGIC. CHANNELS EQUIPPED (1/250)  10.
NR. OF OUTGOING LOGIC. CHANNELS 0/250)   0..
NR. OF INCOMING LOGIC. CHANNELS 0/250)   0..
```

3 : Declaring the gateway address

2/8/1 GATEWAY CHARACTERISTICS

PVI CARD SLOT 0-C4

```
---------------------------
IP ADDRESS              131.131.131.1..
MASK                    255.255.255.0..
DEFAULT ROUTER          ................
ETHERNET ADDRESS  08-00-71-03-00-20 (given by the card)
```

4 : Declaring the gateway ports

2/8/3 or 2/8/2/2 DISPLAY. PORT TCP -TRANSL. ADDR. X.25

GATEWAYPORT	NUMBER	X25	
0-C4-009999	901003	NOT DEFINED	(Afiser)
0-C4-00**3211**	**901160**	**TPKT**	(CSTA M5000 CC_ server 0)
0-C4-00**2555**	**901161**	NOT DEFINED	(CSTA Call Path)

For declaring a port:

2/8/3 or 2/8/2/1 TCP/IP - X25 ADDRESS PORT TRANSLATION
DIRECTORY NUMBER = 4000.
(or the number declared on the 0 link)
PORT = 3211
X25 NUMBER = 901160
MODE = **TPKT** (for M5000 CC)
CALL DATA = (empty)
ACTION = WRITE
address: 9xx0116y = X25 number to call a CSTA server
internal routing 9xx +
SERVTL call number 011 +
CSTA sub-address 6 +
server number 0 to 7: y

5 : Putting the PVI card in service: IN SERVICE

3/2/2 "MULTIBUS" CARD MANAGEMENT

```
CARD 0-C4    : TYPE          PVI card
             :               IN SERVICE
```

6 : Putting link 0 on the CRI card in service: IN SERVICE

2/1/1 PVI LINK 0-C4-00
STATUS **IN SERVICE**

4.3.2.4 CONFIGURING THE PVI CARD LINK ON A 6550 PBX

Declaring the card in a 6550 PBX:

1 : XETBLS: fit the CRI card with software variant 25 in a CLX slot.

2 : XPASIP: enter the IP address of the PVI card

STATION

For the cluster and the card concerned:

IP address
Sub-network mask
Router by default
Ethernet address: (MAC address given by the card)

3 : XTLIAI create the PVI card link 0

DATA LINK:

For the cluster and the PVI card, use link 0 (mandatory for operation in gateway mode):

Reverse charging = Denied
Link type = CRI/PVI
category = 7
Close group type = CUG
Supervized link = NO
Sub type = GATEWAY
Nb L.C. equipped = 10
(same as the number of CSTA server applications that can be connected to the PABX)
Nb L.C. outb. :0
Nb L.C. inbound :0

4 : XPASIP: create IP/X25 associations

REMOTE X25

For the cluster and CRI card:

- for a CSTA link:
  - Port for server SERVTP :3211
  - Port for server SERVTP :2555 (CSTA Call Path)
  - X25 number = call number of the CSTA server (internal routing + SERVTP call number + subaddress 6 + server number 0 to 7)

Example:

3211 --- 9009660 --- **TPKT** (for M5000 CC)

2555 --- 9009661 --- not delimited (authentication code (US function))

5 : XETBLS: reload the PVI card and put CLX link 0 in service

4.3.2.5 CONFIGURING THE CALL MANAGER

Check that the following components are present:

2/1/3 SERVTL CSTA Server 011
Max packet data field size128
Nr of logic. channels equipped16
Nr of outgoing logic. channels0
Nr of incoming logic. channels0

3/2 CARD MANAGEMENT :
CARD 0-00 TYPE 00 CHANNEL PTx

2/1/2 DISPLAY LINKS BY DIRECTORY NUMBER.
COMPANY = *****
No.=030 EQT No.=0-00-00 Type =IP GWY name =PASS

2/1/1 LINK directory number = 030
Category CATEG_1
Company CMPNY 0
Department DEPT 0
Nr of logic. channels equipped16
Nr of outgoing logic. channels0
Nr of incoming logic. channels0

2/7/1 SET CHARACTERISTICS

(data recovered from the configuration of the network card in the PC)

2/7/2 TCP/IP - X25 GATEWAY LINK
2/7/2/3 TCP/IP – ADDR. PORT DISPLAY X.25
DIR No.=030 port=3211 X25 Number = 901160 mode = **TPKT**

For declaring / changing / deleting a port (disable link 0)

2/7/2 TCP/IP - X25 TRANSLATION
DIRECTORY NUMBER = 030
PORT = 3211

```
X25 NUMBER = 901160
MODE = TPKT
CALL DATA = (empty)
ACTION = WRITE
```

3/2 CARD MANAGEMENT
2/1/1 LINK CHARACTERISTICS

Remember to put the PTx card and/or link in service if they were disabled.

4.3.2.6 MISCELLANEOUS PARAMETERS

4.3.2.6.1 UNLOCKING

The CSTA function must first be unlocked in the PBX before CSTA objects can be supervised.

The limit is set by the maximum number of objects that can be supervised. If several applications or several internal servers are used, the limit applies to the total number of counters for each server.

Different CSTA functions:

- CSTA 4 Objects
- CSTA 8 Objects
- CSTA 16 Objects
- CSTA 32 Objects
- CSTA 64 Objects
- CSTA 128 Objects
- CSTA 256 Objects
- CSTA 512 Objects
- CSTA 1024 Objects
- CSTA 2048 Objects

4.3.2.6.2 USE OF SEVERAL CSTA PORTS

If several CTI applications (each using a CSTA link) are to be used or if one CTI application (using several internal CSTA links) is to be used, remember to use a different CSTA port for each application.

CSTA links do not necessarily use the same SERVTP of the same cluster and/or of the same site. With an X25 connection, this means that a different X25 number is called.

With an IP connection, this means that a different IP port must be set in an external X25/IP or PBX gateway (PT2, PTx, PVI card) for each CSTA port.

For instance : the following configuration could be used on a PT2 card:

Reminder: the normal mode for M5000 CC is "**TPKT**" mode:

port = 3211 - X25 ad = 90101160 used for CSTA 0:

- 901 : multisite local routing (data),
- 011 : address of SERVTL server,
- 6 : CSTA sub-address,
- 0 : No. of CSTA server (from 0 to 7).

port = 4211 - X25 ad = 901009861 used for CSTA 1

port = 4212 - X25 ad = 902009662 used for CSTA 2

port = 4217 - X25 ad = 902009867 used for CSTA 7

4.4 INSTALLING AND CONFIGURING HMP SOFTWARE

4.4.1 INSTALLING THE DRIVER

- Insert the M5000 CC installation DVD in the M5000 CC Server PC drive: read the content of the DVD via Windows explorer and double-click the **Setup.exe** icon in the "Dialogic HMP" sub-directory (depending on the version of the licences).
- Indicate the IP address of the network card connected to the PBX network. (HMP Version 1.1)
- Select **Core Runtime Package, License Package** and **Demos**. (HMP Version 3.0)
- At the end of this setup, restart the operation with the file **Setup.exe** of the Service Update provided with the M5000 CC installation DVD.
- See the Technical Bulletin for how to use the latest Service Update.

Note: *HMP version 1.1 is not compatible with Dual Core PCs. In this case, use HMP version 3.0 and check that M5000 CC is in version 1.1B08 patch 2 at least and running with Windows 2003.*

Note: *HMP software key codes depend on the MAC address. Therefore, it is advisable to use a mobile network card, because in case of PC problem, it will the possible to move this card.*

Note: *While installing the HMP driver, enter the local IP address of the card but do not enter "127.0.0.1", or else the media server sill not start.*

Note: *All the examples and screenshots below are given for information purposes for HMP version1.1, except the information in brackets.*

4.4.2 CONFIGURING THE LICENSE

- Open HMP License Manager.

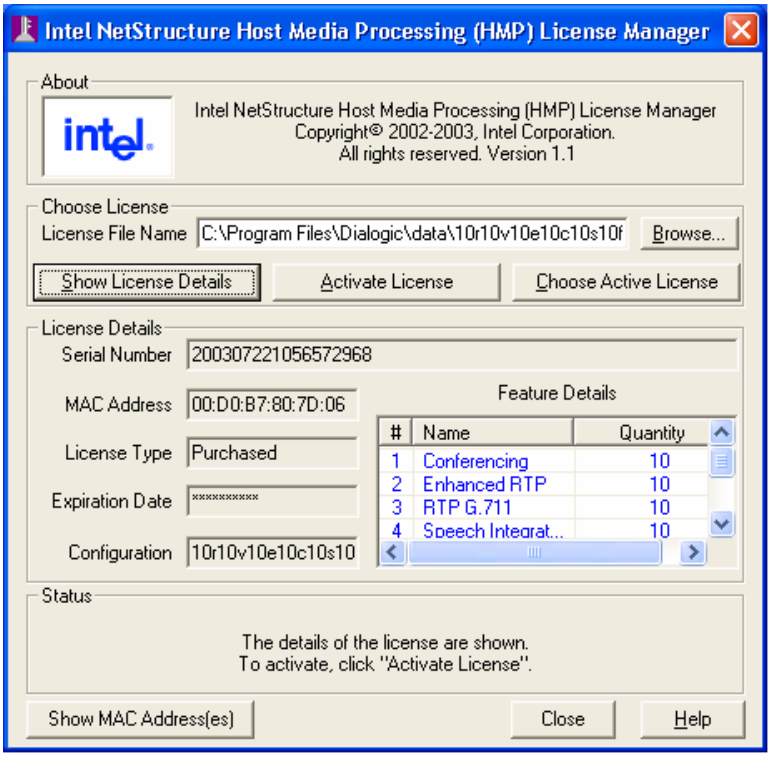


Figure 4.2 HMP LICENSE CONFIGURATION WINDOW

- In the **"Host Media Processing (HMP) License Manager"** window, select the file for the licence associated with the network card MAC address.
- Click ***[Activate License]*** in the **"Host Media Processing (HMP) License Manager"** window to activate the licence.
- Close the **"Host Media Processing (HMP) License Manager"** window from the ***[File > Exit]*** menu.

4.4.3 CONFIGURING THE DRIVER

- Open Configuration Manager - DCM.

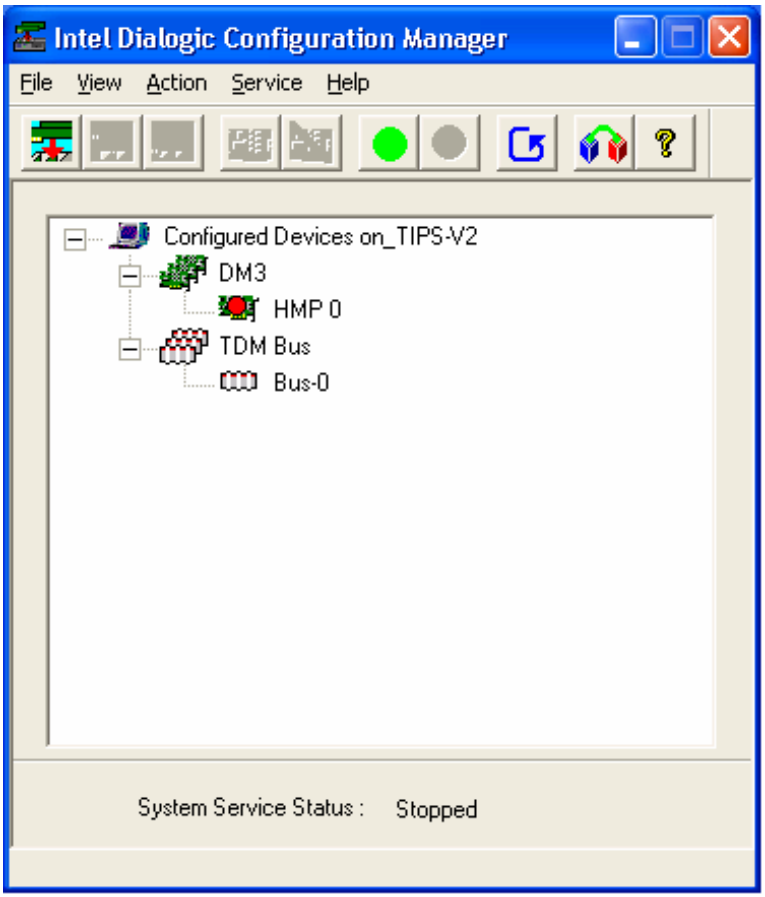


Figure 4.3 HMP DRIVER CONFIGURATION WINDOW

- In the **"Dialogic Configuration Manager"** window, click the name of the device concerned (e.g.: **DM3... HMP 0 ....**)
- In the ***[Action]*** menu, select the command ***[Restore Device Defaults]***.
- In the toolbar of the **"Dialogic Configuration Manager"** window, click the round green button "Start Service" in order to start the service.
- The **"Assign Firmware File"** window appears. Select the .pcd file that matches your licence file then click **OK**. (Version 3.0)

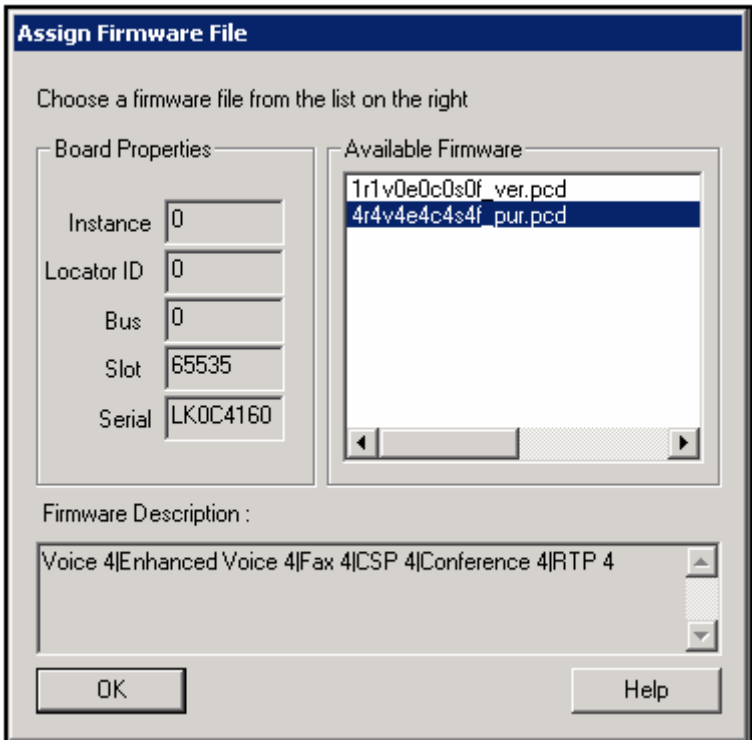


Figure 4.4 LICENCE SELECTION WINDOW

- From the ***[Service > Startup Mode > Automatic]*** menu, configure automatic service restart (on PC reboot) (the "Automatic" box becomes checked).
- From the **[File > Exit]** menu, close the ***"Dialogic Configuration Manager"*** window.
- Reboot the PC and use **"Dialogic Configuration Manager"** to check that the device concerned has actually started (green indicator light).

4.4.4 MODIFYING THE IP ADDRESS USED BY HMP

Note: *This section concerns HMP version 3.0 only.*

- To display and modify the IP address used by HMP, start the program **Configuration Manager - DCM**.
- If the service has been started, stop it using the button ***[Stop all enabled devices]***.
- In the main window, select the device corresponding to HMP then select the menu ***[Device/Configure Device]***. A window containing the different properties of the device opens. Select the ***[Default IP Address]*** table.

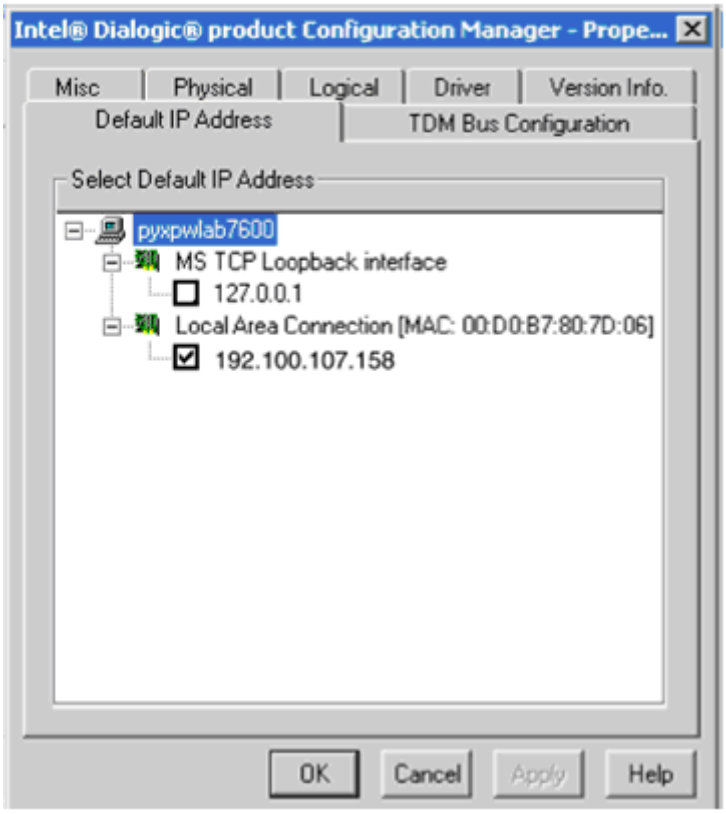


Figure 4.5 IP ADDRESS SELECTION WINDOW

- Select (checkbox) the IP address you wish to use (under the network card you wish to use).
- Click OK to confirm your selection.
- Restart the dialogic service.

4.5 INSTALLING THE TOOL BABEL BRIGHT SPEECH FOR THE TEXT-TO-SPEECH FUNCTION

4.5.1 INSTALLING THE SOFTWARE

- Insert the M5000 CC installation DVD in the M5000 CC Server PC drive: read the content of the DVD using Windows explorer and double-click the **babwizard.exe** icon located in the "Babel Bright Speech 1.4" sub-directory.

4.5.2 CONFIGURING THE LICENSE

- Open BabTTS License Manager.
- In the **"BabTTS License Manager"** window, select and activate the licence file associated with each voice chosen.

4.5.3 TESTING AND SETTING THE SPEED

- Select **[Start / Control panel]** and double-click the **"Voice"**  icon. The **"Speech recognition property"** window opens.
- Select the voices to be tested one by one.
- If necessary, set the speed of each of them.

4.6 INSTALLING THE M5000 CC SOFTWARE ON THE PC M5000 CC SERVER

Nota :
- *If an existing installation is being updated, refer to section 4.22.*
- *If the installation is carried out in "maintenance mode", refer to section 4.23.*
- *If the optional tool "PCAnywhere" is used for the installation, refer to section 4.25.*

4.6.1 INSTALLING THE SOFTWARE

4.6.1.1 PC CUSTOM INSTALLATION PROCEDURE M5000 CC SERVER

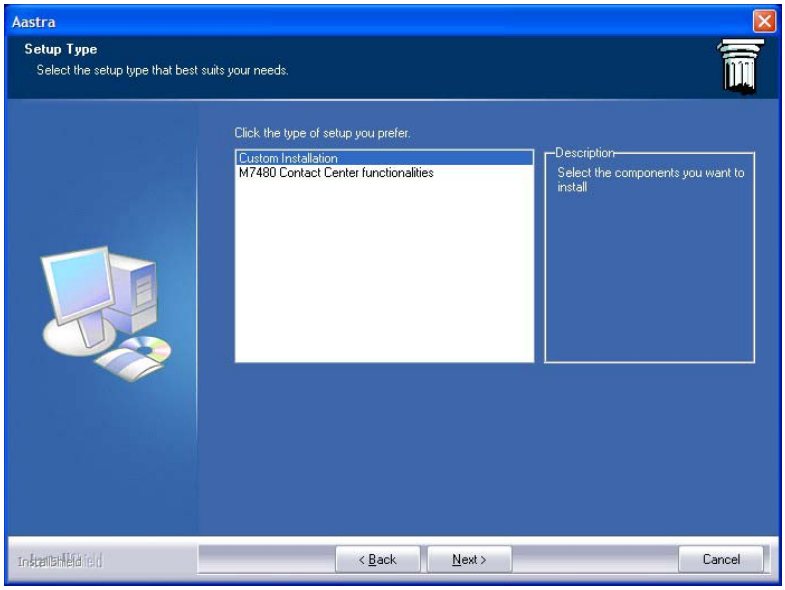
- First open a windows session on the Server PC with M5000 CC administrator rights (see administrator declaration in section 4.2.2.2).
- Insert the M5000 CC installation DVD in the drive: The **"M5000 CC Installation Wizard"** window opens automatically.
  If the window does not open, read the contents of the DVD from Windows explorer and double-click the **default.htm** icon in the Autorun sub-directory.
- Click the link ***[Mitel 5000 Contact Center]***.
- Click again the link ***[Mitel 5000 Contact Center]***. The Setup home page opens specifying the number of the M5000 CC software release to be installed.
- In the **"Mitel Installation Application"** window, click the ***[Next>]*** *button.*
- In the **"License Agreement"** window, click ***[Yes]*** to accept the terms of the license agreement.
- Enter a user name in the ***{User Name}*** field and the company name in the ***{Company Name}*** field in the **"Customer Information"** window, then click ***[Next>]***.

  This information will be stored in the registry.
- In the **"Choose Destination Location"** window, keep the default directory **"C:\Program Files\M5000 CC"** to which all applications will be installed or click ***[Browse...]*** to select another target location. Click ***[Next>]***.

Selecting the software for the M5000 CC Server:

- The **"Setup Type"** window is displayed.

  Choose one of the two available setup types in the **"Click the type of Setup you prefer"** frame:



- the ***{Mitel 5000 Contact Center Functionalities}*** {Full Installation} option is not recommended for the Server PC; the ***{Custom Installation}*** however allows you to select only those components you need to install. To this end:

  u Select the ***{Custom Installation}*** line, then click ***[Next>]*** The **"Select** Features**"** (Select components) window opens:

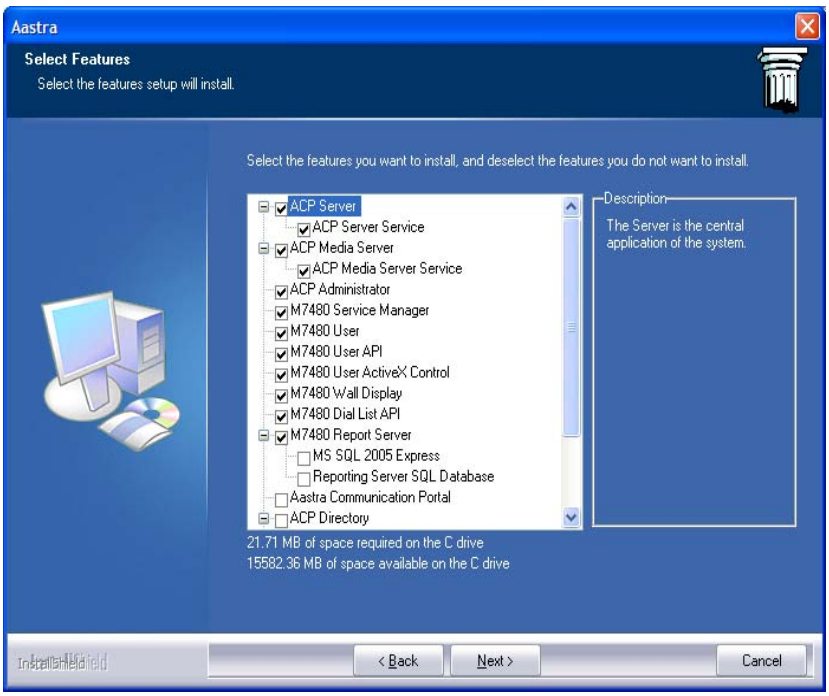
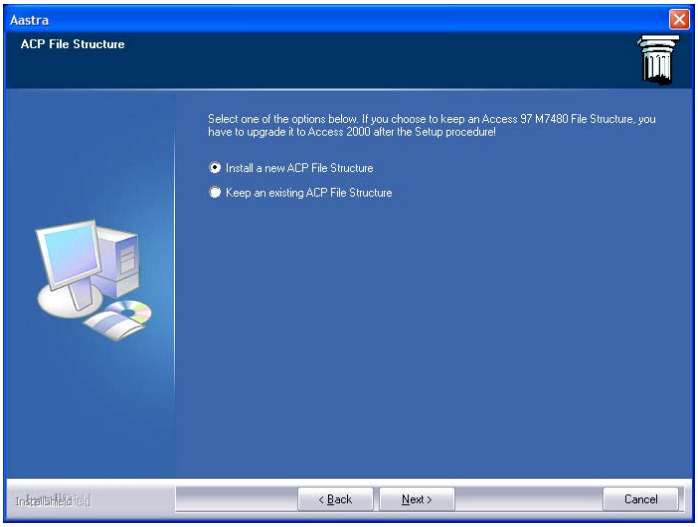


Figure 4.6 SELECTION WINDOW FOR CUSTOM INSTALLATION OF APPLICATIONS

- In the **"Select Components"** window, check each component in the list that needs be installed (each component on the list can be selected individually), then click ***[Next>]***:
  - M5000 CC Server and associated M5000 CC Server Service,
  - M5000 CC Media Server and associated M5000 CC Media Server Service,
  - The M5000 CC Wall Display
  - The M5000 CC Service Manager
  - The M5000 CC User
  - The M5000 CC Report Server (if installed on the same PC as the server).

M5000 CC File Structure :

- In the **"Select Program Folder"** window, select or create a program folder in which the application icons will be installed. By default, the name proposed is "M5000 CC by Mitel".
  - The **"M5000 CC File Structure"** screen appears; there are two possibilities:
    - Installing a new M5000 CC File Structure:



Tick ***[Install a new M5000 CC File Structure]***, then click ***[Next>]***.

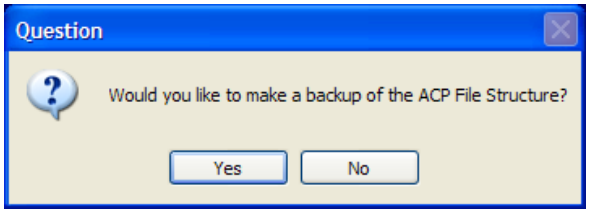
Specify the full network path to the M5000 CC File Structure (previously shared "DATAM5000CC" directory, see Section 4.2.3).

- Keeping the existing M5000 CC File Structure:

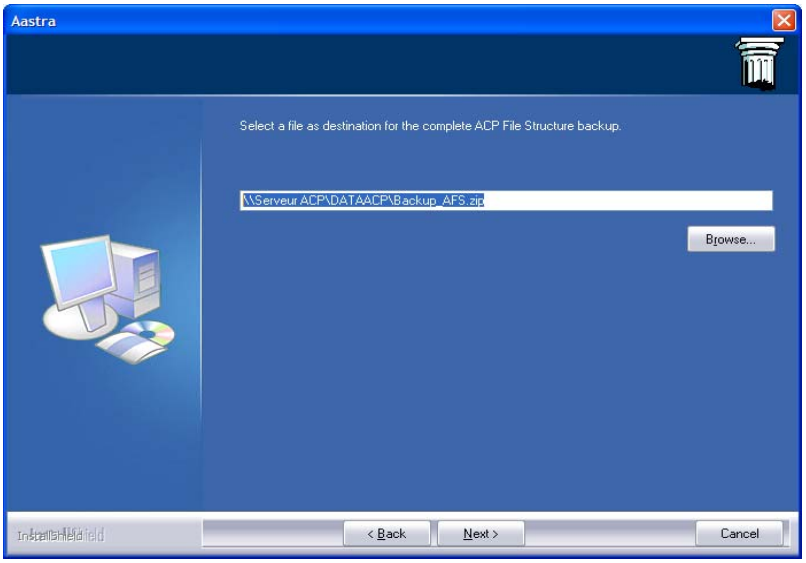
  Tick ***[Keep an existing M5000 CC File Structure]*** , then click ***[Next>]***. Once the installation is complete, upgrade Access 2000 software package compatibility. Then select the network path of the existing M5000 CC File Structure.

Nota :

- *If you install a new M5000 CC File Structure and specify a path to an already existing M5000 CC File Structure, a dialog box will be displayed asking you to overwrite the existing M5000 CC File Structure.*
- If you keep the M5000 CC File Structure, the installation asks whether you wish to make a backup.



-If you wish to make a backup, the installation asks for the file to which it must back up the M5000 CC File Structure.



-The backup is made into a file in ZIP format. If the file exists already, the installation asks for a confirmation of its replacement.

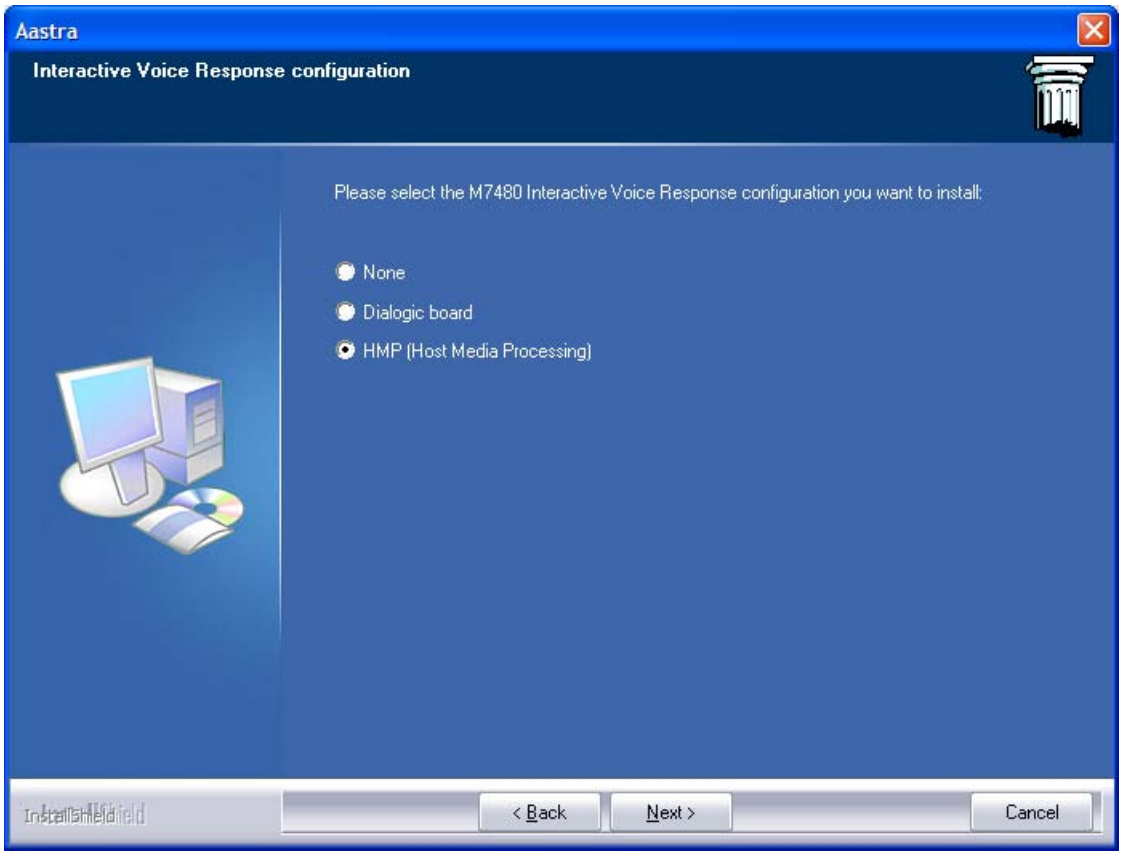
- At this stage, there are three possibilities depending on which components were selected previously:
  - -1st case: the M5000 CC Server, M5000 CC Media Server and M5000 CC Wall Display components were not selected: move to the phase **"Broadcasting option"** by clicking the ***[Next>]*** button (card configuration) below.
  - 2nd case: the M5000 CC Server and M5000 CC Media Server components are not selected and M5000 CC Wall Display is selected:
    - u the screen **"Choose destination location"** appears; indicate the shared M5000 CC File Structure by clicking ***[Browse...]***.

      Note: *The path must be a network path (shared folder defined by the network administrator in*

section 4.1), even if the M5000 CC File Structure is already installed on a local PC. If there is no M5000 CC File Structure at the insertion point, a message is displayed; correct the path accordingly.

- u Move to the phase **"Broadcasting option"** by clicking ***[Next>]*** . In the **"Broadcasting option?" window** (Broadcasting Option): tick the [No] (by default [Yes]) option, then click ***[Next>]*** to enable real-time broadcasts on the network (see Note below).

- 3rd case: the M5000 CC Media Server component is selected:
  - u The **"Interactive Voice Response configuration"** screen appears, specifying the configuration:



- u Move to the phase **"Broadcasting option"** by clicking ***[Next>]*** . In the **"Broadcasting option?" window** (Broadcasting Option): tick the ***[Yes]*** (by default) or ***[No]*** option, then click ***[Next>]*** to allow real-time broadcasts on the network (see Note below).

Note: *On the M5000 CC Server PC, it is preferable to tick [No] in the "**Broadcasting option?**" window.*

Note: *On the "**Interactive Voice Response configuration**" screen, the option "**None**" corresponds to the solution without IVR, while the option "**Dialogic board**" corresponds to the solution with IVR, provided using the Dialogic® card(s).*

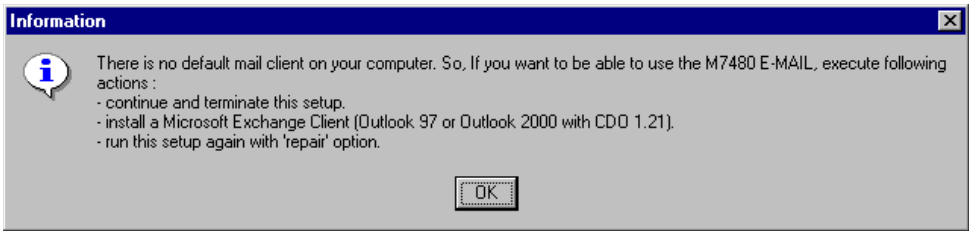
Security parameters

- The **"Security parameters"** window only opens if you have chosen to install the M5000 CC Report Server, M5000 CC Server, M5000 CC Media Server and or the portal. Fill in the following fields, then click ***[Next>]*** to continue the installation:
  - ***{User}*** field: user's account that will be used with the service(s) installed, in the form: **domain name\user name**. This account must be assigned administrator rights. Use the M5000 CC Wall Display dedicated account.
  - ***{Password}***field: password associated with the above user's account.
  - ***{Confirm}***field: for confirming the password.
- The settings selected during the various installation steps are summarized in the **"Start Copying Files"** information window.

  Click ***[Next>]*** to continue installation.

Note: *Click **[<Back]** to return to the previous step.*

- If the following error message appears:



  - Outlook 2000 is not installed. Carry out the corrective action requested in this message only if the Email component is to be used.

- If the following error message appears:

  - Outlook 2000 is installed without CDO1.21; perform the corrective actions requested in this message.
- If no error message is displayed, a progress bar shows the sequence of files being installed on the PC, then a window pops up indicating that the installation is complete.
- Tick ***[Yes, ...]*** in the window proposing to restart the PC, remove the DVD then click ***[Finish]*** to restart the PC.

Additional information:

- The setup generates a trace file (logfile.txt) in the installation directory.
- Setup accepts /REPAIR as an argument command line. (Setup /REPAIR). This argument allows you to automatically repair the installed components without the usual setup questions being asked. The /REPAIR option can also be enhanced with /User:<Account> /Password:<None>. This is used to specify the user's account and password for automatic DCOM configuration of the services.

4.6.2 CHECKING THE INSTALLATION

- Starting the M5000 CC Server application.
- Check that there are no error messages and that the following status messages are displayed in the **"To-Server connection messages"** window (the M5000 CC Server application opens this window automatically):
  - *"Server Successfully Started"*,
  - *"Butler Successfully Started in Standard Mode"*.

  Note: To change the language, refer to Section4.10.2.

4.6.3 PRECAUTIONS FOR USING ANTIVIRUS

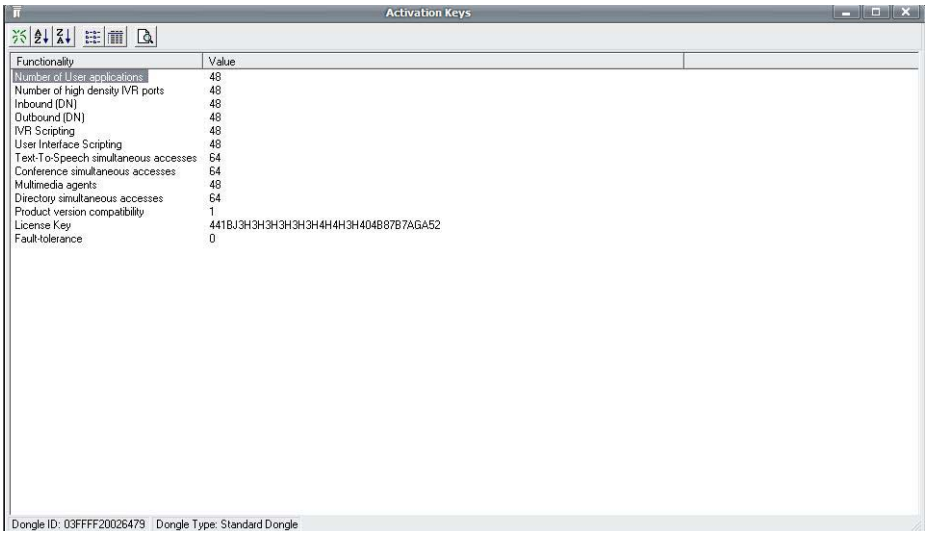
In Order that IIS Web Server don't restart the different M5000 CC Portal, we stongly recommend to exclude the following paths of your Antivirus Application.

- %Path M5000 CC/Portal (with all sub-directories)
- %systemroot%\system32\inetsrv\
- %systemroot%\SysWOW64\inetsrv\
- \Path\Program Files (x86)\Microsoft SQL Server\MSSQL10_50.ACP

No message as " Application is shutting down. Reason: Configuration changed» don't appear in WINDOWS application log.

4.6.4 CONFIGURING THE LICENCE KEY CODES

- Enter the key codes associated with the licences purchased:
  - To access the **"Key code"**, window select ***[Key code]*** in the application M5000 CC Wall Display , ***[View]*** menu:



  - To activate all the functions, click Add a new key code  in the toolbar, or double-click a line in the {Feature} column concerned: the key code input dialogue box opens:
    - Enter the key in the ***{Enter new activation key:} field***.
    - Click ***[Validate]***.

    If the new key entered changes the value of at least one licence, a message is appears, prompting you to confirm the key code.

Definition of licences

Table1:

FUNCTION	DESCRIPTION
Agents connected simultaneously (*n AG)*	Number of M5000 CC User applications that can be simultaneously connected to the M5000 CC Server.
IVR channels *(IVR n VOIES)*	Number of analogue resources that can receive calls (checked on M5000 CC Media Server startup)
Incoming call agents *(ENTRANT n AG)*	Maximum number of inbound calls simultaneously managed by the M5000 CC agents.
Outgoing call agents *(SORTANT n AG)*	Maximum number of outbound calls simultaneously managed by M5000 CC agents.
Routing script agents *(SCRIP ROUT n AG)*	Maximum number of IVR scripts running (for incoming calls) at any given time.
CTI agents *(CTI)*	Maximum number of current User scripts (for incoming or outgoing calls) at any given time.
Simultaneous Text-To-Speech accesses *(n TEXT TO SPEECH)*	Maximum number of simultaneous accesses to the Text-To-Speech function.

Table1:

Simultaneous conference accesses *(n CONFERENCE)*	Maximum number of simultaneous accesses to the conference function.
Multimedia agents (*n MULTIMEDIA)*	Maximum number of multimedia sessions managed simultaneously by the M5000 CC.
Simultaneous directory accesses *(DIRECTORY No.)*	Maximum number of simultaneous accesses to the directory function.
Compatible product version	Compatibility with M5000 CC version.
Failure tolerance	Unlocks the failure tolerance function
Transfer by pool agents	Maximum number of simultaneous agent that can pick up a call waiting in the pool

4.7 INSTALLING THE M5000 CC REPORT SERVER

Note: Log on to the PC under a local Administrator account.

4.7.1 INSTALLING THE M5000 CC REPORT SERVER APPLICATION ON A DEDICATED PC

Note: In this configuration management of the PC pool with a domain is not possible.

If the M5000 CC Report Server application is installed on another PC dedicated to the M5000 CC Report Server, and not on the M5000 CC Server PC, proceed as follows:

- Start a personalised installation by choosing ***{Custom Installation}*** like while installing M5000 CC applications on the server PC (see Section 4.6).
- Tick only the ***[M5000 CC Report Server]*** option in the **"Select features"** window (see Figure 4.6), then click ***[Next>]***.
- In the **"Select Program Folder"** window click ***[Next>]***.
- In the **"M5000 CC File Structure"** window click ***[Next>]***, then specify the full network path to the M5000 CC File Structure (previously shared "DATAM5000CC" directory, see Section 4.2.3).
- In the **"Broadcasting option?"** window, tick [Yes], then click ***[Next>]***.
- In the **"Security parameters"** window, click ***[Next>]***.
- Tick ***[Yes, ...]*** in the window proposing to restart the PC, remove the DVD then click ***[Finish]*** to restart the PC.

4.7.2 GENERATING PDF REPORT

With Access 2010, the report server generates report by using PDF format instead of Snapshot format.

It is also possible to generate report in PDF format with Access 2007. You just have to install the "Microsoft Save as PDF or XPS" office Add in (downloadable on the Microsoft site). When this add-on is installed, the report server automatically generates report in PDF format instead of Snapshot format.

With access 2003, it is not possible to generate report in PDF format: the Snapshot format is used.

Finally, it is possible with Access 2010 or Access 2007 (when the "Microsoft Save as PDF or XPS" add in is installed) to force the report server to use Snapshot format. Simply, set the "HKEY_LOCAL_MACHINE\ SOFTWARE\ Dialog Systems\ Agora\ General Information\ Reporting Use PDF" to the 0 value.

Depending on the selected configuration, only the Snapshot format or the PDF format will be proposed for generating immediate or schedule report

4.7.3 DECLARING THE REPORT SERVER ON THE M5000 CC SERVER

To configure the M5000 CC Report Server:

- From the M5000 CC Wall Display application **[View]** menu, select the **[Report Server]** command: the **"Reporting Server"** window opens.
- Configure the following fields:
  - Data entry field ***{Report Server PC name:}***,
  - Data entry field ***{Report Server communication port with the web server:}*** (for example 5500)

  Note: *The port chosen must be free. If necessary, use the netstat -a command.*
  - Click ***[Validate]***.

4.7.4 STARTING THE M5000 CC REPORT SERVER

- Start the Access application.
  - *For Access 2003:* Select **[Security]** from the **[Macro]** command in the **[Tools]** menu and tick the box corresponding to the lowest security level.
  - For Access 2007: Click the Microsoft Office button (the button on the upper left corner), then click Access options. Click the Confidentiality management centre, Confidentiality management centre parameters, then macro parameters. Then click “Activate all macros (not recommended as the potentially dangerous code may be executed)”.
- Close the Access application.
- Stop and restart the M5000 CC Server application (which starts the M5000 CC Report Server).
- Check that there are no error messages on the M5000 CC Server. After some minutes the following message appears:
  - *The Long Term Reporting database start-up is now finished*.

4.7.5 USING EXTERNAL DATABASE WITH M5000 CC REPORT SERVER

Nota : [Reporting Server SQL Database] must have been installed during the setup (4.7.1). In fact, setup creates a SQL database, a system DSN and the configuration database for the external replication "RP_LongTermStatistics.mdb".

- To use SQL Database with M5000 CC Report Server, You have to :
  - Define an external replication to this SQL database
    - u Select **[Properties]** from the M5000 CC Wall Display application's **[File]** menu to open the **"Properties"** window :Click on "**Statistics**" tab's label
    - u Check detailed and consolidated options
    - u Define DSN (the one created by the setup, LongTermStatistics)
    - u Specify the user name and password associated to the DSN
    - u Choose the following replication configuration database "RP_LongTermStatistics"
    - u Click **[Validate]** once all the parameters have been configured.

    Note: *For more details, 9.3.3.2 : Configuration of the external replication*
  - Activate external replication as source with reports generation
    - u Select **[Properties]** from the M5000 CC Wall Display application's **[File]** menu to open the **"Properties"** window :Click on "**Reports**" tab's label
    - u Check the option "use the external replication".
    - u Click **[Validate]**

Note: Limitations:

Note: *It will not possible to have this replication simultaneously with external replication to an additional server.*

Note: *All of this applies to a single server only! The Reporting will not be capable to filter statistics data based on server ID.*

4.7.6 AUTOMATIC INSTALLATION OF CUSTOMISED REPORTS

- Stop M5000 CC execution.
- On the PC on which the report server is located (in the installation directory):
  - Back up "LongTermReporting.mdb" and "OldLongTermReporting.mdb" (if available).
  - Manually open "LongTermReporting.mdb" and, in the "Configuration" table, activate the upgrade by selecting "UpgradeRequired" (If the table does not appear, activate the option "Show hidden reports").
  - Close "LongTermReporting.mdb".
- Copy the file ("NewLongTermReporting.mdb") containing the new report to the PC on which the report server is located (in the installation directory).
- Delete "OldLongTermReporting.mdb" (if available).
- Rename "NewLongTermReporting.mdb" to "OldLongTermReporting.mdb" if the version is earlier than V42B05 Patch 01. Otherwise rename it to "CustomLongTermReporting.mdb".
- Run DebugViewer, for the traces (optional).
- Open "LongTermReporting.mdb" again (the new report is imported automatically).
- If you are using DebugViewer, check that the import operation has been completed successfully ("LongTermReporting upgrade process - Successfully Terminated" must appear in the traces).
- Close "LongTermReporting.mdb" and delete "OldLongTermReporting.mdb" or "CustomLongTermReporting.mdb" (this file contained the new report; it is no longer necessary).
- Restart M5000 CC and check that the new report is actually available using the web reporting interface.

4.8 INSTALLING COMMUNICATION PORTAL ON THE WEB SERVER PC

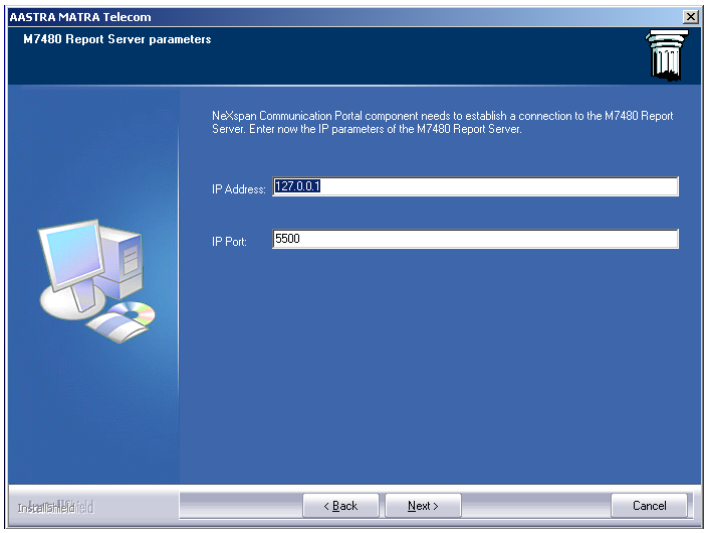
Caution: *For an installation in Windows server 2003, open the Windows components Wizard ("Control Panel \ Add/Remove programs \ Add or remove Windows components") and check that the Windows component ASP.NET (application server component) is available.*
This component is required for the web server (and not for the report server) operation.

4.8.1 INSTALLING THE SOFTWARE

Note: *Log on with the "M5000 CC administrator account" with administrator rights on the web server PC.*

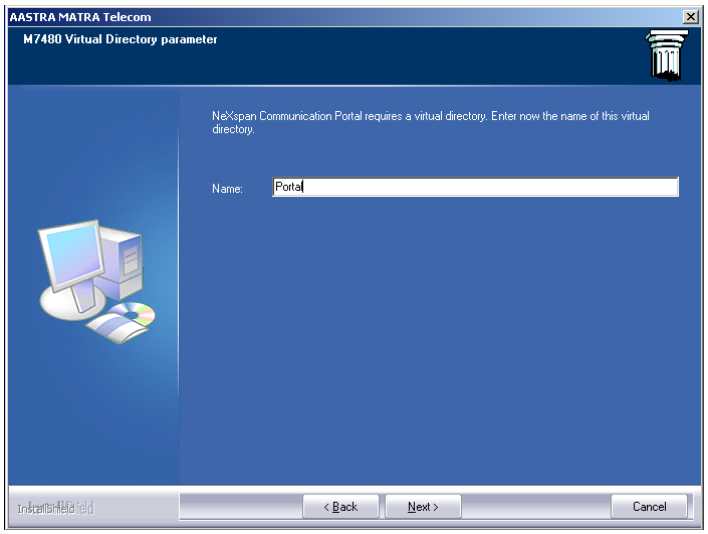
To install M5000 CC Portal on the web server PC:

- First check that the component Windows Internet Information Services is installed (see also Section 6.7.1).
- Start a personalised installation by choosing ***{Custom Installation}*** like while installing M5000 CC applications on the server PC (see Section 4.6).
- Tick only the ***[Communication Portal]*** option in the **"Select features"** window (see Figure 4.6), then click ***[Next>]***.
- In the **"Select Program Folder"** window click ***[Next>]***.
- In the **"M5000 CC File Structure"** window click ***[Next>]***, then specify the full network path to the M5000 CC File Structure (previously shared "DATAM5000CC" directory, see Section 4.2.3).
- In the **"Broadcasting option?"** window, tick [Yes], then click ***[Next>]***.
- In the **"M5000 CC Report Server parameters"** window:



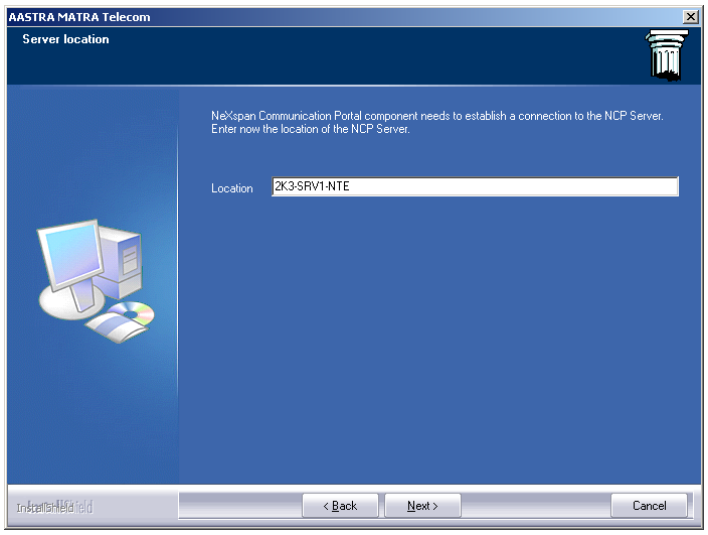
Enter the IP address of the PC on which the M5000 CC Report Server is installed then click ***[Next>]***. The port is the one chosen while declaring the report server on the M5000 CC server (see Section 4.7.3).

- In the **"M5000 CC Virtual Directory parameter"** window:



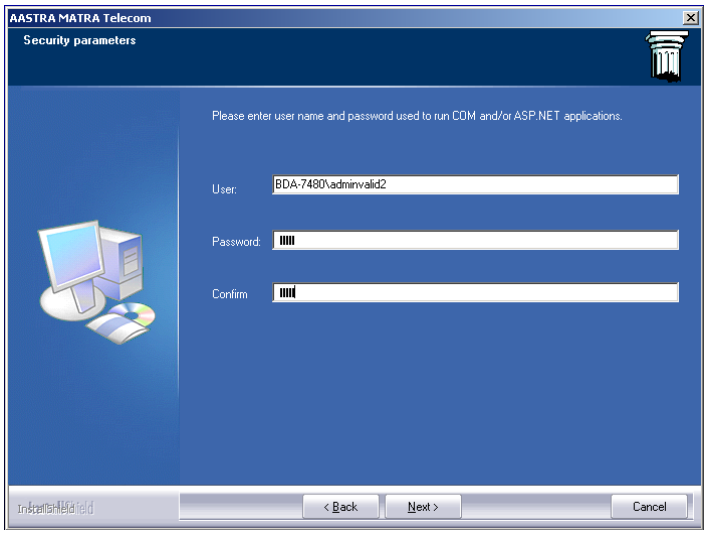
Enter the name (example: Portal) of the virtual directory associated with the web portal then click ***[Next>]***.

- In the **"Server location"** window:



Enter the name of the PC on which the M5000 CC Server is installed (see Section 4.7.3) then click ***[Next>]***.

- In the **"Machine configuration"** window, keep the default values of then click ***[Next>]***.
- In the **"Security parameters"** window:



Fill in the following fields, then click ***[Next>]*** to continue the installation:

- ***{User}*** field: user's account that will be used with the service(s) installed, in the form: **domain name\user name**. This account must be assigned administrator rights. Use the M5000 CC Wall Display dedicated account.
- ***{Password}***field: password associated with the above user's account.
- ***{Confirm}***field: for confirming the password.

- The settings selected during the various installation steps are summarized in the **"Start Copying Files"** information window.

  Click ***[Next>]*** to continue installation.
- Tick ***[Yes, ...]*** in the window proposing to restart the PC, remove the DVD then click ***[Finish]*** to restart the PC.
- On PC reboot, in the "**Question**" window about "DCOM Security parameters", click ***[Yes]*** .

4.8.2 CHECKING THE INSTALLATION

- Open the **"Internet services management"** window from the Windows **[Start]** menu.
- Check the availability of the "Portal" directory (as it was called previously in the **"M5000 CC Virtual Directory parameter"**window).

- Start the web portal with Internet Explorer.
-

4.9 PROCEDURE TO SET AUTHENTICATION IN NOVELL ENVIRONNEMENT

Authentication Windows can be replaced by an another strategy to authenticate agents. We can delegate it to Novell Technology.

Below, differents steps to follow in order to do well Novell Authentication.

- Restart Server
- Modify web.config file

In follow path, "C:\Program Files (x86)\M5000 CC\Portal", edit the file web.config as follows:

In Section « <configuration> »,

Add or complete the section « <appSettings> like below i :

Also take into account these remarks :

- In secured LDAP (LDAP SSL) the « ldap_server » key must not be : **389**, but: **636** and the value of « ldap_secured » key must be set to « **true** »
- The « ldap_system_account » and « ldap_system_password » keys are optionnals. If NOVELL Ldap base can be requested in anomumous account, it is not mandatory to add thes keys.
  In follow example, we use TDETest20000 / LabRD6868? account to connect to the NOVELL base.

```
<configuration>
<appSettings>
  <add key="ldap_server" value="10.148.65.212:389" />
  <add key="ldap_secured" value="false" />
  <add key="ldap_system_account" value="cn=TDETest20000,ou=USERS,ou=FINANCES,o=ACP" />
  <add key="ldap_system_password" value="LabRD6868?" />
</appSettings>
```

In the section « <configuration> / <system.web> / <compilation>»,

Add or complete the « **<assemblies>** » section as follows

•|

The « **PublicKeyToken**" value corresponds to that found in the directory name located in the following Path
« C:\Windows\Microsoft.NET\assembly\GAC_MSIL\BridgeCollection\v4.0_11.3.10.1__**1b8431c68263ca66** »

- It is possible that the section « <compilation> » is defined by a single line (that is in other words, the line ends with "/>" as below.
- **<compilation defaultLanguage="c#" debug="true" targetFramework="4.0" />**
  It is then necessary to remove the "/" this line and add "</ compilation>" following "</ assemblies>" section as described below.

```
<compilation defaultLanguage="c#" debug="true" targetFramework="4.0" >
  <assemblies>
 <add assembly="BridgeCollection, Version=11.3.10.1, Culture=neutral, PublicKeyToken=1b8431c68263ca66" />
  </assemblies>
</compilation>
```

In Section «<configuration> / <system.webServer»,

Add or complete the "<modules>" as specified below

```
<system.webServer>
  <httpProtocol>
    <customHeaders>
      <clear />
 <add name="X-UA-Compatible" value="IE=Edge" />
    </customHeaders>
  </httpProtocol>
  <modules>
     <add name="MyLdapAuthenticationModule" type="LdapAuthentication.LdapAuthenticationModule" />
  </modules>

</system.webServer>
```

- Disable Windows Authentication
- Start IIS Manager and disable Windows Authentication for agent portal following the procedure below::
- start by the composant named "Portal" (Sites portal), dans la rubrique « IIS » DoubleClick on "Authentication » And then «Disable» the «Windows Authentication» (click on right button to select «Disable»)

Repeat same operations for the following components.

« Portal\ACP_ V33Axx » ou « Portal\M5000_CC_ V33Axx »

In path « Portal\ACP_ V33Axx » ou « Portal\M5000_CC_ V33Axx » for

WebAgent (disable ASP.NET Impersonation)

WebAgentSupervision

WebApplication

WebConferenceBridge

WebCustomerSettings

WebReports

WebSupervision

WebUser

« Portal\WebService »

Restart IIS Server to register the new configuration.

4.10 INSTALLING THE M5000 CC SOFTWARE ON THE CLIENT PCS

Note: Log on to the PC under a local Administrator account.

4.10.1 CLIENT PC CUSTOM INSTALLATION

The M5000 CC software is installed on client PCs in the same way as on the Server PC in "Custom installation" mode (see Section 4.6.1.1) by selecting only those applications required by the Client PC. The installation windows applicable to the Server PC do not therefore appear (e.g.: DCOM parameters).

Note: Check that there is a default printer.

Depending on the working operation of each Client PC, tick the application(s) concerned:

- The M5000 CC Service Manager
- The M5000 CC User
- M5000 CC Wall Display (see note).

Note: *The optional installation of the M5000 CC Administrator application on a client PC is useful for testing the installation (see section 4.10.2). The application can be uninstalled after the test. The*

application is in any case protected by a password and only one M5000 CC Administrator application can be open in the M5000 CC system.

Additional information:

- The "SmartPop.dll" component is now installed with the product as soon as an M5000 CC User application is installed.
- Modify the security level for M5000 CC group on C:\Program Files\M5000 CC\: select "Total control".

4.10.2 TESTING THE CLIENT PC CONNECTION WITH THE M5000 CC SERVER

Connect as user.

Open the M5000 CC Wall Display application:

1 Select the M5000 CC Administrator application language.

- Select **[Change language]** from the **[File]** menu.
- Select the language in the **Language selection** window.
- Click ***[Confirm]***.

2 Starting the M5000 CC Administrator application

There are two ways of starting the M5000 CC Wall Display application:

- Double click the **M5000 CC Administrator**  icon on the desktop.

Or

- Start the M5000 CC Wall Display application from the Windows **[Start]** menu.

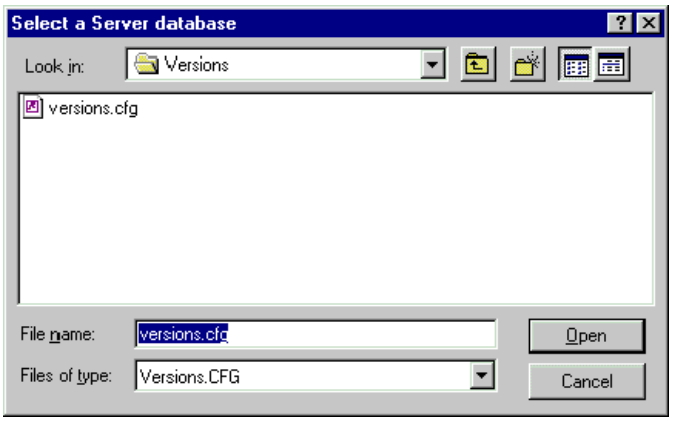
3 Connect the M5000 CC Administrator application to the M5000 CC Server.

Connection prerequisite:

- The **M5000 CC Server application must be activated on the Server PC**.

Two connection methods are available:

- Select **[Connect…]** from the **[File]** menu.
- Select the file **"versions.cfg"** corresponding to the active M5000 CC Server, (\\Server\DATAM5000CC\M5000CC\Versionsversions.cfg) then click***[Open]***.



Or

- From the **[File]** menu, select one of the "versions.cfg" files from the list of recently accessed files.

4 Authorized administrator identification

Logging on as authorized administrator:

- In the "**Administrator login** window, enter your User ID (initial default User ID = "Administrator") or alias number (initial default alias = **"0"**) in the "**User**" dialog box.

- Enter the password (default password at first login = **"0"**) in the ***{Password}*** dialog box.

Caution: *Only one administrator at a time can be connected to the file structure. Any attempt to connect to an Administrator application with another administrator already connected will cause one of the following error messages to be displayed.*

- Error message with an administrator already connected with a different "User ID": **"Another administrator is already connected"**:

  u you must wait for this administrator to disconnect before you can connect.

• Error message with an administrator already connected with the same "User ID": **"You are already connected to the Administrator application".**

  u click ***[OK]***,

  u then at the next question: **"Would you like to remove the currently connected Administrator application?**:

    • click ***[Cancel]*** in order to keep the current administrator connected, or

    • Click ***[OK]*** to disconnect the current administrator, before you can restart the procedure for your own connection

5 Check the M5000 CC Administrator connection with the M5000 CC Server.

The connection of the M5000 CC Administrator application with the M5000 CC Server is checked as follows:

- absence of error messages when the M5000 CC Administrator application opens (error messages other than those relating to administrator already connected messages mentioned above).

- in the second field from the left in the status bar at the bottom of the M5000 CC Administrator application window: **"(NotConnected)"** not displayed and "name" of connected M5000 CC Server displayed (e.g.: M5000 CC).

6 Close the M5000 CC Administrator application.

- Use the **[File > Exit]** menu to close the application.

4.10.3 CONFIGURING THE SUBNETS FOR REAL-TIME STATUS BROADCAST

Generally, client terminals are located on a network or subnet other than the one on which the M5000 CC Server is located.

In this case, the broadcast passage (address: 255.255.255.250) is blocked by the subnet connection routers.

Two solutions are possible depending on the number of client PCs:

1 A single standalone client PC.

- If only one client PC is installed, just tick ***[No]***, in the "**Broadcasting option**" window while installing the client PC.

  In this case, the M5000 CC Server sends the information through UNICAST (which crosses the routers).

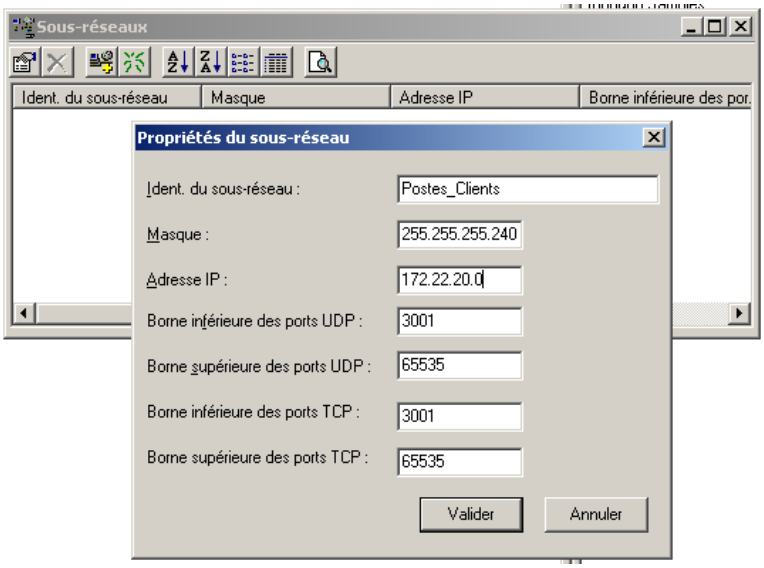
2 Several client PCs

- If several client PCs are installed, just tick ***[Yes]***, in the "**Broadcasting option**" window while installing the client PC.

- Then define the subnet via the M5000 CC Wall Display application:

  u Select the **[Subnet]** command from the **[View]** menu of the M5000 CC Wall Display application: the **"Subnet"** window opens.

  u To add a subnet, click the  icon: the **"Subnet properties "**window opens:



u Enter the mask and subnet IP address.

Note: *The type link is necessary for IP IVR mode. The CSTA link is necessary for any other case.*

In this case, the M5000 CC Server sends the information to the subnet broadcast address (which crosses the routers).

4.11 INTERNET EXPLORER SECURITY PARAMETERS

4.11.1 PRESET SECURITY LEVELS

M5000 CC can run with the following security levels: «Moderately high" (IE7 only, by default for the Internet zone) "Average" (by default for the Internet zone in IE6), "Moderately low" (by default for the local internet zone) and "Low" (by default for "Approved sites").

However, for the levels "Moderately high" and "Average" (Internet zone), it is necessary to authorise:

- Popup windows from the M5000 CC site, and
- «Request for confirmation for file downloads" the first time a report is opened.

The "High" level (default level for "Sensitive sites") cannot be used to run M5000 CC.

4.11.2 POPUP WINDOWS

M5000 CC and the different web applications cannot work if the browser (any external program) blocks the *popup windows*.

During first installation (or before that), if the portal is running in an Internet zone, it is necessary to allow the browser to display popup windows for this site. This operation can be performed either via the Internet Explorer information bar, or via the "Block popups" section located in the "Confidentiality" tab of "Internet options".

If the portal is running in the "Local intranet" area or on "Approved sites", Internet Explorer does not block the popup windows.

4.11.3 RECOMMENDED CONFIGURATION

For optimum use of M5000 CC and the web applications, it is advisable to configure the web server that publishes the portal in the **Local intranet area** of the browser, while maintaining the default security level ("Averagely low").

In fact, in this configuration

- User authentication is automatic (Single sign-on: no authentication window upon portal start).
- The different popup windows are authorised.

4.11.4 SECURITY PARAMETER DETAILS

This section contains the security parameters of Internet Explorer 6 and 7, with the maximum level supported by M5000 CC.

When the highest security level can be selected for an option (example "Disable" for the option "Download unsigned ActiveX controls", the lowest security levels for this option are also supported by M5000 CC ("Enable"

for the example cited).

Only the parameters whose value differs from that of the “High” security level are given below.

4.11.4.1 USER AUTHENTICATION

4.11.4.1.1 CONNECTION

All the available options are used to run the portal, except “Open anonymous session”.

Nevertheless, it is important to select “Automatic connection only in intranet zone” and to configure the web server in the local “intranet zone”.

4.11.4.2 ACTIVEX CONTROLS AND PLUGINS

4.11.4.2.1 BEHAVIOUR OF BINARY FILES AND SCRIPTS

This option must be enabled.

4.11.4.2.2 ACTIVEX CONTROLS RECOGNISED FOR SCRIPT WRITING

This option must be enabled.

4.11.4.2.3 EXECUTE ACTIVEX CONTROLS AND PLUGINS

This option must be enabled.

4.11.4.3 "OTHERS" FIELD:

4.11.4.3.1 EXECUTE RISKY APPLICATIONS AND FILES (IE 7 ONLY)

The “Ask” option must be selected to execute the Snapshot Viewer installation program (used to view reports), and to run the executable ConnectionIEManager (from the M5000 CC options window).

4.11.4.3.2 AUTHORISATIONS FOR THE SOFTWARE STRINGS

The “High security” option may be enabled.

4.11.4.3.3 SUB-FRAME NAVIGATION ON DIFFERENT DOMAINS

This option may be disabled, unless some *URLs defined by the users* and which correspond to some websites of other domains (internet) different from that of the portal are available, and they must be displayed in one of the portal frames (and not in a separate window).

4.11.4.3.4 SUBMIT UNCODED FORM DATA

This option must be enabled.

4.11.4.3.5 USE POPUP BLOCKER

This option may be enabled, but popups must be authorised for the M5000 CC site.

4.11.4.4 SCRIPT

4.11.4.4.1 ACTIVE SCRIPTING

This option must be enabled.

4.11.4.5 DOWNLOAD

4.11.4.5.1 ASK FOR CONFIRMATION FOR FILE DOWNLOADING

This option must be enabled while opening the first report. It may be disabled later if the option “Open snapshot (.snp) files automatically” had be selected previously.

4.11.4.5.2 FILE DOWNLOAD

This option must be enabled.

4.11.4.6 ADVANCED OPTIONS: NAVIGATION

The following options can be found in the “Advanced” tab of “Internet options”, in the “Navigation” section.

4.11.4.6.1 REUSE THE WINDOWS TO LAUNCH SHORTCUTS

We strongly advise against this option because it closes the portal once the user opens a shortcut, to display the page corresponding to this shortcut in the same window.

4.11.4.7 ADVANCED OPTIONS: SECURITY OF

The following options can be found in the “Advanced” tab of “Internet options”, in the “Security” section. Only the relevant options are mentioned below.

4.11.4.7.1 ENABLE INTEGRATED WINDOWS AUTHENTICATION

This option may be left unchecked. Automatic user authentication to M5000 CC is maintained.

4.11.4.7.2 CLEAR TEMPORARY INTERNET FILES FOLDER WHEN THE BROWSER IS CLOSED

We strongly advise against this option to limit the bandwidth (and duration) during M5000 CC start.

4.12 CONFIGURING THE TELEPHONY LINK

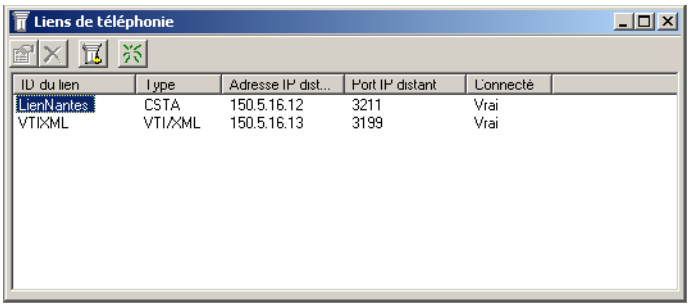
4.12.1 CONNECTING THE M5000 CC ADMINISTRATOR APPLICATION

On the Server PC, open the M5000 CC Wall Display application in the same way as on a Client PC with the initial default ID and password "0" and "0" (see Section 4.10.2).

4.12.2 DEFINING THE TELEPHONY LINK BETWEEN THE M5000 CC SERVER AND THE PBX.

Defining the telephony link:

- To open the telephony link management window, select **[Telephony links]** from the **[View]** menu of the M5000 CC Wall Display application: the **"Telephony links"** window opens.



- To add a telephony link, click the  icon; the **"Telephony link properties"** window opens:
  - Enter:
    - u link ID,
    - u the remote IP address of the PBX telephony server
    - u the remote IP port of the PBX telephony server (3199 for VTI/XML, 5060 for SIP).
    - u the link type: CSTA, VTI/XML or SIP.

    Note: *The VTI/XML link is necessary for IP IVR mode. The SIP link is necessary for SIP IVR mode. The CSTA link is necessary for any other case.*

    Note: *For management with double network cards, the option 1st network card connected to the PBX LAN is checked by default. Otherwise enter the IP address of the network card of the PBX LAN used.*

    Note: *The IP IVR (or conference) channels are supervised via a CSTA link and a VTI/XML link. Two VTI/XML links may be declared; the first one will be the main link and the second one the backup link (used if the main link is cut). VTI/XML links are organised in alphabetical order: the first one will be the main link, and the second the backup link. Example: if you define two links "VTI/XML_P" and "VTI/XML_S", the main link will be "VTI/XML_P".*

    Note: *It is also possible to define backup links for CSTA links. For this, choose CSTA as link type then tick the [Backup] checkbox. A backup CSTA link may be dedicated to a particular main CSTA link, or may not be dedicated at all (serving as backup for all the CSTA links).*

    Note: *To define a dedicated backup link, tick the [Dedicated] checkbox then choose the main link to which the backup link will be dedicated. (When the [Dedicated] backup checkbox is not ticked, the backup link will not be dedicated and may serve as backup for all the faulty main CSTA links).*
  - Click ***[Validate]***.
- Delete the "Default Link" which is just an example.

Remarque :For more information, see the section ***"8.10.5.4 PBX connection"*** in the chapter **"8.10 Failure tolerance"**.

4.13 CONFIGURING THE M5000 CC MEDIA SERVER

Note: If MSEXchange is not accessible, use this procedure: it will not be possible to send the recordings by mail.

4.13.1 DEFINE AN E-MAIL PROFILE TO BE RECORDED ON THE SERVER

Purpose:

- Define the local e-mail profile to connect to the Exchange Server mailbox (the mailbox created automatically at the start of the procedure when the administrator was declared if the option ***[Create an Exchange mailbox]*** was checked, see section 4.2.2.2).

For this, first configure the Outlook database.

Procedure:

- Click the **[Start]** button, select the **[Settings]** menu and then **[Control Panel]**.
- Double-click the **"Mail"**  icon. The following **"Microsoft Outlook Properties"** window opens:
- Click the ***[View profiles...]*** button. The following **"Mail"** window appears, showing the profiles previously created on the computer.
- On Windows 2000 server:
  - click ***[Add...]***, then configure the **"Microsoft Outlook Setup Wizard"** as follows:
  - check ***[Microsoft Exchange Server]*** and then click ***[Next>]***,
  - Enter the new profile in the ***{Profile name}*** field. Click ***[Next >]***.
  - Fill in the fields below as follows:
    - {Microsoft Exchange Server}: name of PC on which MS Exchange Server is installed,

Caution: *Do not tick the option [Use Cached Exchange Mode].*

    - {Mailbox}: leave the default.
    - Then click ***[Next >]***.
  - Check ***[No]*** to answer the question **"Do you travel with this PC ?"**, then click ***[Next>]***.
- On Windows 2003 server:
  - Click the [Add...] button.
  - Enter the new profile name in the field.
  - Click [Next>].
  - Click on Microsoft Exchange Server and then on [Next >],
  - Enter the name (Control), the M5000 CC Admin name then click [Next >].
- Click [Finish].

4.13.2 CONFIGURING THE M5000 CC MEDIA SERVER

4.13.2.1 ADDING A LOGICAL COMPUTER

- From the M5000 CC Wall Display application **[View]** menu, select the **[Logical machines for media server]** command: the window **"Logical PCs used by media servers"** opens.
- In the left part of the **"Logical machines used by media servers"** window, right-click **[Logical machines]**, then select **[Add Logical Machine]** : the **"Logical machine properties"** window opens.
- Enter the name of the logical PC in the ***{Logical machine name}*** text box; this name is entirely free. Then click ***[Validate]***.
- When we click on ***[Validate]***, the application automatically select the command to add a M5000 CC Media Server and display the **"Media server properties"** window (see 4.13.2.2)

Remarque :For more information about logical PCs, see ***"1Defining a logical PC for the media server*** in the chapter ***"8.10Failure tolerance"***.

4.13.2.2 ADDING AN M5000 CC MEDIA SERVER

To add a media server, first define the logical PC on which the M5000 CC Media Server will start (see "Adding a logical PC").

- Select the **[Logical machines for Media Server]** command from the M5000 CC Administrator application

[View] menu: the window **"Logical machines used by media servers"** opens.

- In the left part of the **"Logical machines used by media servers"** window: select the logical PC on which the M5000 CC Media Server will start.

- In the toolbar of the **"Logical machines for media server"** window, click the ***[Add]***  button: the **"Media server properties"** window opens.
- Enter the different characteristics of the media server in the **"Media server properties"** window.
  - Enter the media server identifier in the ***{Media server ID}*** drop-down list.
  - Enter the media server log file path ***{Log file path (local path on the media server}***. This parameter contains the log file path used by the M5000 CC Media Server; this path must be considered as the path for the media server PC in question, even if it is introduced from another PC (Administrator PC).

    Note: *The log file is a file where the M5000 CC Media Server saves information about its working. If this field is blank, an error message appears and the M5000 CC Media Server will not initialize.*
  - Enter the local path (to the media server) for the segment files in the ***{Local path (to media server) for segment files}*** box. This parameter enables the media server to know whether it must copy the segment files associated with incoming voice services in production locally and in which directory. This is only useful if the media server is started on a Pc other than the one on which the M5000 CC file structure, and thus the segment files, are located.

    Note: *This parameter is optional.*
  - For the ***{Automatic start}*** parameter:
    - Enter the maximum stop time for the media server in service mode, in the ***{Maximum stop time in service mode}*** box. When the media servers are alerted about the start of the Server Shutdown procedure, they immediately stop accepting new calls and a timeout equivalent to the value of the parameter entered in this box is initialized. At the end of this timeout, the servers are stopped and the current scripts are no longer processed. If the shutdown execution rule is not verified, the media servers return to their normal activity. So, it is important for the value defined here to be above the value “Maximum duration of pending stop”, defined in the Administrator properties.

      Note: *Default value = 80 [Seconds]*
    - Enter the maximum start time for the media server in service mode, in the ***{Maximum start time in service mode}*** box. This value represents the maximum time available for the "M5000 CC MediaServerService" start procedure. Once this time has elapsed, the start procedure is considered as failed.

      Note: *Default value = 50 [Seconds]*
    - Check or uncheck the ***{Media server must be started in service mode}*** checkbox if you want or do not want the media server to be automatically started by the M5000 CC Server.

      Note: *Default value = unchecked (start in service mode deactivated; the media server starts using the desktop shortcut).*
  - For the ***{Record via MAPI}*** parameter:
    - Enter in the ***{MAPI profile for recording function}*** box, the profile name used to send e-mails while executing a "SaveVoiceMail" node and during agent recording.

      Note: *See in the operating system's Control Panel.*
    - In the ***{MAPI password for recording function}*** box, enter the password used to connect to the message server.

      Note: *This parameter is optional.*
  - For the ***{Socket for web}*** parameter:
    - In the ***{IP address of the socket to use for web functions}*** box, enter according to network configuration:
      - **Without Proxy**: Public IP address
      - **With Proxy**: IP address of M5000 CC Media Server local PC (or PC name if the computer has one address only).

      Note: *Internet format address.*
    - In the ***{IP port of the socket to use for web functions}*** box, enter according to network configuration:

- **Without Proxy**: One port free
- **With Proxy**: One port selected from the Client Proxy configuration file.

Note: *Value between 1 (preferably 1024) and 65535.*

- On the ***{System socket}*** table:
  - u In the ***{System socket IP address}*** box, enter the IP address to which the M5000 CC Server sends notification messages: the M5000 CC Media Server address.

    Note: *The IP address has to be in the Internet dotted format.*
  - u In the ***{System socket IP port}*** box, enter the UDP port on which the M5000 CC Server server sends the messages.

    Note: *M5000 CC Media Server listening port*
- On the ***{Voice synthesis licences}*** table:
  - u Tick the ***{Maximum licence allocation}*** box to automatically reserve a number of "Simultaneous Text-To-Speech access" licences equal to the number of analogue, IP for IVR or IP resources for conference defined for this M5000 CC Media Server.

    Note: *This option corresponds to the default configuration.*
  - u In the ***{Specific licence allocation}*** box, enter the number of "Simultaneous Text-To-Speech access" licences to reserve for this M5000 CC Media Server.

    Note: *This function is only available if the **{Maximum licence allocation}** option is unchecked.*

    Note: *All the required memory space is taken when the media server is started for all the channels and languages declared: each Text-to-speech channel uses approximately 2.2 MB for each language (example: 16 TTS channels, 3 languages --> 2.2 *48 = 105.6 MB).*
- When we add a Media server to a logical computer to which no physical computer is associated, the Administrator application displays a new window that allows associating a physical computer to the logical computer. The user cans:
- Select an existing physical computer in the drop down list. In this case, the selected physical computer is associated to the logical computer. (see 4.13.2.4)
- Enter the name of a physical computer. In this case, a new physical computer is added to the configuration with default option value (see 4.13.2.3), then, this physical computer is associated to the logical computer (see 4.13.2.4).

Nota : • *Only one M5000 CC Media Server on a Media Server computer is allowed to use the HMP conference functionality. It concerns the conference bridge and the execution of conference node in IVR script. The M5000 CC Server limits the definition of IP for conference to a single Media server instance per logical machine. When an IP for conference is defined for a logical machine, the conference node in IVR script will be allowed to be executed only on this Media Server. When no IP for conference resource are defined, the conference node can be executed only in the first Media Server where IP for IVR resource is defined.*

Nota : • *It is possible to execute two different logical machines on a same computer (by using two different Media Server numbers). This possibility **is not supported** for Conference Bridge and for conference node in IVR script.*

The following message is displayed in Media Server when conference functionality is available:
Conference functionality will be initialized on this media server
In that case, the conference functionality will be working only if M5000 CC and HMP license are correct.

Nota : • *The following message is displayed in Media Server when conference functionality can not be used:*
Conference functionality not available in this media server

4.13.2.3 CONFIGURING M5000 CC MEDIA SERVER'S PHYSICAL PCS

For choosing the physical PCs on which the logical machine serving as support for the media server will run.

- Select the **[Computers for Media Server]** command from the M5000 CC Administrator application **[View]** menu: the **"Computers used by media servers"** window opens.
- In the toolbar of the **"Computers used by media servers"** window, click ***[Add a computer]***  : the

"Computer properties" window opens.

- Enter the name of the logical machine in the ***{Machine name}*** text box.

  Note: *This "Media server name" must correspond to the name of the PC on which the media server will run; its syntax must respect the syntax for the names of the PCs that are part of a Microsoft Windows domain.*

- In the **{Socket}** tab, you must redefine the IP address properties defined already in the logical PC (the properties defined here will have priority over those defined in the logical machine). When the ***[use ... by default]*** boxes are ticked, the Media server will use the properties of the logical machine on which its is defined.
- In the **{ESX servers}** tab, it is possible to specify the ESX server on which the Media server can run (only if the VMWare infrastructure is available). For this, just choose **[Use only with the above ESX servers:]** then click ***[Add]***  . An **"ESX server properties"** window opens. Enter the name of the host computer and the domain name of this computer in the corresponding text boxes and click ***[Validate]***.

  Note: *Using an ESX server as the "Computer associated with a media server's logical machine" implies that this latter be without SIV.*

Remarque :For more information see **"Problems of media servers"** in the chapter **"Failure tolerance"**.

4.13.2.4 ASSIGNING A COMPUTER TO OR REMOVING A COMPUTER FROM A LOGICAL MACHINE:

- Select the **[Logical machines for Media Server]** command from the M5000 CC Administrator application **[View]** menu: the window **"Logical PCs used by media servers"** opens.
- In the left part of the **"Logical machines used for media servers"** window, select the logical machine to which a computer will be assigned.
- The computers that may be assigned to the logical machine are displayed in the **"Computers associated with the logical machine"** window. If no computer is defined, you must define one (see above in the section **"Configuring the physical PCs of M5000 CC Media Server"**)
- Select a computer in the **"Computers associated with the logical machine"** window and click ***[Assign logical machine to computer]***  (in the toolbar of this same window) to assign the selected computer to the logical machine. You can repeat this operation several times to assign several computers to the logical machine.
- To cancel a computer assignment, just select an already assigned computer in the **"Computers associated with logical machine"** window (the **{Member}** field is equal to "Yes") and click ***[Unassign logical machine from computer]***  .

4.14 CONFIGURING THE MINIMUM PARAMETERS ON THE APPLICATION M5000 CC ADMINISTRATOR

1 Add a new Service

- First switch to SDI (Single Document Interface) mode via the **[View] menu**.
- Select **[Services]** from the **[View]** menu of the M5000 CC Wall Display application; the **"Services"** management window opens:

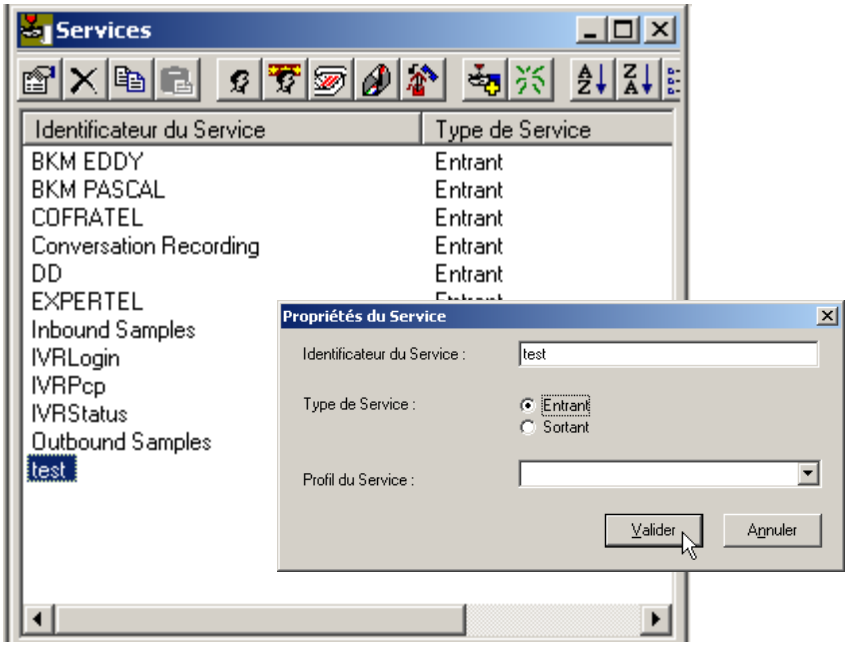


Figure 4.7 APPLICATION "SERVICES" WINDOW M5000 CC ADMINISTRATOR

- In the toolbar of the **"Services"** window, click the **Add Service** button  .
  - u Enter a name for the Service in the ***{Service ID}*** textbox (Test, for example).
  - u Check the ***[Inbound]*** option as ***{Service type}***.
  - u Click ***[OK]***.

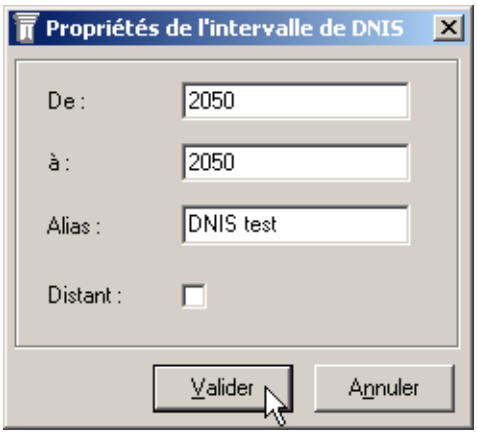
2 Bind DNIS ranges to an inbound Service (voice)

The DNISes are telephone numbers called by customers to reach the Service from outside.

- Select the service created previously, then in the “Test service DNIS range” window click the **Add DNIS range**  toolbar button.

or

- Right click to display the pop-up menu and select **[Add]**.
  - u ***{From}***: Lower DNIS range limit,
  - u ***{to}***: Upper DNIS range limit,
  - u ***{Alias}***: alias associated with the DNIS range (15 characters maximum),
  - u ***{Remote}*** : this option must be enabled if the DNISes specified in the range are to be used for transfer to another site (do not enable for the test).



3 Add a new manager to the Service

- Select the "test" Service from the list of Services in the **"Services"** management window (see Figure 4.7).
- In the **"Manager of the 'Test' Service"** window click **Add manager**  .
- Double click the user you want to make "manager of the Service" (in the test script: take the default user created as M5000 CC Administrator, who will also be Service manager).

4 Add agents:

Each agent is automatically added when he or she is identified while connecting for the first time to the web portal.

5 Add agent telephones:

- Select the **[Phones]** command in the M5000 CC Wall Display application's **[View]** menu. the **"Phones"** window opens:

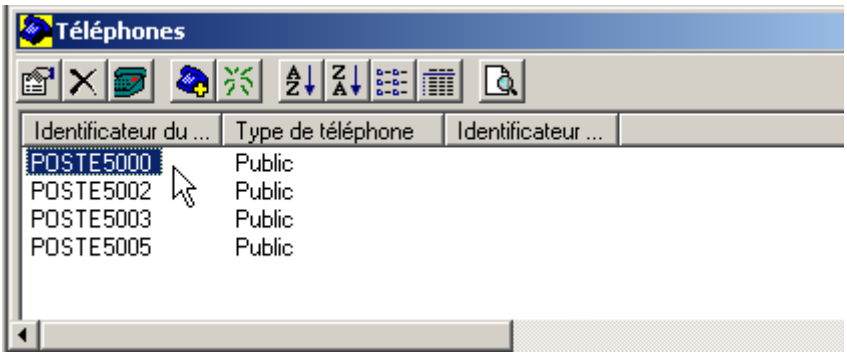


Figure 4.8 APPLICATION "PHONES" WINDOW M5000 CC ADMINISTRATOR

- In the toolbar of the **Phones** window, click the **Add phone** button  .
- In the **"Phone properties"** window, give a name to the phone (e.g.: PN5000) and tick **[Public] or [Private]**, then add an extension to the phone just selected.

M5000 CC Directory Server

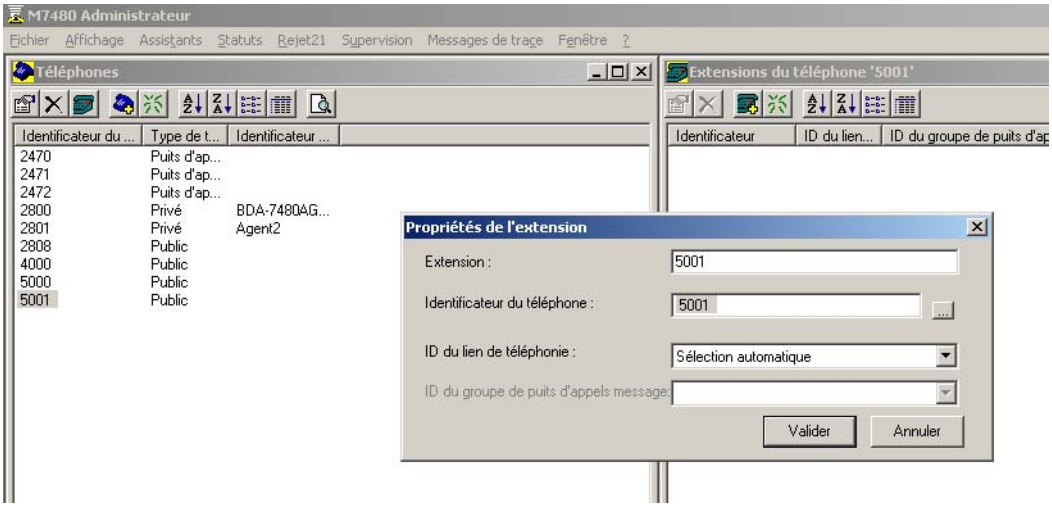


Figure 4.9 APPLICATION "EXTENSIONS" WINDOW M5000 CC ADMINISTRATOR

- In the **"Extensions"** window toolbar, click the **Add extension**  button.
- In the **"Extension Properties"** window, set the following parameters:
  - u Key in the extension number in the ***{Extension}*** text box.
  - u Click the button to the right of the ***{Phone Id}*** field: the **"Phones"** window opens; double click the name of the relevant phone in this window.
  - u From the ***{Telephony link ID}*** drop-down list, select the ID of the telephony link with which this extension must be associated. You cannot change the telephony link associated with an extension when the extension is monitored. Each M5000 CC extension is monitored by a single telephony link. When you define a new extension you must assign it to a telephony link which has already been defined.
- Click ***[Validate]***.
- Repeat these operations to add all the agent telephone sets.

6 Add "Message call pit" phones (Solution without IVR only)

- Open the **"View/Message call pit group"** window and add a message call pit group for each message call pit.
- In the **"Phones"** window:
  - u add a phone,
  - u select "Call pits".
- In the **"Extensions"** window:
  - u complete "CSTA link":
    - extension number,
    - Message call pit group ID.
- Repeat these operations to add all the message call pits.

4.15 CONFIGURING SUPERVISION GROUPS

4.15.1 DEFINING THE BUSY STATUS

The supervision is performed in real time and distinguishes four statuses per supervised extension:

- Free
- Ringing free
- Ringing busy
- Busy

The distinction between the different statuses depends on the set and PBX extension parameters.

By default:

- If the set does not have any ringing CCO and there are some remaining free CCOs, the status is free.
- If the set has a ringing CCO and there are some remaining free CCOs, the status is ringing free.
- If the set has a ringing CCO and there are no longer any remaining free CCOs, the status is ringing busy.
- If the set does not have any ringing CCO and there are no longer any remaining free CCOs, the status is busy.

It is possible to change the busy status by changing DCF 110. The definition of the busy status is:

- Either no free CCO (DCF not set)
- Or at least one CCO is not free (DCF set).

4.15.2 MAXIMUM NUMBER OF SUPERVISABLE SUBSCRIBERS

Hypothesis: the supervised subscribers have an average traffic rate of 0.2 Erlang, with an average communication time of 180 seconds. (This means that these figures are not valid if the function is used to supervise call centre agents or attendant consoles).

Table2:

INTERCOM SUPERVISION	IP IVR
• 4000 subscribers if PBX >= R4.1 • 2000 subscribers if PBX <= R3.2	-
-	7000 calls/hour
In case of IP IVR + intercom supervision combination, the different loads are added up. Therefore, the maximum loads must be calculated proportionally.	
• 3200 subscribers if PBX >= R4.1 (80 %) • 1600 subscribers if PBX <= R3.2 (80 %)	1400 calls/hour (20%)

Note: *The number of "supervised subscribers" expressed here corresponds to the total number of subscribers declared as supervisable, even if, at any time, the status of only one small part of them will be displayed on the agent PCs. (In fact, the configuration of supervised sets is static and, since the need is to quickly know the status of a subscriber before transferring a call to him or her, all the agents that can be supervised by an agent must be permanently supervised by the M5000 CC Server.)*

Note: *Some examples of combinations, as from release R4.1:*

•No IP IVR; supervision: 4000 subscribers
•IP IVR: 1400 calls/hour; supervision: 3200 subscribers
•IP IVR: 2800 calls/hour; supervision: 2400 subscribers
•IP IVR: 4200 calls/hour; supervision: 1600 subscribers
•IP IVR: 5600 calls/hour; supervision: 800 subscribers
•IP IVR: 7000 calls/hour; no supervision

4.16 CONFIGURING THE M5000 CC DIRECTORY SERVER

4.16.1 DIRECTORY SEARCH BY CLIENTS

- Only the users that belong to a user group with access to at least one directory may use the directories. Any user defined in the system may be included in a user group with the right to access the directories and use the "Directories" function via a thin client.
- The association between the users and user groups must be made in the M5000 CC Administrator application via Menu/View/User groups (see Sheet U-327).

4.16.2 SUPERVISION WITH DIRECTORIES

The number of extensions monitored by the system is limited by the number of virtual sets declared and the extensions associated with these sets (at most 64 extensions per virtual set).

4.16.2.1 USER GROUPS

A user group is used to associate some functions like extension supervision or directory access with a list of

M5000 CC users.

A user group must be defined in the M5000 CC Administrator application, in Menu/View/User groups (see Sheet U-327):

- Add the user group to the list of user groups.

4.16.2.2 VIRTUAL SET

A virtual set is a set strictly restricted to supervising a group of extensions (it is necessary to define a VTI/XML link).

The extension to be supervised and associated with this virtual set must belong to the same intercom group as the virtual set (PBX configuration). For multisite PBX, the system configuration must be examined so that the load resulting from the intercom function can be absorbed by the Movacs link. In fact, the intercom function, if wrongly configured, may overload this latter. (For example, if the intercom function is only used for M5000 CC, each virtual set must be declared on the site on which the subscribers it is supervising are declared, to avoid having intercom messages between sites).

The association between virtual sets and a supervision group is made in the M5000 CC Administrator application, in Menu/View/User groups (see Sheet U-327):

- Display the virtual set window for a user group: add a set of virtual sets to the corresponding user group.

The directory users can be defined as user group user in the Administrator. These users can supervise the extension statuses obtained after any directory request made in the system, if these extensions are supervised in their user groups.

4.16.2.3 USER

M5000 CC system users may belong to one or more user groups.

Users belonging to one user group have access to the associated functions, such as the possibility to supervise some extensions or to access some directories.

The association between the M5000 CC users and user groups must be made in the M5000 CC Administrator application via Menu/View/User groups (see Sheet U-327):

- Display the users window for a user group: add the user to the corresponding user group.

4.16.3 NAME RESOLUTION BY M5000 CC SERVER

For the M5000 CC Server to resolve the names (surname and first name) for calls managed by M5000 CC and for this data to be recorded in the statistics, you have to enable this function.

In the M5000 CC Administrator application, in Menu/View/SQL directory server (see SheetU-337):

- Configuration frame: tick the box “Enable connection between M5000 CC Server and SQL directory server” to authorise automatic surname and first name search.
- Connection frame:
  - Specify the hostname of the PC containing the SQL directory server.
  - Specify the name of the instance contained in the SQL directory server.
  - Specify the type of authentication (Windows or SQL) used to access the SQL directories.
- Use M5000 CC Server ID to connect (available for Windows authentication only): this option allows the use of the username and password entered in the M5000 CC Server PC to connect to the SQL directory server. If this option is not enabled in Windows authentication mode, you have to specify a username, a domain, as well as a password for connection to the SQL directory server.
- Identification frame:
  - For identification within the framework of Windows authentication, see the last point in the connection point (above).
  - For identification in an SQL type connection, you have to specify a username and a password.
- “Use name resolution for private calls” checkbox. this option activates name resolution for this call type. This box concerns only the resolutions made by the M5000 CC Server. Whether it is ticked or not, the resolution will be made by the portal and M5000 CC web service in the called party’s directory.

Note: *This resolution is activated by default on all the services defined (all incoming professional calls). However, it is possible to change this behaviour by editing the properties of each service.*

4.16.4 UNLOCKING

To use the directories, you need the “Simultaneous directory access” licence, activated with the “Simultaneous directory access” key code (see Section 8.3.8.1.2).

Without a sufficient number, users authorised to use the directories will be unable to use the “Directories” function in the M5000 CC solution.

For instance, if 4 simultaneous accesses are available and 4 M5000 CC clients with the right to use the directories are connected, a 5th M5000 CC client connecting will not be able to use the directories even if said user has the right to do so.

In this case, a warning message is added to the M5000 CC Server logbook.

4.16.5 ALLOWING REMOTE CONNECTIONS WITH A WEBSERVICE

If the SQL directory server and WebService are not installed on the same PC, an error message will be displayed, informing the user that the SQL server does not allow remote connections.

To avoid this problem, configure the SQL express 2005 directory server in such a way that it allows remote connections as follows:

Enable remote connection

- Click “Start”, point to “Programs” then to “Microsoft SQL Server 2005” and “Configuration Tools" and then click “SQL Server Surface Area Configuration”.

- On the "SQL Server 2005 Surface Area Configuration" page, click "Surface Area Configuration for Services and Connections".

- On the "Surface Area Configuration for Services and Connections" page, develop a "database engine" then click "Remote Connections", click "Local and remote connections", click the right protocol to be enabled for your environment then click "Apply".

At the end of this operation, restart the MSSQLSERVER service so the modifications can be taken into account.

Enable the SQL Server Browser service

- Click “Start”, point to “Programs” then to “Microsoft SQL Server 2005” and “Configuration Tools" and then click “SQL Server Surface Area Configuration”.

- On the "SQL Server 2005 Surface Area Configuration" page, click "Surface Area Configuration for Services and Connections".

- On the "Surface Area Configuration for Services and Connections" page, click "SQL Server Browser", click "Automatic" for "Start type" then click "Apply".

- Click Start then OK.

If WebService is installed on the same PC as IIS6 (Windows 2003), add a separate account in the SQL directory server and assign it sufficient rights.

Creating a particular account

- The account to be created must have the following identity:

DomainName\WebServiceMachineDomainName$

- This account can be added using Enterprise Manager or through an SQL request.

exec sp_grantlogin DomainName\WebServiceMachineName$.

- Then associate this account with the M5000 CC database, using Enterprise Manager or through an SQL request.

Use ACP.

go

exec sp_grantdbaccess 'DomainName\WebServiceMachineName$'

go

- Assign sufficient rights to this account so it can be used.

Note: See Architecture of the web reporting service in § 8.4.5.1.1.

4.17 INSTALLING AND CONFIGURING THE WALL DISPLAYS

Note: The wall display must be connected to the PC on which the M5000 CC Wall Display application is installed (preferably a Client PC located near the display, though it can be installed on the Server PC).

4.17.1 INSTALLING AND CONNECTING THE WALL DISPLAY TO THE COM PORT

- Install the wall display following the display manufacturer's instructions.
- Connect the wall display cable to the PC's "COMx" port (x = COM port number if the PC has more than one port).

4.17.2 CONFIGURING THE PC COM PORT

- Check and if necessary change the parameters of the PC "COM" port, via the Windows application, in line with the specifications in the display manufacturer's handbook.

4.17.3 INSTALLING THE M5000 CC WALL DISPLAY APPLICATION ON THE PC

The M5000 CC software is installed on client PCs in the same way as on the Server PC in "Custom installation" mode (see Section 4.6.1.1) by selecting only those applications required by the Client PC.

For the wall display, check the **"M5000 CC Wall Display"** application when selecting the applications.

Note: If the M5000 CC Wall Display application is installed on a PC other than the Server PC, you must go to the network path in the "network neighbourhood" to find the M5000 CC File Structure" installed on the Server PC by clicking ***[Browse...]*** in the ***"M5000 CC File Structure"*** window in the installation procedure.

4.17.4 DEFINING THE WALL DISPLAY IN THE APPLICATION M5000 CC ADMINISTRATOR

1 Define the Wall Display properties:

- Select **[Wall displays]** in the M5000 CC Wall Display application's **[View]** menu.
- Click the  icon: the **"Wall display properties"** window opens.
- Configure the Wall Display properties:
  - u Select the serial port to which you want to connect the wall display from the ***{Serial port}*** drop-down list.
  - u Select the number of line(s) used on the wall display from the ***{Number of lines}*** drop-down list. The maximum number of lines is 4.
  - u Select the maximum number of characters that can be used by the wall display from the ***{Maximum number of characters}*** list.
  - u ***{Communication protocol}***: select "Alpha™" or "Activox" from the drop-down list, depending on the type of Wall display you have.
  - u Click ***[Validate]***.

2 Assign the wall display to the Service created previously

- Select **[Wall displays]** in the M5000 CC Wall Display application's **[View]** menu.
- Click the  icon: the **"Wall display properties"** window opens
- In the **{Areas}** tab:
  - Select the number of zones used on the wall display from the ***{Number of zones}*** drop-down list. The maximum number of zones is equal to the number of lines (when a new wall display is created, this number is set to **1** by default).
  - In the **"Services available"** frame on the left of the window, select the previously created service (see Section 4.14), then click  : the name of the service appears in the **"Services to show"** part.

    Note: *When you assign a Service to a zone, the non filtered statuses are displayed by default. The selection of information in the zone can be changed by the Service manager of the assigned Service.*
- In the **{Automatic start}** tab (used in service mode only):
  - Check or uncheck the ***[Wall display must be started in service mode]*** checkbox if you want or do not want the wall display to be automatically started by the M5000 CC Server.

    Note: *Default value = unchecked (start in service mode deactivated; therefore, the wall display starts using the desktop shortcut).*

- Enter the name of the PC on which the wall display service is running in the ***{PC name}*** field.
- Enter the maximum stop time for the wall display in service mode, in the ***{Maximum stop time in service mode}*** field.

  Note: *Default value = 80 [Seconds]*
- Enter the maximum start time for the wall display in service mode, in the ***{Maximum start time in service mode}*** field. This value represents the maximum time available for the "M5000 CC Wall Display Service" start procedure. After this limit, the start procedure is considered to have failed.

  Note: *Default value = 50 [Seconds]*

• Click ***[Validate]***.

3 Check that the Wall Display is working properly

- Run the "WallDisplay" application on the PC connected to the display.
- Check that the information (e.g.: unfiltered statuses) appears cyclically on the wall display.

Note: The call server must be launched to enable you see the real statuses (otherwise, switch the server to demonstration mode, using the [Tools] menu of the M5000 CC application.

4.18 M5000 CC MULTI-SERVER CONFIGURATION

4.18.1 ARCHITECTURE DESCRIPTION

The various M5000 CC Server are connected to the network using the TCP/IP protocol. Each M5000 CC Server uses its own TSP and its own PBX (the PBXs are interconnected via the telephone network and it is necessary, in this case, to define on the innerflow Server the prefix of the PBX used by the overflow Server), although it is possible to have a configuration where two M5000 CCs use the same PBX.

Each M5000 CC is independent and uses its own File Structure, but the data exchanged between the M5000 CC Server (Service, filters, global variables) must be declared in all the corresponding Services.

In order to transfer a call from one Server to another, a relationship must be set up between these two Servers. This relationship will be established in the Administrator applications of each of the two systems:

• innerflow Server M5000 CC Wall Display application: define an overflow Server (the local Server can transfer a call to another Server),

• overflow Server M5000 CC Wall Display application: define an innerflow Server (the local Server can transfer a call to another Server)

The various Servers are all on an equal footing. None of them is “master” over the others and if one of them “crashes”, the others will attempt to reconnect every second (while keeping messages in memory for a maximum of 3 minutes).

Note: The relationship can be set up in both directions: the same Server can be for overflow and innerflow.

To ensure that calls are processed if the connection between the two Servers is lost, call transfers must be managed within the script.

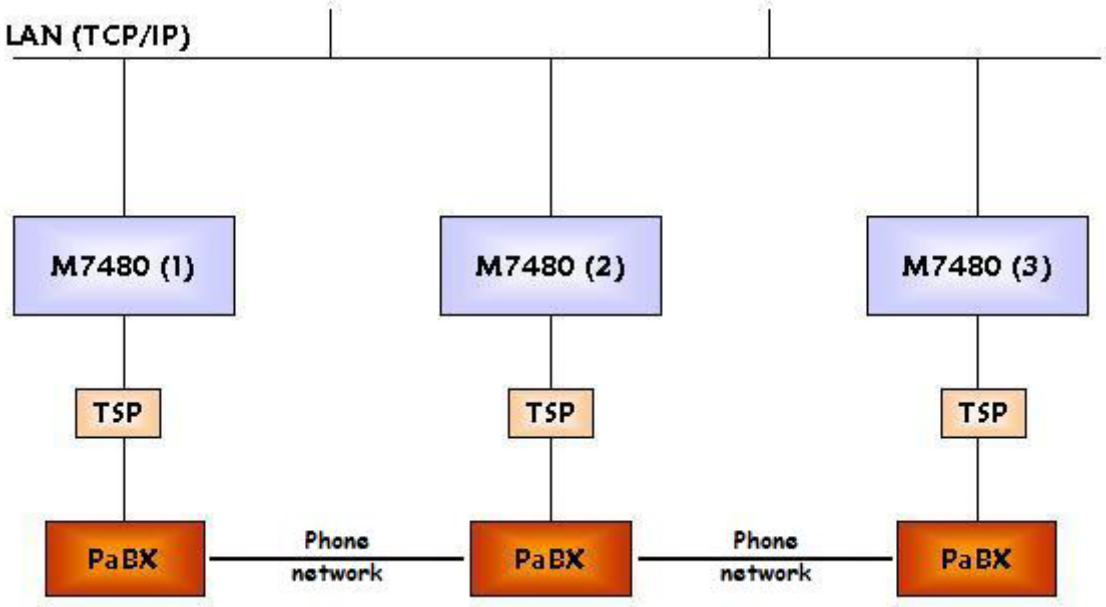


Figure 4.10 ARCHITECTURE AND INTERCONNECTIONS OF SERVERS

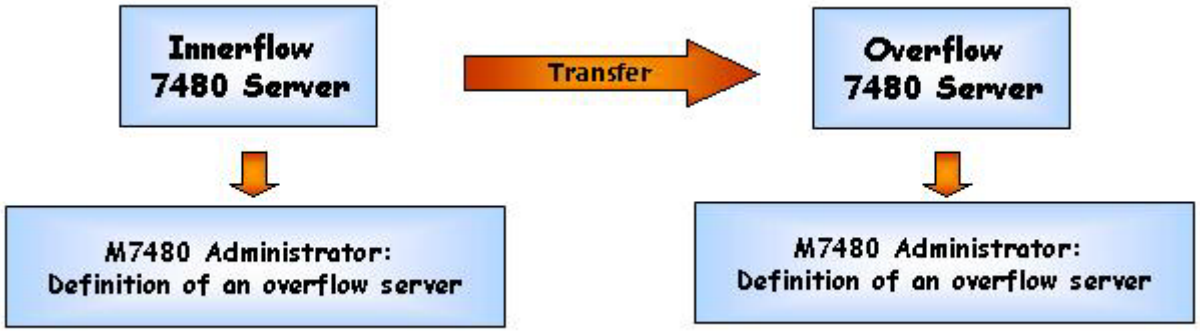


Figure 4.11 INNERFLOW AND OVERFLOW SERVERS

4.18.2 Configuring the overflow Servers

On the innerflow server define the properties of the overflow Servers:

- Select **[Network > Overflow Servers]** in the M5000 CC Wall Display application's **[View]** menu. The **"Overflow Server"** window opens:
- Click **add**  to define a new overflow Server.

Overflow Server properties:

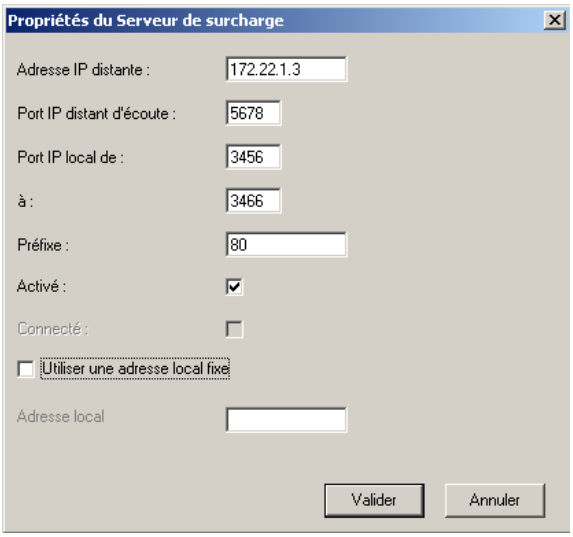


Figure 4.12 "OVERFLOW SERVER PROPERTIES" WINDOW

- ***{Remote IP address}*** : this field is filled in with the IP address of the remote Server on the network.
- ***{Remote listening IP port}***: IP port used by the remote Server to establish the connection.

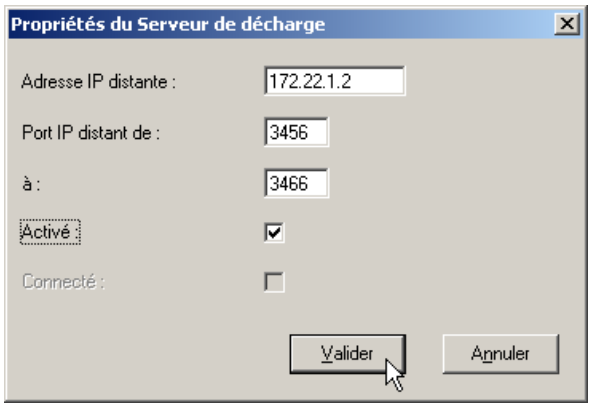
Caution: *This port must be defined on the overflow server in the M5000 CC Administrator application / properties / local parameters. Fill in the local listening port with the number of this port.*

- ***{Local IP port from}*** : start of the range for the local IP port to initialise the connection (a range of ports is used to ensure that one is free).
- ***{to}***: end of the range for the local IP port (must be greater than or equal to the start of the range) (set a range of about 10 ports).
- ***{Prefix}***: for a tie line configuration, add the prefix of the remote Server PBX (not necessary in a multi-site configuration).
- ***[Activated]*** checkbox: overflow Server activation, which means it is able to connect to a remote Server.
- ***[Connected]***: greyed out, display only field showing whether the connection is set up (see PBX link test in section 4.18.4).
- [Use a fixed local address] checkbox: activating the field used to define a fixed local IP address.
- {Local address}: value of the fixed local IP address.

4.18.3 CONFIGURING THE INNERFLOW SERVERS

On the overflow server define the properties of the innerflow Servers:

- Select **[Network > Innerflow Servers]** in the M5000 CC Wall Display application's **[View]** menu: The **"Innerflow Server"** window opens.
- Click **add**  to define a new innerflow Server.



Innerflow Server properties:

- ***{Remote IP address}*** : this field is filled in with the IP address of the remote Server on the network.
- ***{Remote IP port from}*** : start of the range for the IP port used by the Remote Server to initialise the connection. Enter the same values as in the previous section.
- ***{to}***: end of the range for the local IP port (must be greater than or equal to the start of the range).
- ***[Activated]*** checkbox: innerflow Server activation, which means that it is able to connect to a remote Server.
- ***[Connected]***: greyed out, display only field showing whether the connection is set up (see PBX link test in section 4.18.4).

4.18.4 CHECKING THE CONNECTIONS WITH THE PBX

There are several ways of checking the connection with the PBX:

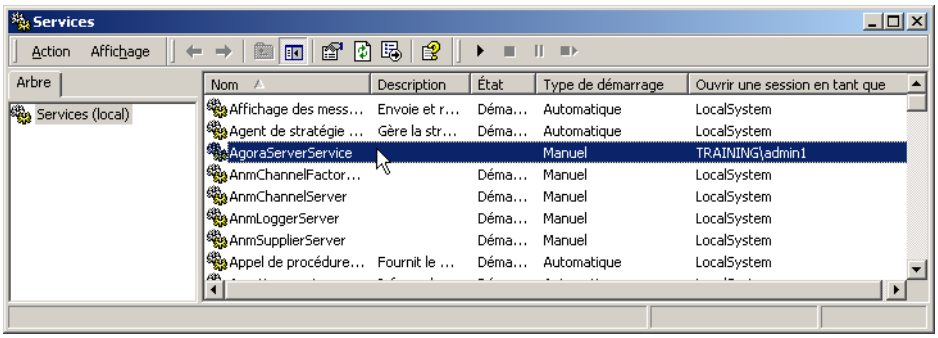
- In the **"Innerflow Servers"** window (see Figure 4.11): In the **"Connected"** column the value "false" switches to **"True"**.
- In the **"Innerflow Server properties"** window (see Figure 4.12): The greyed out ***[Connected]*** field is now ticked.
- In the M5000 CC Server application "Server logged messages" window: "Link established with server" appears for the PBX.

4.19 CONFIGURING AUTOMATIC SERVER STARTUP

4.19.1 CONFIGURING WINDOWS SERVICES (ADMINISTRATION TOOLS/SERVICES)

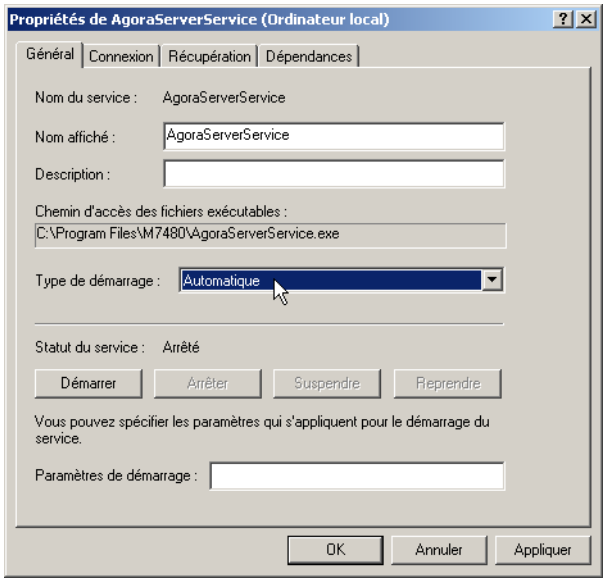
The following procedure involves configuring the "M5000 CC ServerService" in automatic startup mode using the Windows Administration tools.

- The **Administration tools"/Services** (2000) applet located in the **Control Panel** is used to start, stop and configure the service. To configure the service, click the **[Start...]** button,



- The "M5000 CC ServerService" starts automatically when the machine initializes, provided the **{Startup Type}** field is set to **[Automatic],** and the "M5000 CC MediaServerService" and "ReportingServerService"

fields remain set to **[Manual]** since these services are started by the M5000 CC Server:



4.19.2 CONFIGURING AUTOMATIC SERVER START AND STOP IN THE M5000 CC ADMINISTRATOR APPLICATION

4.19.2.1 CONFIGURING THE AUTOMATIC STARTUP PARAMETERS M5000 CC SERVER

- From the M5000 CC Wall Display application **[File]** menu, select **[Properties]**.
- Click the **{Automatic start-up}** tab.
- Enter values in the following fields :

Note:

LABEL	DESCRIPTION	COMMENT
M5000 CC ServerService maximum start time	This value represents the maximum time available for the M5000 CC ServerService start procedure.	Once this time has elapsed, the NT Service start procedure is considered as failed. The Service start procedure is considered complete when the M5000 CC Server is successfully started.
Maximum number of M5000 CC MediaServerServices start attempts	This value represents the number of attempts to start the M5000 CC MediaServerService by the M5000 CC Server	Default: 5
Time between M5000 CC MediaServerServices start attempts	This value represents the interval between two attempts to start the M5000 CC MediaServerService by the M5000 CC Server	

As the graphic interface is available neither to the M5000 CC Server nor to M5000 CC Media Server in service mode, the administrator has to shut down the M5000 CC Server application from his/her own application (M5000 CC Administrator).

4.19.2.2 CONFIGURING AUTOMATIC MEDIA SERVER START

- Select **[Media Server]** from the M5000 CC Wall Display application **[View]** menu.
- Double-click a "Media server identifier".
- In the appropriate media server windows, select the ***{Automatic start}*** tab.
- Tick the option ***[Media server must be started in service mode]***.

4.19.2.3 CONFIGURING THE SHUTDOWN PARAMETERS OF THE M5000 CC SERVER

- From the **"M5000 CC Administrator"** application **[File]** menu, select **[Properties]**.
- Click the **{Server shutdown }**tab.
- Enter values in the following fields:

Note:

LABEL	DESCRIPTION	COMMENT
Maximum stop pending time	This value represents the maximum time authorized for the M5000 CC Server shutdown procedure.	Once this time has elapsed, if the shutdown execution rule is not respected, the shutdown procedure will be stopped while the M5000 CC Server will keep running normally. This value must be below the “Maximum stop time in service(s) mode”, defined in the “Media Server” window of the M5000 CC Wall Display application. (Default value = 80).
Maximum number of online components connected before shutdown	This value is the maximum number of online connected components (M5000 CC Wall Display, M5000 CC Service Manager, M5000 CC User, M5000 CC User API, User ActiveX Control, M5000 CC Wall Display) authorizing the M5000 CC Server shutdown procedure.	If the number of online components is less or the same as the value of this parameter, the M5000 CC Server shutdown rule is respected. (Default value = 0). The default value indicates that everyone must be disconnected before the server can be shut down (maximum security).

4.19.2.4 M5000 CC SERVER SHUTDOWN EXECUTION RULE

When the M5000 CC Server shutdown procedure is started, the M5000 CC Server sends a notification to all the connected components. The message displayed **"The Server is shutting down, please close your application"** advises online connected components (M5000 CC Wall Display, M5000 CC Service Manager, M5000 CC User, M5000 CC User API, User ActiveX Control and M5000 CC Wall Display) that the M5000 CC Server is entering a shutdown phase and prompts them to close their application.

Before shutting down, the M5000 CC Server checks a shutdown execution rule. This rule is governed by two parameters configured in the M5000 CC Wall Display application (see Section 4.19.2.3) :

- **Maximum number of interactive components connected before stop** (default value = 0)
- **Maximum stop pending duration** (default value = 60 Seconds)

The parameter “Maximum stop pending duration” represents the maximum acceptable waiting time before the number of connected interactive components falls below the value of the parameter “Maximum number of interactive components connected before stop”. Once this time has elapsed, if the shutdown execution rule has not yet been respected, the shutdown procedure is stopped and the M5000 CC Server keeps running normally.

Connected media servers are also alerted about the initiation of the M5000 CC Server shutdown procedure. Once they have received this notification, they will take no new calls. If the shutdown execution rule is not verified, the media servers return to their normal activity. If the shutdown execution rule is respected, the media servers close on expiry of the "Maximum stop pending duration” (see Section 4.19.2.1).

4.19.3 RESTARTING THE SERVER

- Stop all applications open on the Server PC.
- Restart the Server PC via the Windows **[Start]** menu.

4.19.4 CHECKING CONNECTION MESSAGES

- Open a new Windows session under the M5000 CC administrator profile.
- Open the M5000 CC Wall Display application (see section 4.10.2).
- Check the server and media server connection messages in the M5000 CC Wall Display application "Monitoring" window.

4.19.5 ACTIVE M5000 CC SERVER SUPERVISION BY THE WINDOWS SERVICE

In Windows service mode, the M5000 CC Server is monitored continuously by the corresponding Windows service. If the M5000 CC Server crashes, the Windows service may behave in the following three ways, depending on the registry configuration described below:

- The Windows service stops (default behaviour).
- The M5000 CC Server is restarted.
- A command is executed, then the M5000 CC Server restarted.

The following values (to be created if unavailable) are located under "HKEY_LOCAL_MACHINE\SOFTWARE\Dialog Systems\AGORA\General Information".

Auto restart of Server by service if not alive

Default value = 0. The service stops in case of M5000 CC Server failure.

Value 1: the service may execute a command according to the second registry value described below, then restart the M5000 CC Server.

Command when Server not alive

Value "" (empty by default): no command is executed in case of M5000 CC Server failure.

Other value: the command indicated by this value is executed by the Windows service before the M5000 CC Server is restarted.

Note: the value "Command when Server not alive" is only taken into account if "Auto restart of Server by service if not alive" has the value 1.

Example: in Windows 2003 or XP, to restart the PC when the service detects an M5000 CC Server fault:

- Set the value "Auto restart of Server by service if not alive" to "1", and
- Set the value "Command when Server not alive" to "shutdown -r".

4.19.5.1 USE TO ANALYSE SERVER CRASH

This function may be used to take a “photograph” of the AgoraServer.exe process (if still available) when Windows detects an M5000 CC Server crash.

For this:

- install "Debugging tools for Windows", available in the URL http://www.microsoft.com/whdc/devtools/debugging/default.mspx (install the latest available version for 32-bit Windows).
- Set the value "Auto restart of Server by service if not alive" to "1", and
- Set the value "Command when Server not alive" to the following value (on one line, to be adjusted according to the installation directory for "Debugging tools for Windows" and the target directory): cscript /E :vbscript "C:\Program Files\Debugging Tools for Windows\adplus.vbs" -quiet -hang -pn agoraserver.exe -o c:\temp

In case of fault, a directory containing this “photograph” of the process will be created in "C:\Temp".

4.20 CONFIGURING NIGHT MODE

- Select **[Properties]** from the M5000 CC Wall Display application's **[File]** menu to open the **"Properties"** window: click the **{Night mode}** tab, then click ***[OK]*** when all the parameters have been configured.

Note: During "night mode" the system switches to "Maintenance mode".

The start time for the "Night procedure" must be between the start and the end of "Night mode".

To set the night mode start/end time:

- In the ***{Night mode}*** box, enter the night mode start time in the ***Start time*** text box. The time has to be written in the format HH:MM, where H stands for the hours and M the minutes.

Note: *The "Night mode" start time is also the time when all the agent statuses for the day are reset to 0 and the calculation starts from zero again.*

- Enter the night mode end time in the ***{End time}*** text box. The format is the same as for the start time.

To set the night procedure start time:

- In the ***{Night procedure}*** frame, enter the night mode start time in the ***{Start}*** text box. The format is identical to that of the previous frame.

Nota : • *The time between the start of Night Mode and the start of the Night procedure is used to make system data backups.*

•During the Night procedure the Reporting database is cleared and compressed, so it is not possible to have a report during this time (which may be several hours in the case of large databases).

Data backup:

Between the beginning of Night mode and the beginning of the Night procedure, the file structure is no longer exclusively accessible to the M5000 CC Server, and the statistics constructor is no longer activated. So, this is the time to back up the file structure.

- Plan this backup operation with the system administrator.

4.21 CONFIGURING NETWORK BROADCASTS AND ACTIVITY

4.21.1 CONFIGURING BROADCASTS

- Select **[Properties]** from the M5000 CC Wall Display application's **[File]** menu to open the **"Properties"** window: click the **{Broadcast}** tab, then click ***[OK]*** when all the parameters have been configured.
  - ***{Status}*** box
    - u ***{Broadcast period***: The minimum broadcast frequency is calculated and displayed to help you enter the ideal value. If you enter a broadcast frequency value less than this minimum, an error message is displayed (in red). Attention: this minimum value is evaluated for the current configuration. It means that this calculation takes into account the current number of Services in production, the number of Service filters... If one of these parameters changes, the minimum broadcast frequency will be different!

      Note: *The broadcast parameter affects the system performances. Changing from a period of 5 s to 2 s represents an additional 25 % of CPU consumption on the server PC.*

    - u ***{Number of datagrams to send}***: this value must be numerical. When the number of broadcast messages to be sent is too high, some datagrams may be lost and the real time statuses may become unavailable in the client applications. To avoid such problems, we send the datagrams a few at a time instead of all at once. For this purpose, we divide the total number of datagrams into several groups. A group of datagrams is sent every 50 ms. The number of datagrams to be sent per group is defined in the M5000 CC Wall Display application. The default value is 5. A nil value signifies that all the datagrams will be sent at the same time.

- ***{Broadcast check period}***: numerical value between 1 and 60. If no client applications are receiving any broadcasts, the client will use DCOM to receive information in real time from the Server. The broadcast check period indicates how long the client application may remain without receiving any broadcasts before making the DCOM call.
- ***{Time for calculation of average values}*** (s) : multiple of the broadcast frequency. Must be greater than 60 sec. It relates to the real time statuses which may be displayed on different product media (M5000 CC Wall Display, M5000 CC Service Manager, M5000 CC User, M5000 CC Wall Display, physical Wall Displays): some of the properties that can be displayed are calculated over a period (e.g.: in the screenshot above, the Average time before abandon is calculated over a period of 50 sec and broadcast every 5 sec, whereas others such as the Number of DCM calls are broadcast every 5 sec as snapshots only.
- ***{Remote broadcast frequency}***: indicates the broadcast frequency for the remote Servers. This value must be a multiple of the broadcast frequency and must be in the range [1, 300] in seconds (only if you are in a multi-Server configuration).

- ***Average ports load (IVR)*** box:

  The IVR ports load broadcast is only used to refresh the IVR ports load histograms in the M5000 CC Media Server and M5000 CC Wall Display applications.

  - ***{Broadcast period}*** (m): this value of between 1 and 60 minutes, must be an integer and is the broadcast frequency and the time for the calculation of the average values.

4.21.2 UPDATE CLIENTS

- Select **[Properties]** from the M5000 CC Wall Display application's **[File]** menu to open the **"Properties"** window: Click the **{Update periods}** tab, then click ***[OK]*** when all the parameters have been configured:

  - ***{Server and Call Server real-time statuses}*** box:

    In the ***{Time between two consecutive update(s)}*** field, enter the time between two consecutive updates for the monitoring windows that are updated automatically. This same value is used for all the monitoring windows:

    - Agents' Extensions window,
    - Clients' extensions window,
    - The view Runs windows (one window is available for each connected M5000 CC Media Server)
    - M5000 CC Media Server Status window (one window is available for each M5000 CC Media Server connected).

    Note: *The value of this parameter must be between 5 and 60 seconds.*

  - ***{Clients update after project modification}*** box:

    In the ***{Time between two consecutive updates}*** box, enter the time between two consecutive updates of clients after a project modification (carried out in the M5000 CC Service Manager application). This parameter allows the M5000 CC Server application to update its clients asynchronously after a script modification in order to allow client updates to be spread over time. "Spread over time" means that the scripts are loaded asynchronously by the client applications but the new script becomes the active script at the same time for all of them (provided all the applications load the script). This parameter defines the time between each client update.

  Note: The value of this parameter must be between 0 and 60 seconds. Its default value is 5 seconds. If a value of 0 is set for this parameter, the client updates are done synchronously (all at the same time).

4.22 UPGRADING AN EXISTING INSTALLATION

A distinction must be made between M7480 releases 3 and 4. During an update, proceed as indicated in the next paragraphs.

4.22.1 CHANGING FROM M7480 V3 TO NCP V1.1 OR HIGHER

Note: As this is a tricky operation, it is advisable to contact technical support first to check all project compatibilities.

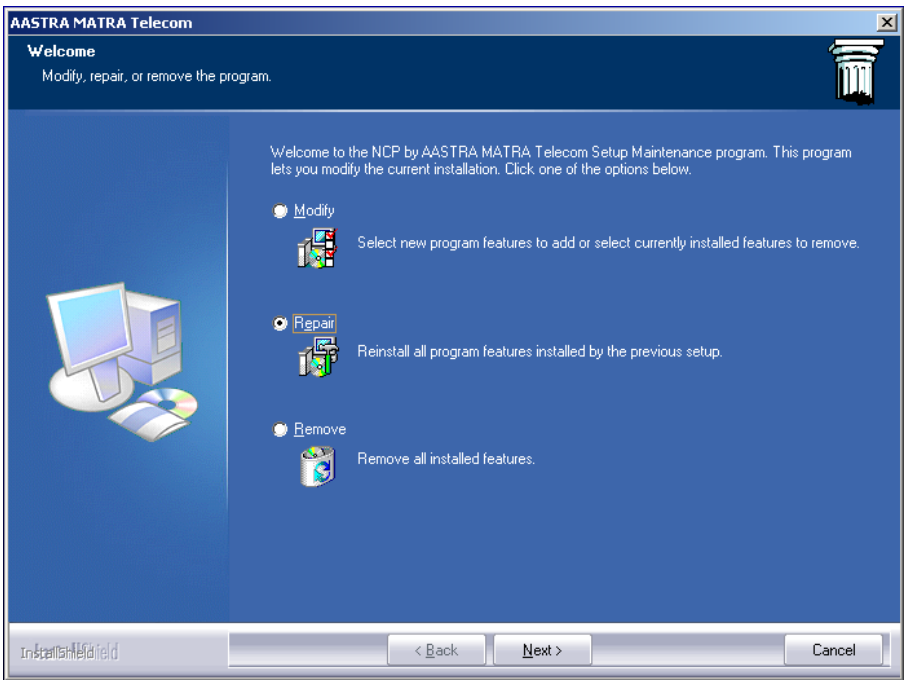
Migrating from release **M7480 V3** (TAPI configuration) to **NCP V1.1**:

- using the **"Upgrade.exe"** application on the installation DVD, first back up the M5000 CC File Structure.
- Fully uninstall the 7480 applications.
- Fully install the new M5000 CC system (see section 4).

4.22.2 Upgrading release 4

Carry out the upgrade as follows:

- First open a windows session on the Server PC with M5000 CC administrator rights (see administrator declaration in section 4.2.2.2).
- Insert the M5000 CC installation DVD in the drive: the **"M5000 CC Setup"** window opens automatically. If the window does not open, read the DVD contents from Windows explorer and double click the **"Setup.exe"** icon.
- In the **"M5000 CC Setup"** window, click the icon corresponding to the desired installation language ***[English]***, then click ***[Continue]***. A **"Generic Home page"** window opens.
- Click the ***[Software Installation]*** icon.
- Click the ***[M5000 CC]*** icon.
  The following window opens:



- Check the ***[Repair]*** option in order to upgrade the application, then click ***[Next>]***.
- Follow the installation steps detailed in section 4.6.

4.22.3 MIGRATING FROM M7480 V3 TO NCP V1.1 OR HIGHER

Since the media server configuration is no longer defined via the file callserver.isc but via the M5000 CC Wall Display application interface, a mechanism for loading the data contained in this file has been implemented so as not to be obliged to manually transfer the information contained in this file to the M5000 CC Wall Display application.

Moreover, for reasons of clarity and simplicity, managing the start of media server in service mode as was formerly the case in release V4 has been modified; in NCP V1.1 it is integrated into the more global media server interface management in the M5000 CC Wall Display application. When the file structure is updated in NCP V1.1, a default configuration is created in it for each “Remote media server” defined in releases earlier than NCP V1.1.

For data to be transferred from the file callserver.isc, the call server must be started in manual mode. In fact, an interactive window asks the user if he or she wishes to update his or her configuration. After the file callserver.isc is updated, the transfer mechanism may be executed:

The call server loads all the necessary information contained in the file callserver.isc.

If any of them is not valid, the server start process is interrupted, and the user is prompted to modify the incorrect parameters.

After being loaded, this data is transferred to the M5000 CC Server which then makes it accessible via the M5000 CC Wall Display application.

The file callserver.isc is then finally renamed to callserver.old. This file will no longer be used.

If while this data transfer tool is being executed the administrator has already defined the media server via the M5000 CC Wall Displayapplication, or if the administrator has modified a default configuration created already for this media server, this configuration will not be overwritten by the one contained in callserver.isc.

During the installation (update) of the version on a PC on which a media server is installed, the user will be asked to enter the access path for the file structure which will be used by the media server to connect to the M5000 CC Server during each start operation. This path may later be modified via the registry of the PC on which this media server is running. This path is save in: "HKEY_LOCAL_MACHINE \ Software \ Dialog Systems \ Agora \ general Information \ Agora Files Structure". Just change the content of this key to point the media server to another file structure.

4.22.4 MIGRATING FROM NCP V1.1 TO M5000 CC V3.3 OR HIGHER

To install the new functions offered by releases above NCP 1.1, first run Setup in Repair mode to update existing components.

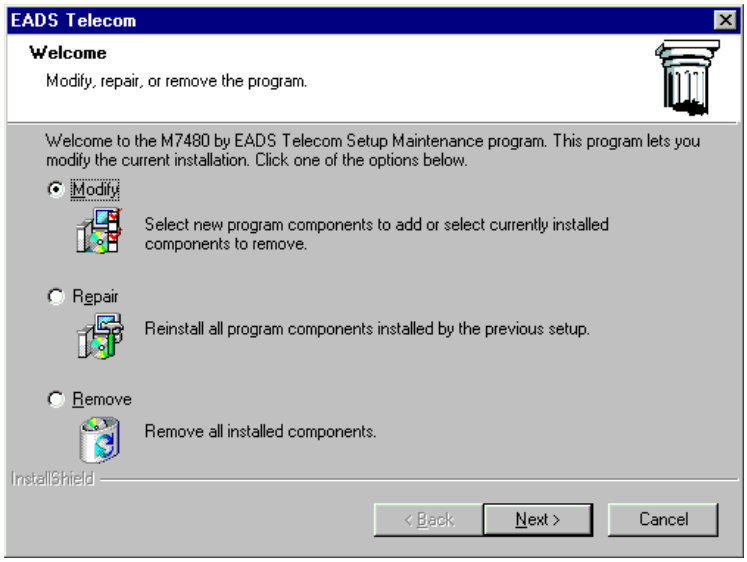
Then restart Setup in Modify mode to add the new functions (for instance, the SQL sever for directories in M5000 CC) offered for releases above NCP 1.1.

4.23 INSTALLATION MAINTENANCE MODE

Note: Do not confuse "installation maintenance mode" for the software and "maintenance mode" (also called "night mode") for the M5000 CC Server application.

The Setup program lets you rerun the setup either to change application features, or reinstall or remove the application.

- From the Control Panel, select the **[Add/Remove Programs]** icon. Run setup in "Maintenance Mode"
- Check one of the 3 options concerned:
  - ***[Modify]*** to install individual components not yet installed or remove installed components,
  - ***[Repair]*** to reinstall your application with the settings selected during the first installation.
  - ***[Remove]*** to uninstall the application.
- Click ***[Next>]***, then follow the instructions in the sequence of windows:



4.24 USING THE TRACKING TOOLS

Using tracking messages in certain M5000 CC applications requires the “Stream Catcher” application to be installed and configured.

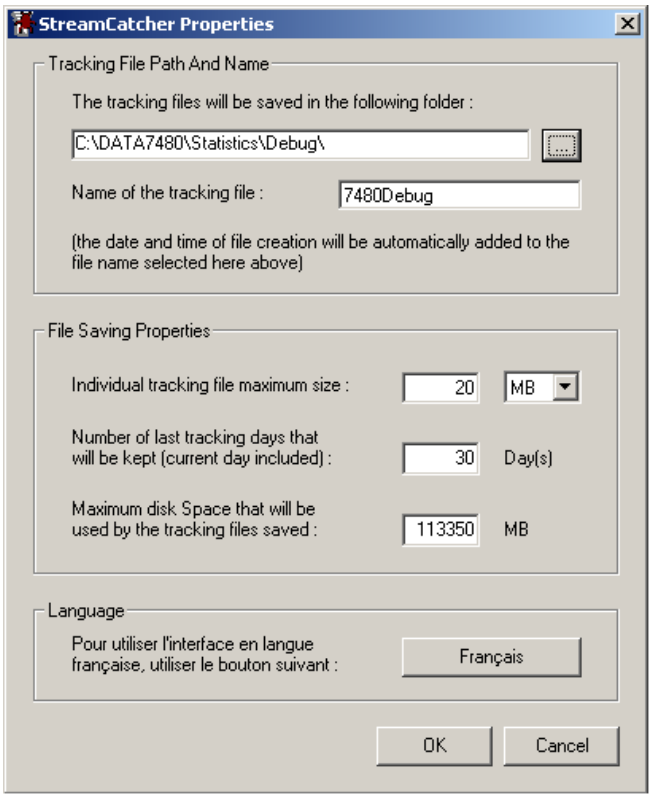
Setup installs this tool automatically with the M5000 CC Server, M5000 CC Media Server, M5000 CC Report Server and M5000 CC Portal.

If you wish to install it manually, you can proceed as described below.

4.24.1 INSTALLING THE "STREAM CATCHER" APPLICATION

Note: Run the **"Stream Catcher"** application before starting the tracking tool for the M5000 CC Server and M5000 CC Media Server applications.

- Search on the installation DVD for the directory **"Sofware\M5000 CC\tools\StreamCatcher"**.
- Copy this directory to the PC and run the **"StreamCatcher.exe"** application.
- Right-click the  icon and select **[Properties]**. The **"StreamCatcher Properties"** window opens:



- To use the interface in English language, click ***[English]***.
- Define in the fields of this window:
  - the maximum size of a tracking file
  - the number of days the trace will be kept for
  - the maximum disk space to be used.
- Click ***[Validate]***.
- Right-click the  icon and select **[Enabled]**.

4.24.2 USING TRACKING MESSAGES

To enable M5000 CC Server and/or M5000 CC Media Server tracking:

- Select **[Server]**or **[Media server]** from the M5000 CC Wall Display application's **[Tracking message]** menu.
- Choose the tracking type (by default all the tracking types are enabled).

4.25 INSTALLATION WITH PC ANYWHERE (OPTION)

Proceed as follows:

- Close all applications currently running on the server PC and all NT services including M5000 CC and PCanywhere if the latter was already installed.
- Uninstall the modem (if installed)

Note: In Windows 2000, the Remote Access Autoconnection Manager and Remote Access Connection

Manager services must be set to "Disable". All telephony applications may also have to be removed (PC anywhere, modem, Dialogic® driver, IP or V24 gateway, etc.} in order to clear the registry.

- Reboot the PC.
- From the ***[Start] [Execute...] menu*** , run **regclean.exe**, then click **[OK]**.
- Restart the PC again and check it for basic operation, missing services and missing communication devices (modem, etc.) and uninstalled programs (including directories, register branches, registered services, etc.)
- Reinstall all applications **according to the sequence below** (making sure at each step that they are suitably configured and that they are operating both correctly individually and in conjunction with the other applications):
  - Dialogic® card (as necessary) and Dialogic® Driver release 5.1.1 (see Section 4.4),
  - M5000 CC (see Section 4.6)
  - modem,
  - PC anywhere.
- Restart the PC at the end of each configuration.

If there are problems with conflicting IRQs, try selecting another IRQ.

4.26 MAIL SERVER CONFIGURATION (E-MAIL)

The M5000 CC Server interacts directly with the mail server using standard communication protocols: IMAP and SMTP.

4.26.1 CONFIGURING DOMINO

The IBM / Lotus Domino mail server is supported by M5000 CC for the e-mail media via the definition of a Standard profile.

4.26.1.1 USER PARAMETERS

Define a Domino account for each user whose mailboxes and folders the M5000 CC must access.

- Open the user definition form via the menu ***[People & groups / Domino directories]***.
- Define a user.
- Specify an internet password. This is need to handle e-mails using IMAP.
- Open the properties of the new user's database via the menu ***[Files / Mail / Properties]***.
- Create an index on the database in which the mails of the previously defined user are stored. This is needed to make searches by message date so as to delete the oldest ones.

4.26.1.2 GENERAL PARAMETERS

IMAP must be enabled.

- In the menu [Configuration / Current Server Document], enable IMAP in the internet ports

To send messages (to forward or answer a message), SMTP relay must be authorised.

- In the [Configuration] tab, select [Server > Configuration] and open the Domino server configuration document.
- Select the [Router / SMTP] tab, then [Restrictions and Controls] and finally [SMTP Inbound Controls].
- Add (in square brackets) the IP address of the PC on which the M5000 CC Server is installed in the {Allow messages only from the following internet hosts to be sent to external internet domains} area.
- Reboot the Domino server.

4.26.2 Microsoft Exchange 2013

4.26.2.1 STUNNEL APPLICATION INSTALLATION

The application stunnel (**https://www.stunnel.org/index.html**) allows to encrypt the IMAP and SMTP communications between M5000 CC and Exchange 2013 using SSL and TLS protocols.

To install:

- Download the application (stunnel-X.XX-installer.exe): **https://www.stunnel.org/downloads.html**
- Execute the installation on M5000 CC Server.
- Install the stunnel service using the following command in a "Command Prompt" window:
  - on 64 bits OS:

    "c:\Program Files (x86)\stunnel\stunnel.exe" -install
  - on 32 bits OS:

    "c:\Program Files\stunnel\stunnel.exe" -install
- Edit the configuration file *stunnel.conf* in the directory where stunnel has been installed:
  - Delete all examples in the section "Service definitions" (pop3s, imaps, ssmtp...)
  - Add the 2 following services in the section "Service definitions" replacing *srv-exch-2013.mitel-lab.be* by the name of the Exchange server or its IP address.

    [srv-exch-2013-imap]
    client = yes
    accept = 127.0.0.1:143
    connect = srv-exch-2013.mitel-lab.be:993
    [srv-exch-2013-smtp]
    client = yes
    accept = 127.0.0.1:25
    connect = srv-exch-2013.mitel-lab.be:465
    protocol = smtp
- Start stunnel service

4.26.2.2 ENABLE IMAP4 IN EXCHANGE 2013

Reference: **http://technet.microsoft.com/en-us/library/bb124489%28v=exchg.150%29.aspx**

On the computer running the Client Access server role:

- In the Services snap-in, in the console tree, click **Services (Local)**.
- In the result pane, right-click **Microsoft Exchange IMAP4**, and then click **Properties**.
- On the **General** tab, under **Startup type**, select **Automatic**, and then click **Apply**.
- Under **Service status**, click **Start**, and then click **OK**.

On the computer running the Mailbox server role:

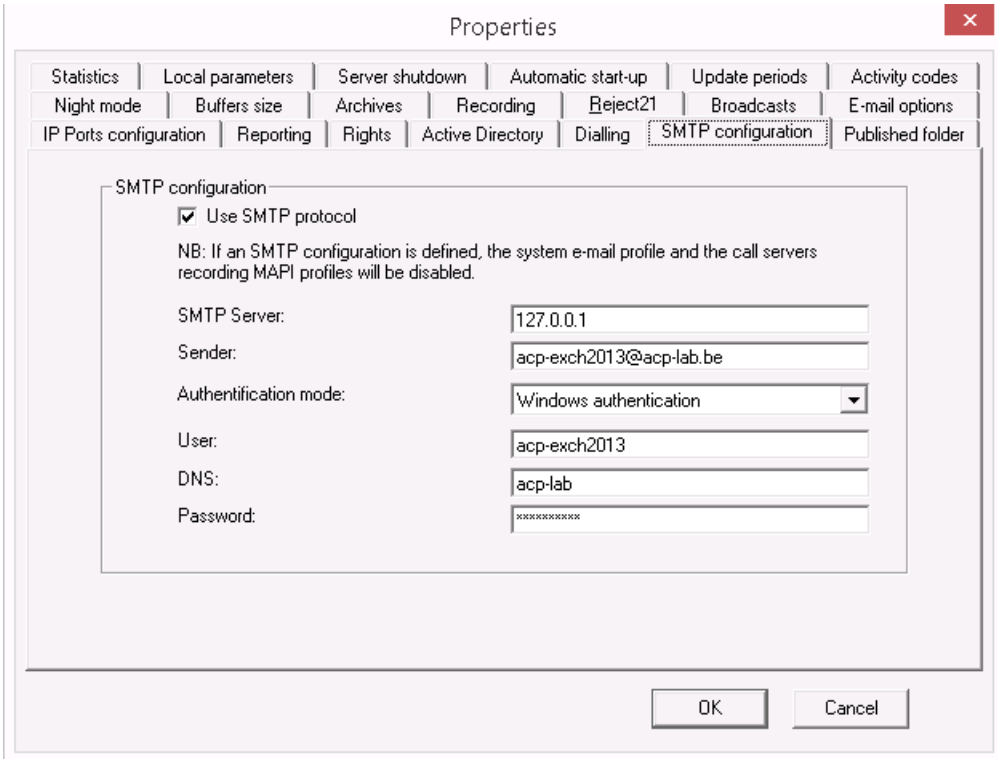
- In the **Services** snap-in, in the console tree, click **Services (Local)**.
- In the result pane, right-click **Microsoft Exchange IMAP4 Backend**, and then click **Properties**.
- On the **General** tab, under **Startup type**, select **Automatic**, and then click **Apply**.
- Under **Service status**, click **Start**, and then click **OK**.

4.26.2.3 M5000 CC CONFIGURATION

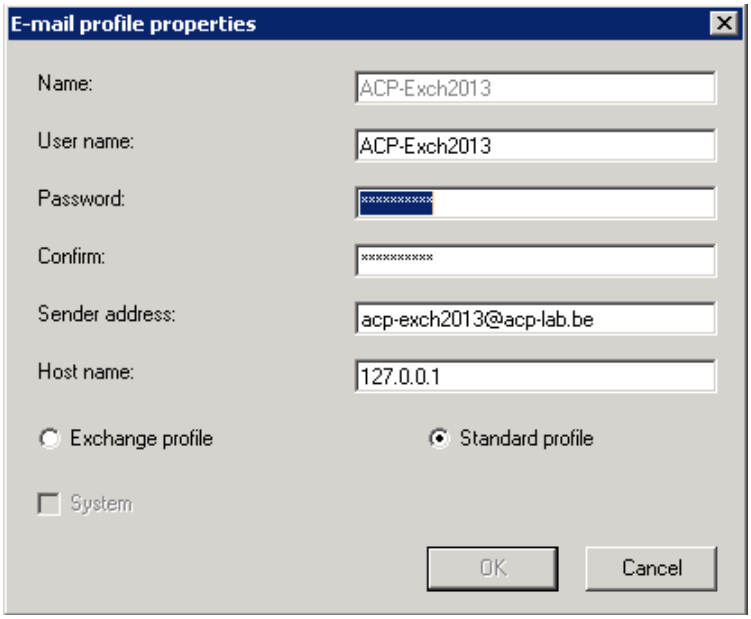
In **M5000 CC Administrator** application, it's necessary to configure SMTP server and IMAP profile:

- Configure the SMTP connection (menu **Files** -> **Properties...** -> tab **SMTP Configuration**) as below, replacing the sender with the SMTP address of the account configured for M5000 CC in Exchange server.

Check that the SMTP Server address is set to 127.0.0.1



- Configure the IMAP profile (menu **View** -> **E-mail Profiles**) as below replacing the user name, password and sender address with the properties of the account configured for M5000 CC in Exchange server. Check that the host name is set to 127.0.0.1



Then it’s possible to configure an "Email" service as usual.

4.26.3 Office 365

4.26.3.1 STUNNEL APPLICATION INSTALLATION

The application stunnel (**https://www.stunnel.org/index.html**) allows to encrypt the IMAP and SMTP communications between M5000 CC and Office 365 using SSL and TLS protocols.

To install:

- Download the application (stunnel-X.XX-installer.exe): **https://www.stunnel.org/downloads.html**
- Execute the installation on M5000 CC Server.
- Install the stunnel service using the following command in a "Command Prompt" window:
  - on 64 bits OS:
    "c:\Program Files (x86)\stunnel\stunnel.exe" -install
  - on 32 bits OS:
    "c:\Program Files\stunnel\stunnel.exe" -install
- Edit the configuration file *stunnel.conf* in the directory where stunnel has been installed:
  - Delete all examples in the section "Service definitions" (pop3s, imaps, ssmtp...)
  - Add the 2 following services in the section "Service definitions":

```
[office365-imap]
client = yes
accept = 127.0.0.1:143
connect = outlook.office365.com:993

[office365-smtp]
client = yes
accept = 127.0.0.1:25
connect = smtp.office365.com:587
protocol = smtp
```

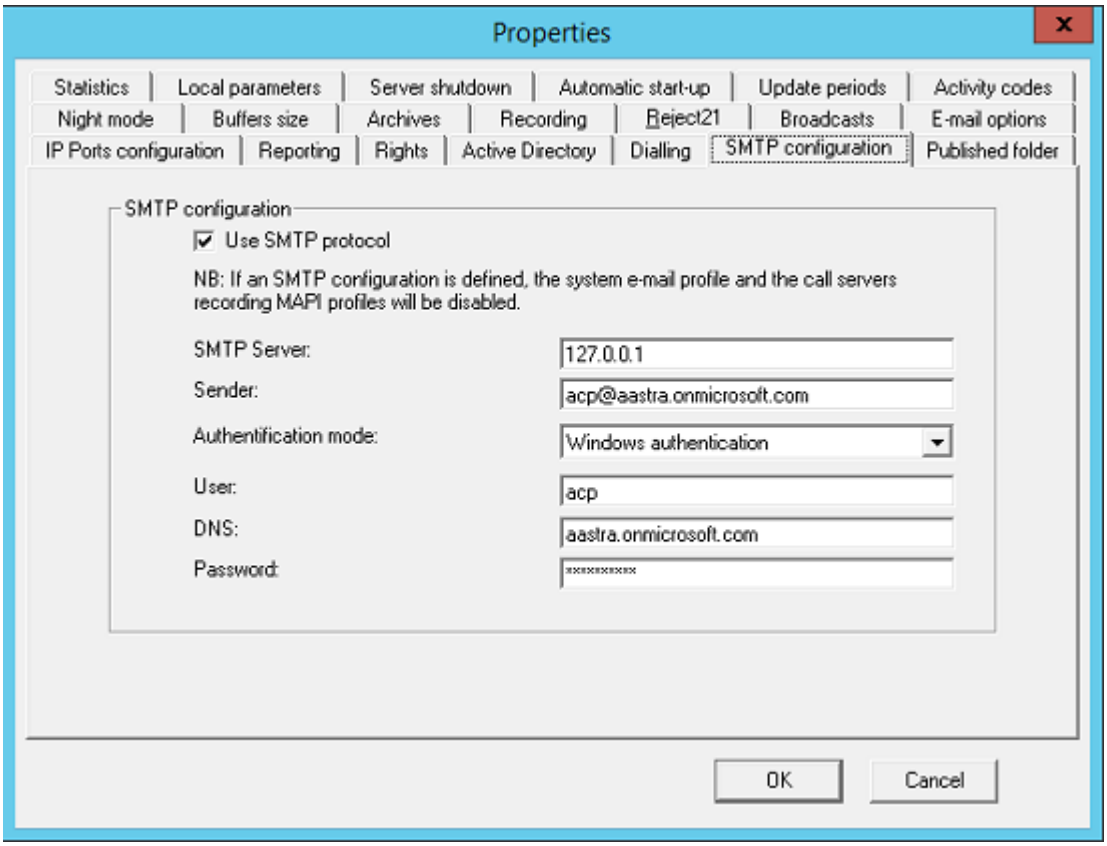
- Start stunnel service

4.26.3.2 M5000 CC CONFIGURATION

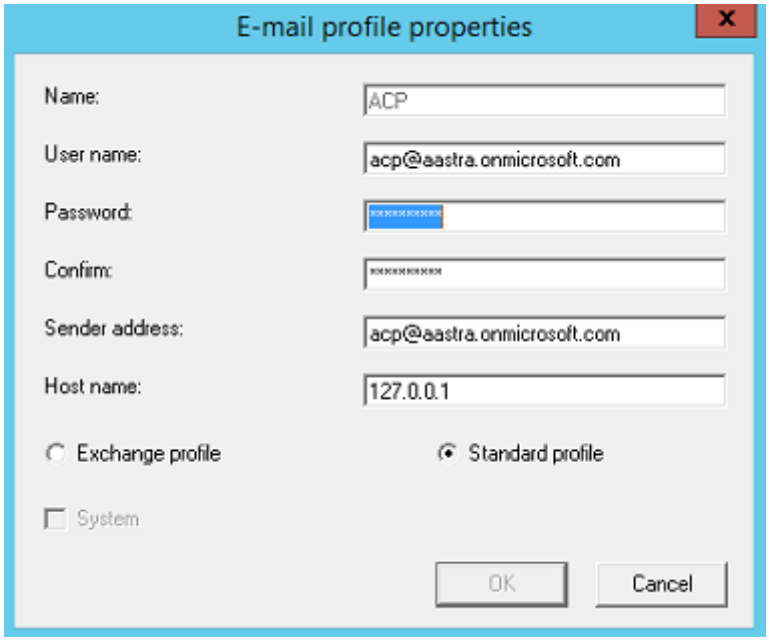
In **M5000 CC Administrator** application, it's necessary to configure SMTP server and IMAP profile:

- Configure the SMTP connection (menu **Files** -> **Properties...** -> tab **SMTP Configuration**) as below, replacing the sender with the SMTP address of the account configured for M5000 CC in Office 365. Check

that the SMTP Server address is set to 127.0.0.1



- Configure the IMAP profile (menu **View** -> **E-mail Profiles**) as below replacing the user name, password and sender address with the properties of the account configured for M5000 CC in Office 365. Check that the host name is set to 127.0.0.1



Then it's possible to configure an "Email" service as usual.

4.27 CONFIGURING THE MAIL AND COLLABORATION SERVER

4.27.1 LOTUS DOMINO

Note: This chapter contains some configuration instructions for Domino 8. To perform the corresponding operations on Domino 7, refer to the documentation on Domino.

4.27.1.1 STARTING THE DIIOP TASK

M5000 CC uses the (Java / CORBA based) "Notes Client-Side Objects" (NCSO) component of Domino to obtain directory and calendar data. For this component to be used, the DIIOP task must be started on the Domino server.

To manually start the DIIOP task, use the following command in the Domino server console:

- **`load diiop.`**

To restart after changing the configuration, use the command

- **`restart task diiop`**

To automatically start the DIIOP task when the Domino server is started (recommended configuration) proceed as follows:

- Open the file "NOTES.INI" in the Domino installation folder.
- Locate the line starting with the following string:
  `ServerTasks=`
- Create this line if it does not exist. Then check that the following value is added at the end of the line (if it is not already there):
  `diiop`
- Back up and close the file.
- Reboot the Domino server.

4.27.1.2 NETWORK CONFIGURATION FOR DIIOP

To check the current configuration of the DIIOP task, especially the network parameters, use the following command in the Domino server console:

- **`tell diiop show config`**

If the fields "Host Address" and "Public Host Name / Address" are incorrect, change them as follows:

- In the Domino Administrator application, open the **[Configuration]** tab.
- In [Server], select **[Current Server Document]**.
- Click the **[Internet Protocols…]** tab then the **[DIIOP]** tab.
- In the ***{Host name/Address}*** field, specify the IP address through which the server is known for DIIOP.

To modify and activate the TCP port on which the DIIOP task accepts connections, proceed as follows:

- In the Domino Administrator application, open the **[Configuration]** tab.
- In **[Server]**, select **[Current Server Document]**.
- Open the **[Ports…]** tab.
- In the **[Internet Ports…]** tab click the **[DIIOP]** tab.
- Specify the port to use in the ***{TCP/IP port number}*** field (63148 by default).
- Set the **{TCP/IP port status}** field to **Enabled**.
- Set ***{Name & password}*** in **[Authentication options]** to **Yes**.

4.27.1.3 SSL ENCRYPTION

M5000 CC can communicate with Domino by using encrypted transmissions for DIIOP tasks, using SSL (Secure Sockets Layer). For this, it is necessary to install a common, trusted certification authority on the server and client.

- Open the database "Server Certificate Admin" (certsrv.nsf) on the Domino server, then use its forms to create and fill in a key ring.
- Two files are created in the process: a key ring file (KYR file) and an STH file. Move these files to the data folder in the Domino server installation directory.

After this, the SSL port can be activated in the Domino configuration.

- In the Domino Administrator application, open the **[Configuration]** tab.

- In **[Server]**, select **[Current Server Document]**.
- Open the **[Ports…]** tab.
- Click the **[Internet Ports…]** tab.
- Assign the ***{SSL key file name}*** field to the previously generated key ring file (extension KYR).
- Open the **[DIIOP]** tab.
- Specify the port to use in the ***{SSL port number}*** field (63149 by default).
- Set the ***{SSL port status}*** field to **Enabled**.
- Set ***{Name & password}*** in **[Authentication options]** to **Yes**.

Note: The TCP/IP port of the DIIOP task (63148 by default) must always be activated.

- Start or restart the DIIOP task using the following command in the Domino server console:
  `restart task diiop`
  A file called "TrustedCerts.class" is then automatically created in the Java folder of the Domino server.
- Use the M5000 CC installation program to (re)create the Domino directory connector. In the right phase, select the folder in which the files "NCSO.jar" and "TrustedCerts.class" are located in the Domino server directories. These two files must be located in the same folder.
  Note: if the Domino directory connector is already installed, you must re-create it by performing an M5000 CC installation repair.

4.27.1.4 ROAMING

By default, the private directory of each Notes user is stored on his or her computer. For M5000 CC to access a private directory, it is necessary to authorise roaming for the corresponding users.

- In the Domino Administrator application, open the **[People & Groups]** tab.
- Select the user(s) who may use roaming.
- In the toolbar, click **[Roaming…]**.
- In the **[Assign Roaming Profiles]** window, modify the parameters if necessary, then click **[OK]**.

4.27.1.5 MANAGING ACCESS RIGHTS

All the data required by M5000 CC is stored in Domino databases. In M5000 CC, these requests are made with the identity of a Notes user whose identifier and password are configured in a directory or M5000 CC calendar server.

Notes users' Domino database access rights are managed with the Domino Administrator application.

- In the Domino Administrator application, open the **[Files]** tab.
- Browse through the folders up to the database to which the access rights must be assigned.

The Domino global directory is contained in the file "names.nsf" of the "data" folder.

By default, the private directory of a mobile user is contained in the file "names.nsf", located in the directory "data\roaming\<user>".

A Notes user's private calendar is contained in this user's mail database, in a file "<user>.nsf", located by default in the folder "data\mail".

4.27.1.6 CONFIGURING LOTUS NOTES

When Lotus Domino is used as calendar server, the presence status of each contact depends on

- the user's calendar input
- and the availability periods configured for this user.

4.27.1.6.1 CALENDAR INPUTS

When an input is made in a Lotus Notes user's calendar, the user is considered by default as busy during the corresponding period.

However, if a calendar input is marked as **available**, this is not taken into account while checking whether the user is idle or busy. Only the availability periods (see below) are taken into account.

Moreover, calendar inputs marked as **private** are not visible to other Notes users. This is especially the case for Notes users configured in an M5000 CC calendar server.

4.27.1.6.2 PERIODS OF AVAILABILITY

By default, a Lotus Notes user is only available for meetings on working days and office hours. These periods can be configured using Domino Administrator, but also from Lotus Notes.

To modify the periods of availability in Lotus Notes, use the options page **[File]** > **[Preferences…]** > **[Calendar & To Do]**.

4.27.2 MICROSOFT EXCHANGE

4.27.2.1 OUTLOOK WEB ACCESS

To obtain directory and calendar data, M5000 CC requires the activation of Outlook Web Access on the Exchange server.

To check the Calendar Server configuration, it is possible to make a manual request to Outlook Web Access to display a contact's calendar.

- Open a web browser.
- Enter the URL provided using the above configuration parameters, as follows:
  http://<Server>/<Public directory name >/<Contact name>/<Calendar directory path>
  For example:
  http://exchange.mycompany.com/exchange/durand/calendrier
  If the specified contact’s directory appears, the configuration is correct.

4.27.2.2 MANAGING ACCESS RIGHTS

To access a contact’s private calendar from M5000 CC, the user whose identity is used to send requests to the Exchange server must first receive a read access right for the target calendar.

Depending on the M5000 CC calendar server configuration, this user is either the portal user or a specific Windows user.

Access rights for an Exchange user’s calendar can be assigned in two ways:

- From the **Active Directory Users and Computers** management console
- From Outlook, using the **[Tools]** > **[Options]** > **[Delegates]** tab

4.27.3 MICROSOFT EXCHANGE 2007

4.27.3.1 OUTLOOK WEB ACCESS

To obtain directory and calendar data, M5000 CC requires the activation of Outlook Web Access on the Exchange server.

To check the Calendar Server configuration, it is possible to make a manual request to Outlook Web Access to display a contact's calendar.

- Open a web browser.

Enter the URL provided using the above configuration parameters, as follows:
http://<Server>/<Public directory name >/<Contact name>/<Calendar directory path>
For example:
http://exchange.mycompany.com/exchange/durand/calendrier
If the specified contact’s directory appears, the configuration is correct.

4.27.3.2 AUTHENTICATION CONFIGURATION IN M5000 CC

To access a contact’s private calendar / directory from M5000 CC, the user whose identity is used to send requests to the Exchange 2007 server must first receive a read access right for the target calendar / directory.

The account to be used by M5000 CC server to perform the query to the Exchange server is configured in the Administrator application. For calendars, the authentication is configured in the calendar server definition and for directories, the authentication is configured in the connector properties.

There are four types of authentication available:

-NTLM

-Negotiate: when "Negotiate" is selected, Kerberos protocol will be used in first for authentication. If the authentication using Kerberos is not possible, NTLM will be selected automatically.

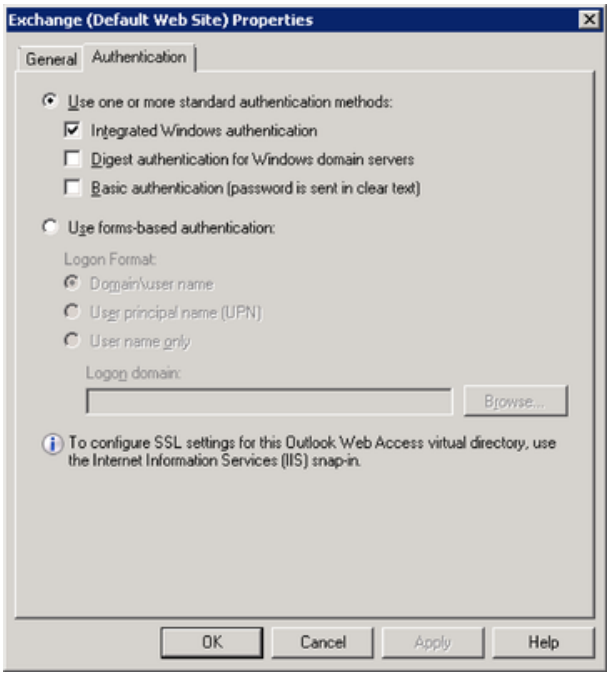
- Form

- -: this authentication type is used for delegation. In such a configuration, the portal user account will be used to perform the query to the Exchange Server.

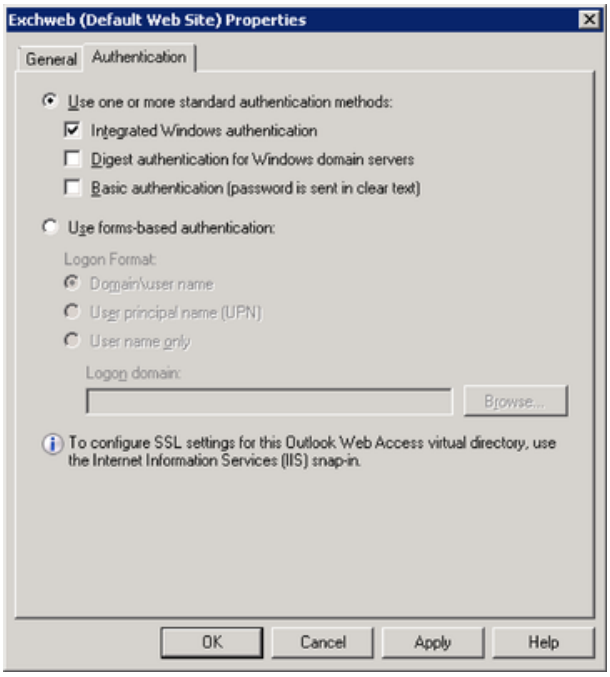
4.27.3.2.1 NTLM/NEGOTIATE

In Exchange Management Console, Microsoft Exchange -> Server Configuration -> Mailbox -> Tab WebDAV, double click on

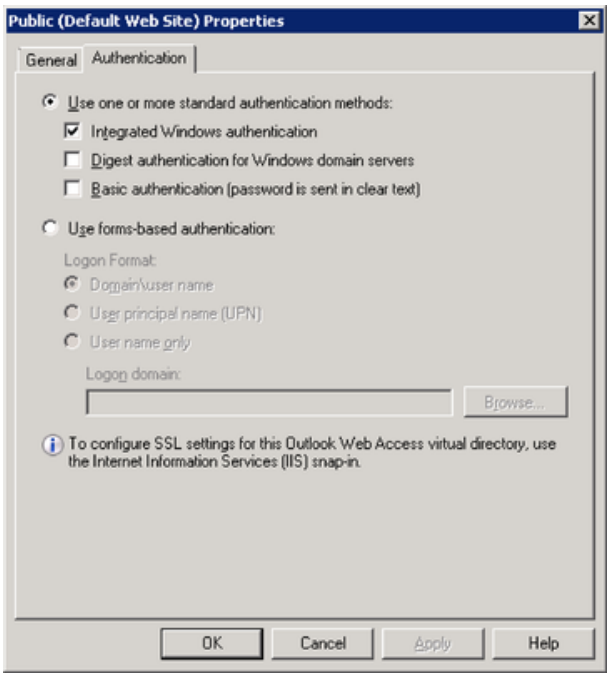
"Exchange (Default Web Site) and select "Integrated Window authentication" in Authentication tab



"Exchweb (Default Web Site) and select "Integrated Window authentication" in Authentication tab



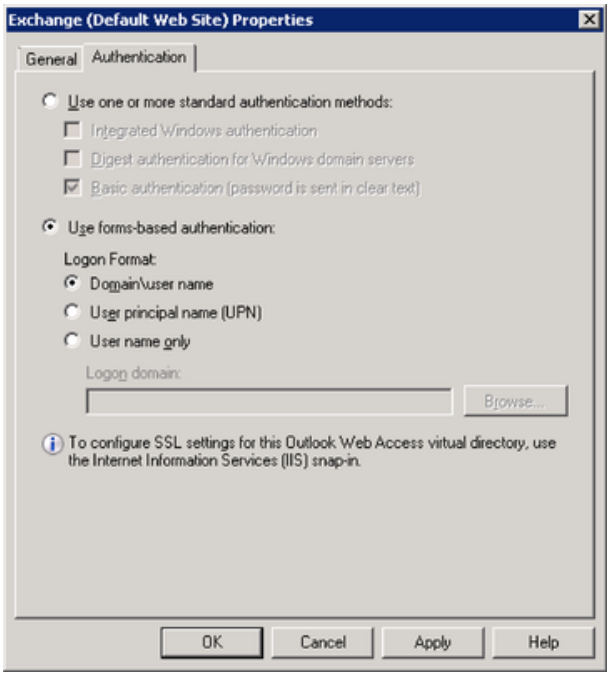
"Public (Default Web Site) and select "Integrated Window authentication" in Authentication tab



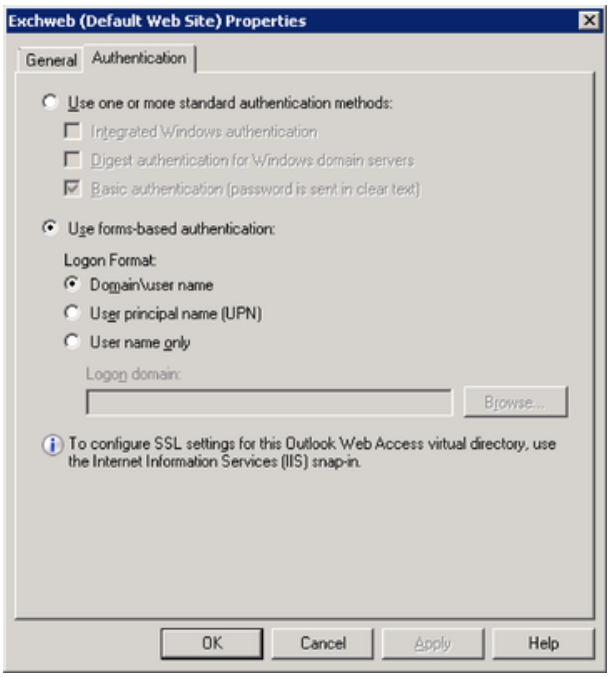
4.27.3.2.2 FORM

In Exchange Management Console, Microsoft Exchange -> Server Configuration -> Mailbox -> Tab WebDAV, double click on

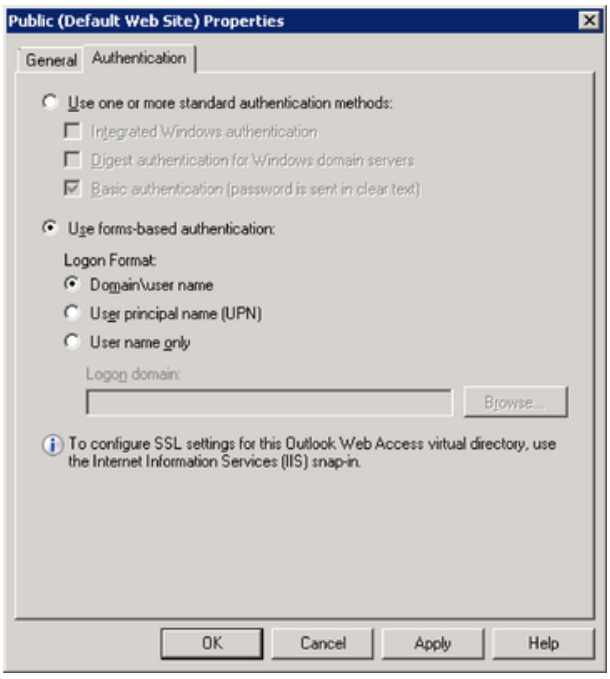
"Exchange (Default Web Site) and select "Domain\user name in Authentication tab



"Exchweb (Default Web Site) and select "Domain\user name in Authentication tab



"Exchange (Default Web Site) and select "Domain\user name in Authentication tab

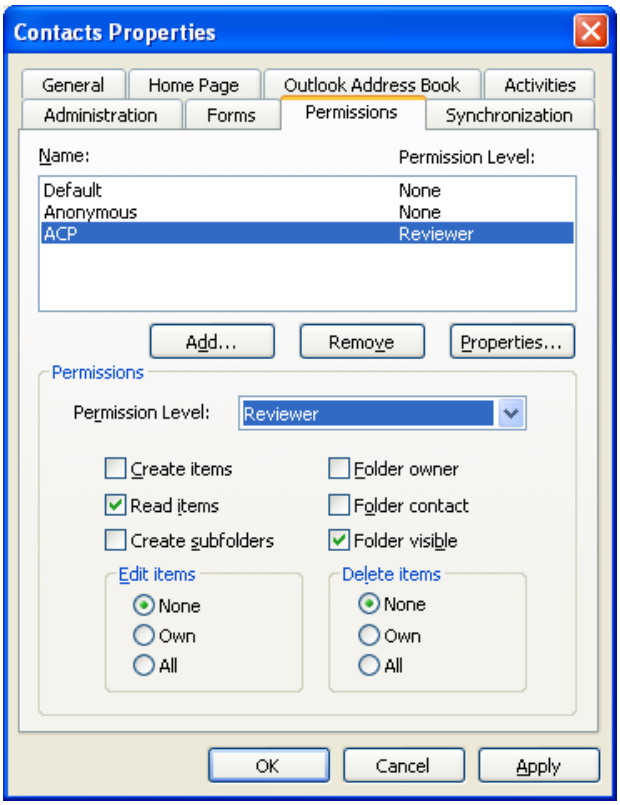


4.27.3.3 EXCHANGE ACCESS RIGHTS CONFIGURATION

Different methods to allow M5000 CC server to access the calendars and contacts of Exchange 2007 users:

4.27.3.3.1 METHOD 1: GIVE ACCESS TO M5000 CC SERVER IN OUTLOOK.

In Outlook, you must right-click the root folder "Mailbox - User Name" and select the "Properties for Mailbox - User Name ...". On the Permissions tab, you must add the account used by M5000 CC to connect to directories / calendars and should select the option Reviewer Permission Level. You must perform the same operation on sub folders containing contacts and calendar entries.



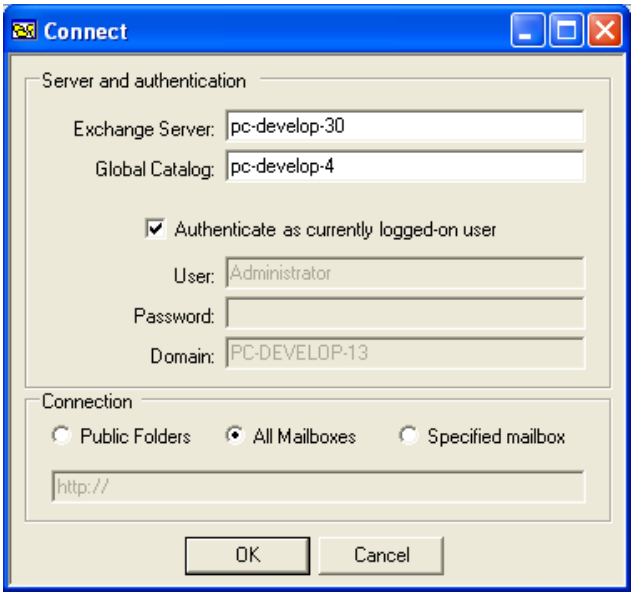
4.27.3.3.2 METHOD 2: GIVING RIGHTS TO THE CALENDAR / CONTACTS FOLDERS OF ALL THE MAILBOXES DEFINED IN THE EXCHANGE SERVER USING THE UTILITY PFDAVADMIN

Download the tool:

http://www.microsoft.com/downloads/details.aspx?FamilyID=635be792-d8ad-49e3-ada4-e2422c0ab424&DisplayLang=en

Install PFDAVAdmin under a PC Workstation (not on the Exchange Server)) where Framework .NET 1.1 is installed.

Start the utility and connect to Exchange server (Menu Files -> Connect):



Give Reviewer rights to the root of all mailboxes for the account to be used by M5000 CC to access the Calendar / Contacts:

"menu Tools -> Custom Bulk Operation

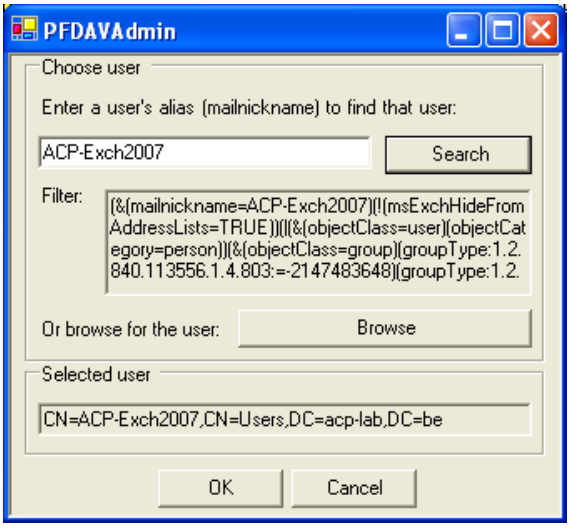
"Enter filter (&(0x3001001E=Top of Information Store)) in Overall Filter

"Click on Add, select option Folder Permission.

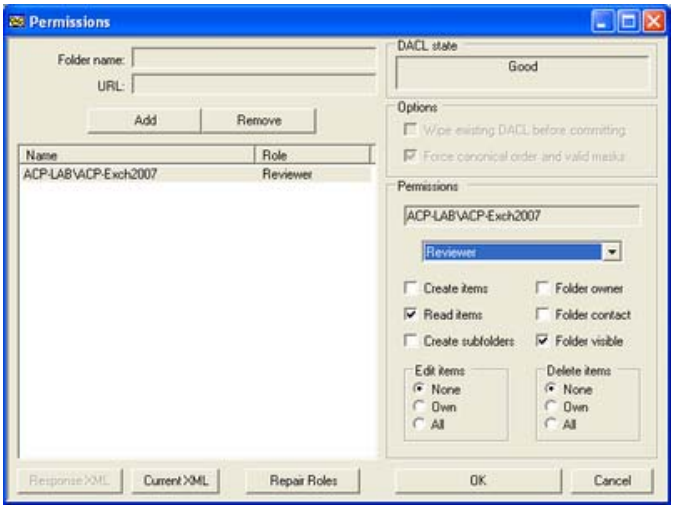
"In window Folder Permissions Op, click on Select

"In window Permissions, click on Add

"Enter Alias of the user used by M5000 CC to access Calendars/Contacts. Click after on Search and check user is well known (in area "Selected user").

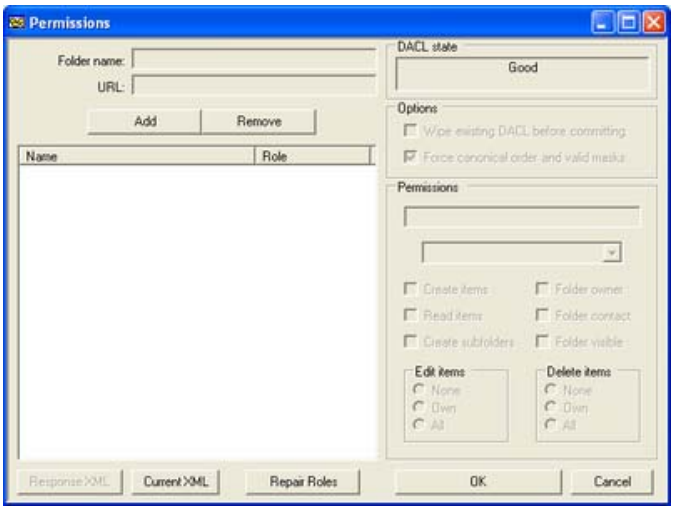


"In window Permission, select Reviewer role

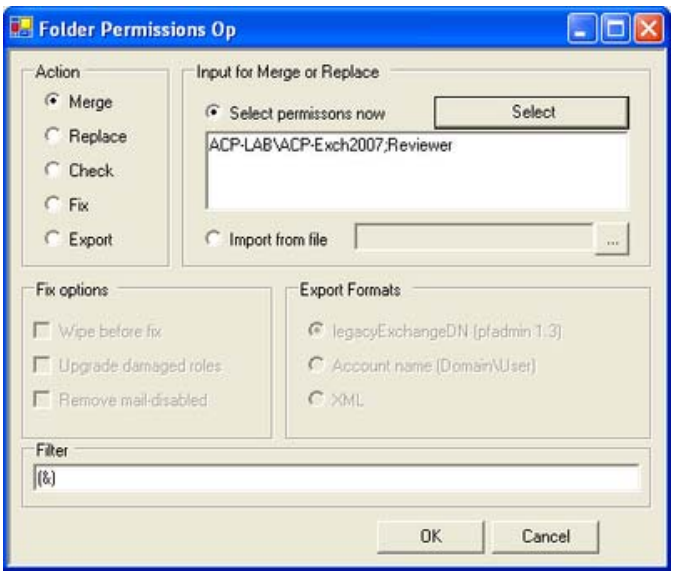


"Click on OK

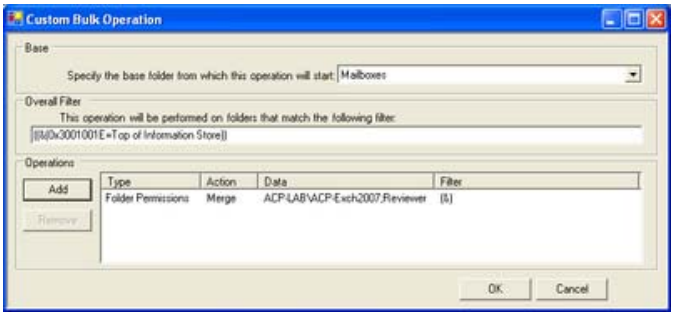
"Click again on OK in the windows allowing the selection of wanted deletion permission



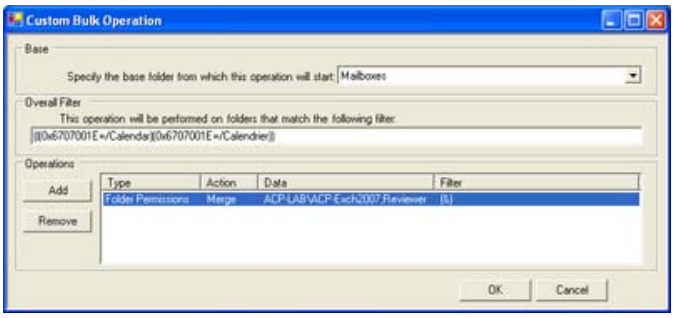
"Click on OK in window "Folder Permissions Op"



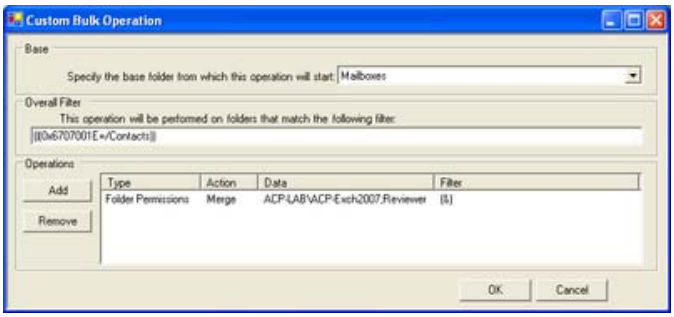
"Click on OK in window "Custom Bulk Operation"



To give the right reviewer on folders containing calendar entries, perform the same operation by using the filter (|(0x6707001E=/Calendar)(0x6707001E=/Calendrier)):



To give the right reviewer on folders containing contact entries, perform the same operation by using the filter (|(0x6707001E=/Contacts)):



4.27.3.3.3 METHOD 3: GIVE THE RIGHT "RECEIVE-AS" ON ALL MAILBOXES IN AN EXCHANGE 2007 SERVER

You have to use Management Shell and enter the command

- **Add-ADPermission -Identity "Mailbox Store" -User "Trusted User" -ExtendedRights Receive-As**

  by replacing "Mailbox Store" by the name of the Database used to save mailboxes and "Trusted User" by the name of the user used by M5000 CC to connect to Exchange.

- **Get-ADPermission -Identity "Mailbox Store" -User "Trusted User"**

  allows to check the given right

- **Remove-ADPermission -Identity "Mailbox Store" -User "Trusted User" -ExtendedRights Receive-As**

  allows to remove right.

You have to wait a few minutes before the modification of rights in Exchange is taken into account (or you have to restart the service "Microsoft Exchange Information Store).

4.27.4 MICROSOFT EXCHANGE 2010

4.27.4.1 WEB SERVICE

To obtain directory and calendar data, M5000 CC requires the activation of web service access on the Exchange server 2010.

To check the web service avaibility, it is possible to make a manual request to it to display its content.

- Open a web browser.
- Enter the URL provided using the above configuration parameters, as follows:
  http://<Serveur>/EWS/Exchange.asmx
  For example :
  http://exchange.mycompany.com/EWS/Exchange.asmx

If the specified page appears, the configuration is correct.

```
xml version="1.0" encoding="utf-8" ?>
dl:definitions xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
xmlns:tns="http://schemas.microsoft.com/exchange/services/2006/messages"
xmlns:s="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.microsoft.com/exchange/services/2006/messages"
xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/"
xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types">
```

4.27.4.2 AUTHENTICATION CONFIGURATION IN M5000 CC

To access a contact's private calendar / directory from M5000 CC, the user whose identity is used to send requests to the Exchange 2010 server must first receive a read access right for the target calendar / directory.

The account to be used by M5000 CC Server server to perform the query to the Exchange server is configured in the Administrator application. For calendars, the authentication is configured in the calendar server definition and for directories, the authentication is configured in the connector properties.

There are three type of authentication available:

-NTLM

-Negotiate: when "Negotiate" is selected, Kerberos protocol will be used in first for authentication. If the authentication using Kerberos is not possible, NTLM will be selected automatically.

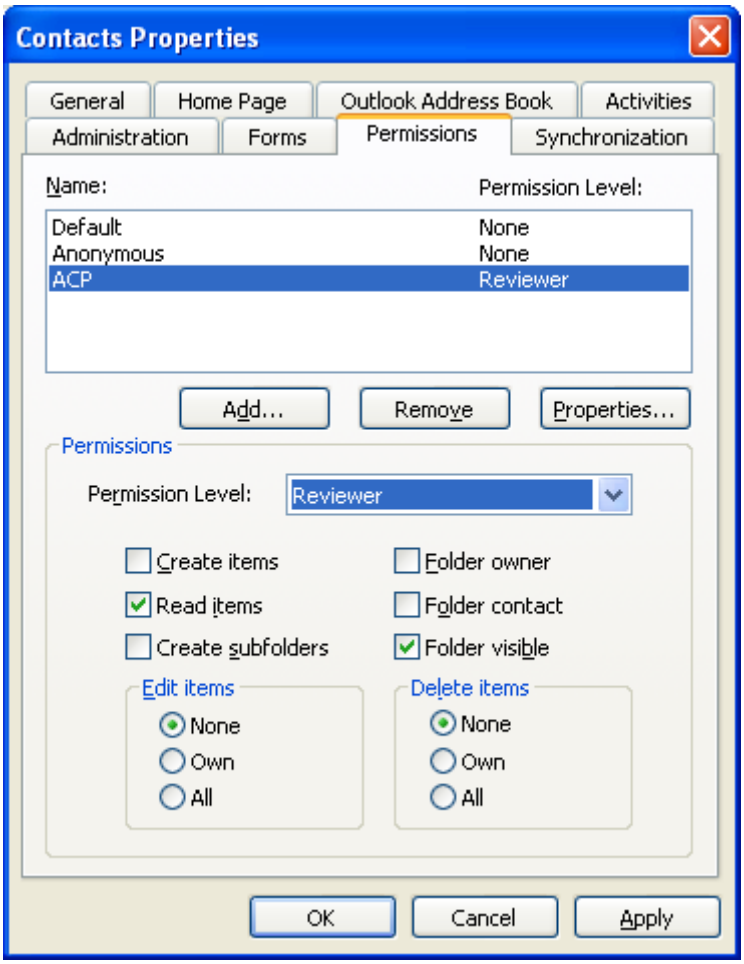
- -: this authentication type is used for delegation. In such a configuration, the portal user account will be used to perform the query to the Exchange Server.

4.27.4.3 EXCHANGE ACCESS RIGHTS CONFIGURATION

Different methods to allow M5000 CC Server to access the calendars and contacts of Exchange 2010 users:

4.27.4.3.1 METHOD 1: GIVE ACCESS TO M5000 CC SERVER IN OUTLOOK.

In Outlook, right click on the root folder "*User email address*" and select the menu "Folder Permissions". On the tab Permissions, add the account used by M5000 CC for the connection to calendars/directories and select Reviewer as Permission Level. The same operation must be performed on the sub folders containing contacts and calendar entries using the contextual menu "Properties...".

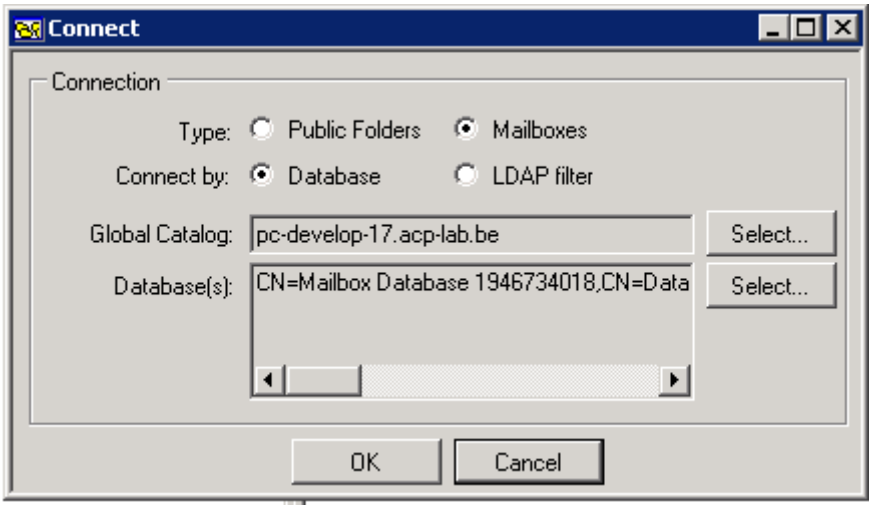


4.27.4.3.2 METHOD 2: GIVE THE RIGHTS ON CALENDAR/CONTACTS FOLDERS FOR ALL EXCHANGE MAILBOXES UNSING EXFOLDERS TOOL.

Download the tool: **http://msexchangeteam.com/files/12/attachments/entry453398.aspx**

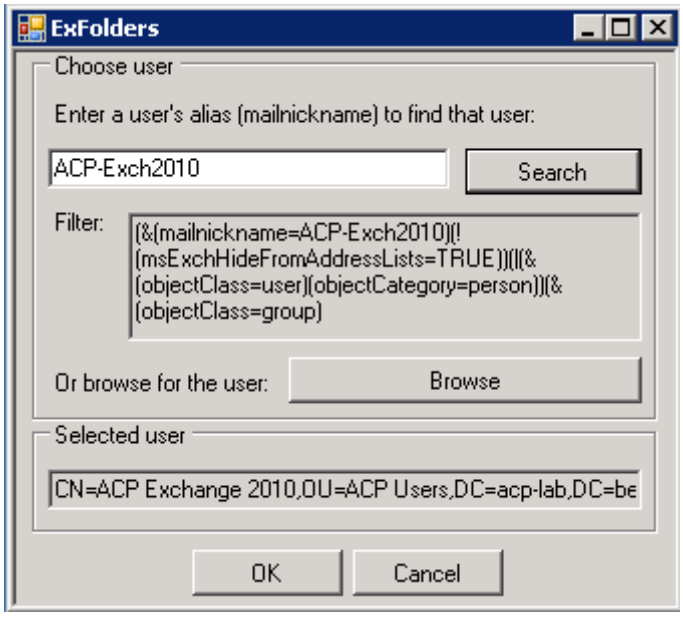
Install ExFolders on Exchange 2010 Server (The instructions for installation are available in the Readme file).

Start the tool and connect to the Exchange Server (Menu Files -> Connect):

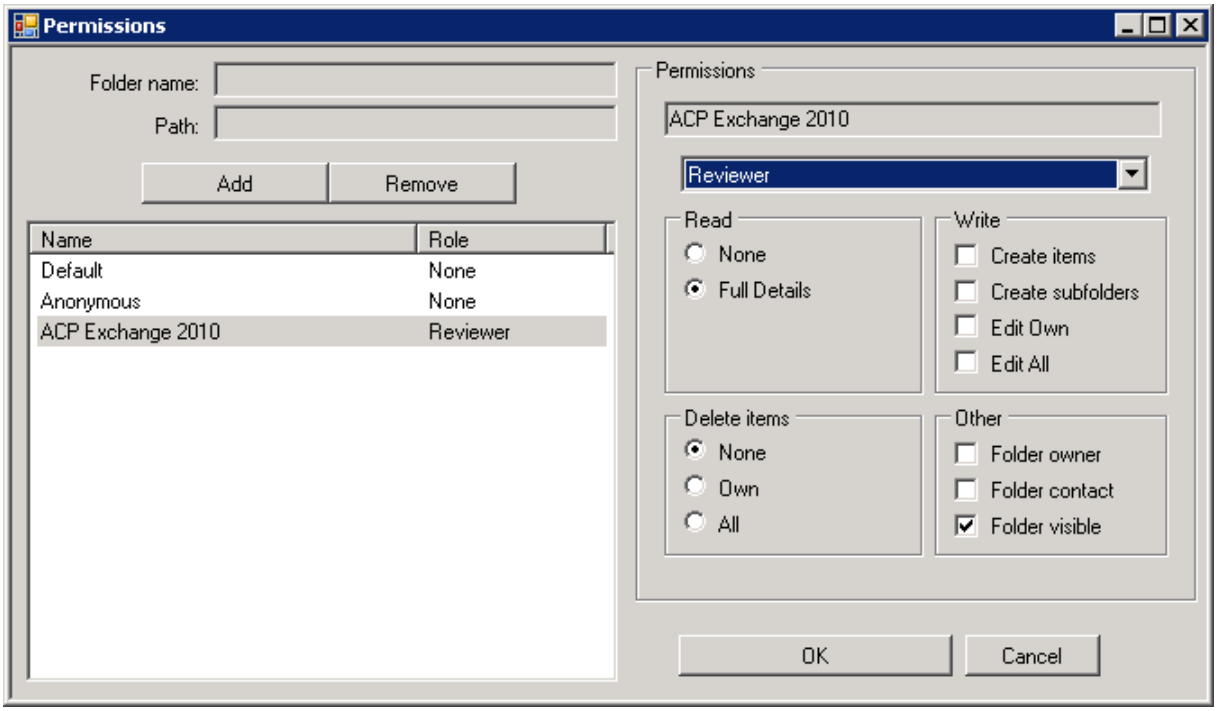


Give the Reviewer right on the root folder of all mailboxes for the account used by M5000 CC to access the Calendars/Contacts:

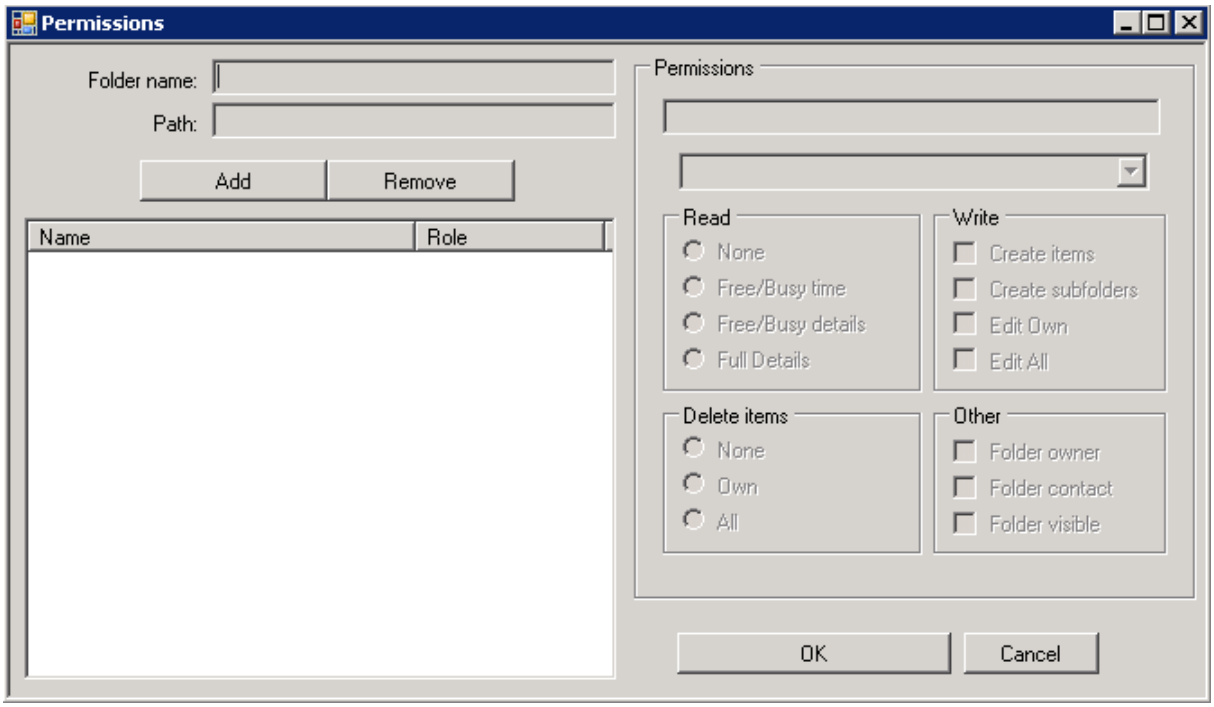
- Menu Tools -Custom Bulk Operation
- Enter the filter (&(0x3001001E=Top of Information Store)) in Overall Filter
- Click on Add and select the option Folder Permission.
- In the Permission window, click on Add
- Enter the Alias of the user account used by M5000 CC to access the Calendars/Contacts. Next click on Search to check if the user is recognized (in "Selected user").



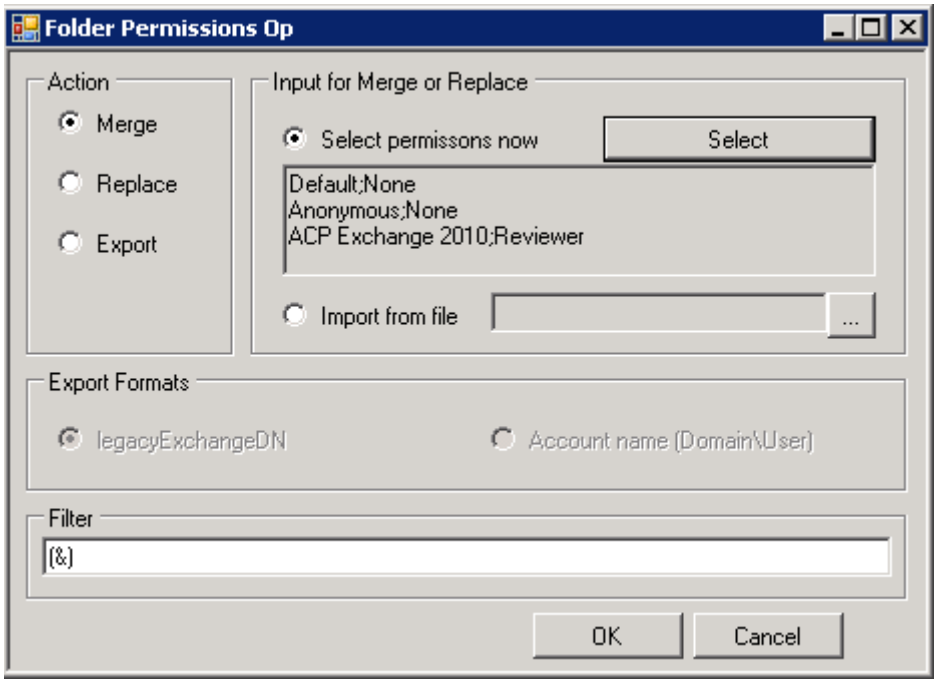
- In the Permission window, select the Reviewer role.



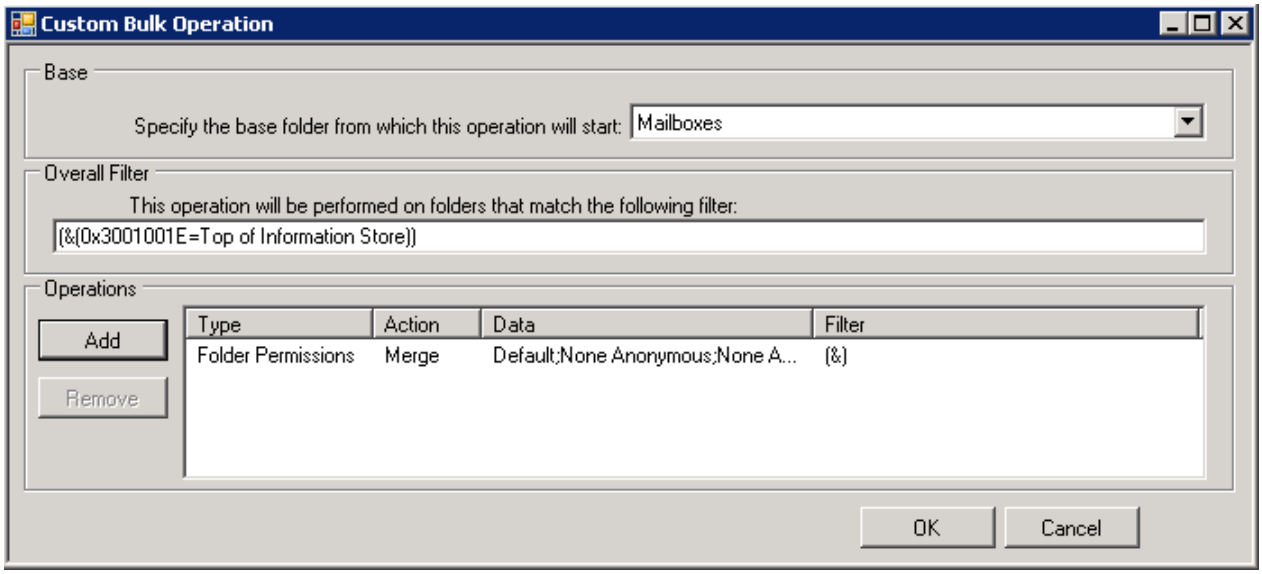
- Click on OK.
- Click again on OK in the next window.



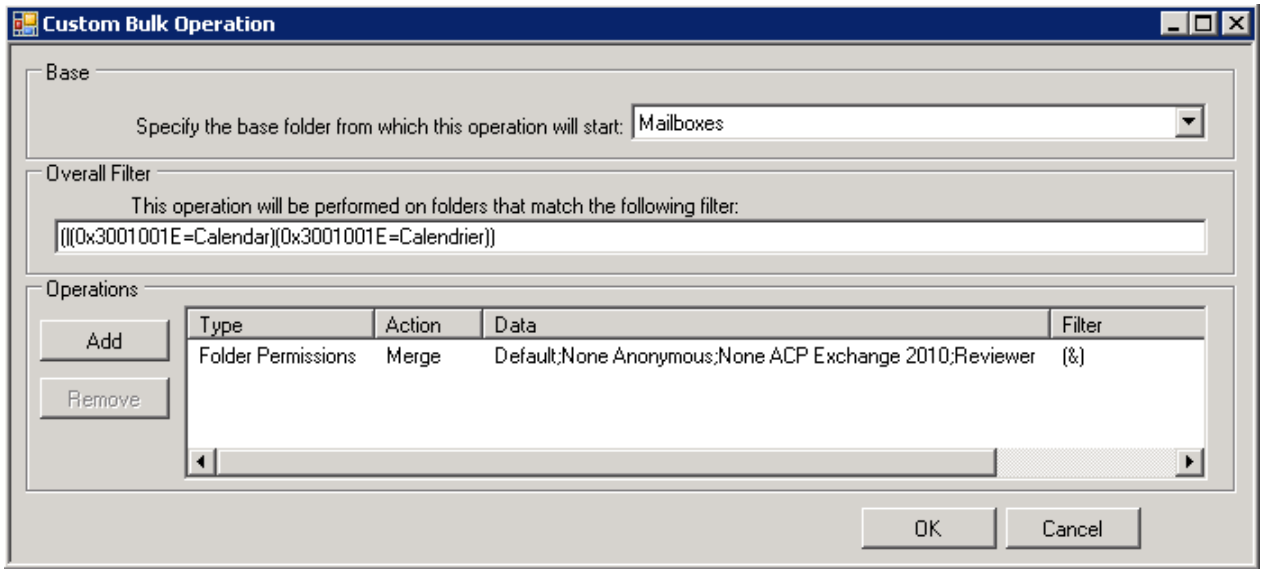
- Click on OK in the window "Folder Permissions Op"



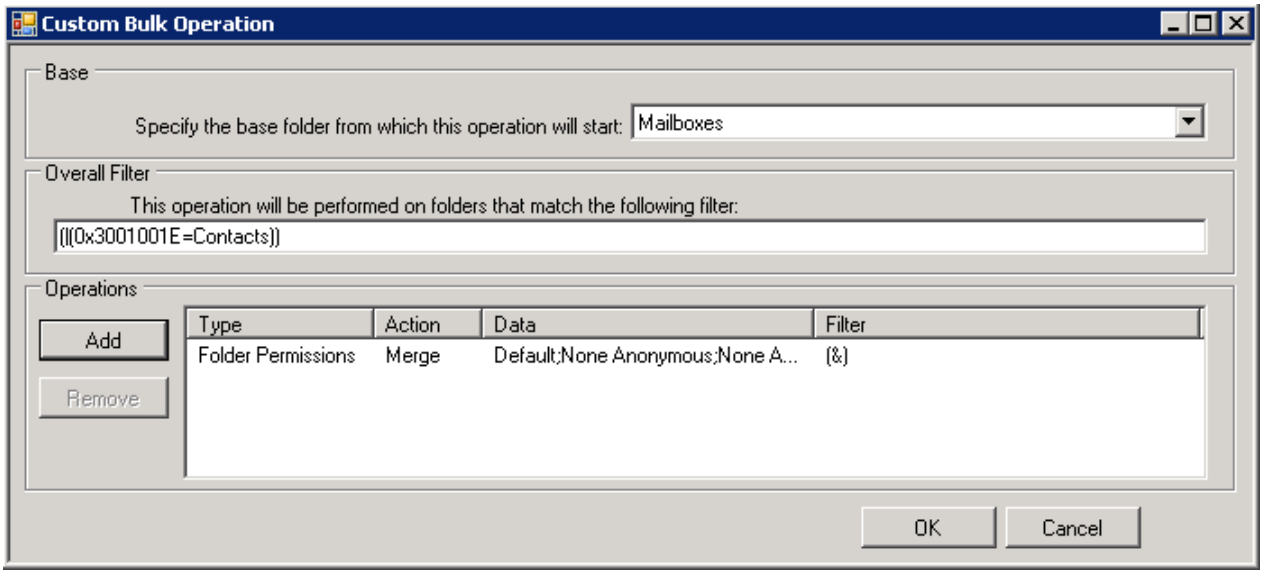
- Click on OK in the window "Custom Bulk Operation"



To give the Reviewer right on folders containing calendar entries, make the same operation using the filter (|(0x3001001E=Calendar)(0x3001001E=Calendrier)):



To give the Reviewer right on folders containing contacts, make the same operation using the filter (|(0x3001001E=Contacts)):



4.27.4.3.3 METHOD 3: GIVE THE RIGHT "RECEIVE-AS" ON ALL EXCHANGE 2010 SERVER MAILBOXES.

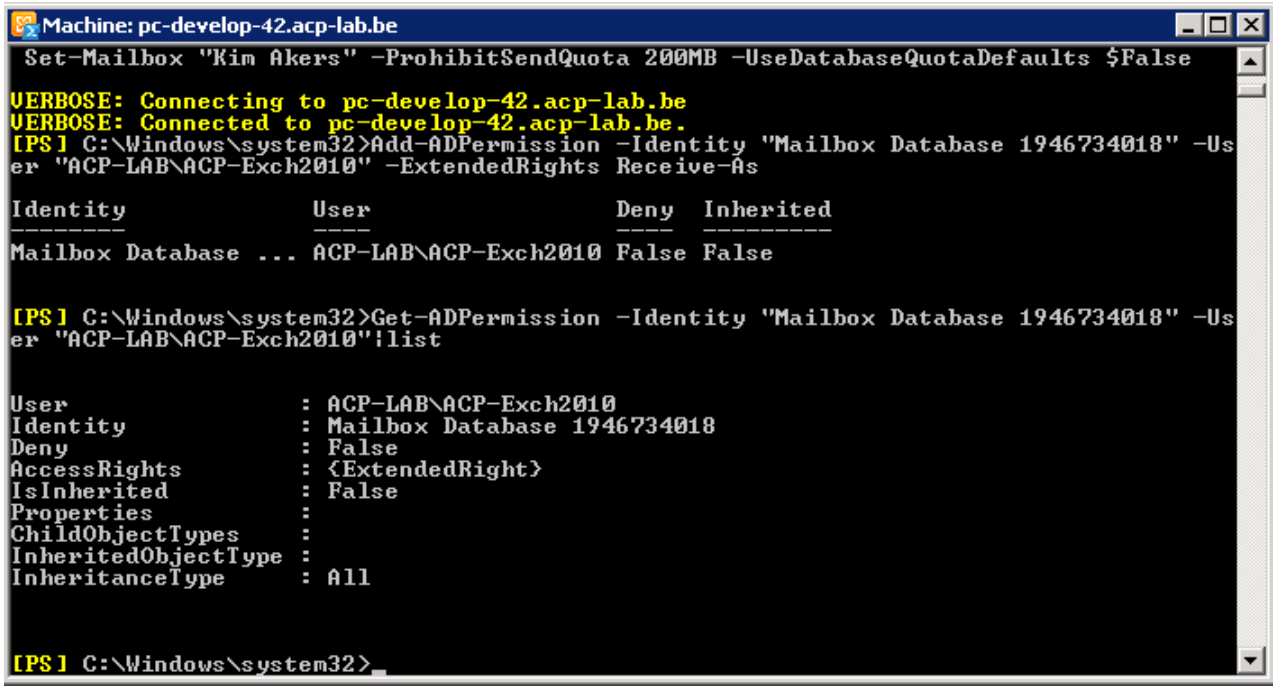
The Exchange Management Shell must be used for that. Enter the command:

- **Add-ADPermission -Identity "*Mailbox Store*" -User "*Trusted User*" -ExtendedRights Receive-As**

In this command, "*Mailbox Store*" must be replaced by the name of the Exchange Mailbox Database and "*Trusted User*" must be replaced by the account used by M5000 CC for Exchange access.

- **Get-ADPermission -Identity "*Mailbox Store*" -User "*Trusted User*" | list**

This command can be used to check if the rights are correctly defined.



- **Remove-ADPermission -Identity "*Mailbox Store*" -User "*Trusted User*" -ExtendedRights**

Receive-As

This command can be used to remove the rights.

The changes in permissions on Exchange Server are take into account only after a few minutes (or immediatly if the "Microsoft Exchange Information Store" service is restarted)

4.27.5 MICROSOFT EXCHANGE 2013

4.27.5.1 WEB SERVICE

To obtain directory and calendar data, M5000 CC requires the activation of web service access on the Exchange server 2013.

To check the web service avaibility, it is possible to make a manual request to it to display its content.

- Open a web browser.
- Enter the URL provided using the above configuration parameters, as follows:
  https://<Serveur>/EWS/Exchange.asmx?wsdl
  For example :
  https://exchange.mycompany.com/EWS/Exchange.asmx?wsdl
  If the specified page appears, the configuration is correct.

4.27.5.2 AUTHENTICATION CONFIGURATION IN M5000 CC

To access a contact's private calendar / directory from M5000 CC, the user whose identity is used to send requests to the Exchange 2013 server must first receive a read access right for the target calendar / directory.

The account to be used by M5000 CC Server to perform the query to the Exchange server is configured in the Administrator application. For calendars, the authentication is configured in the calendar server definition and for directories, the authentication is configured in the connector properties.

There are three type of authentication available:

-NTLM

-Negotiate: when "Negotiate" is selected, Kerberos protocol will be used in first for authentication. If the authentication using Kerberos is not possible, NTLM will be selected automatically.

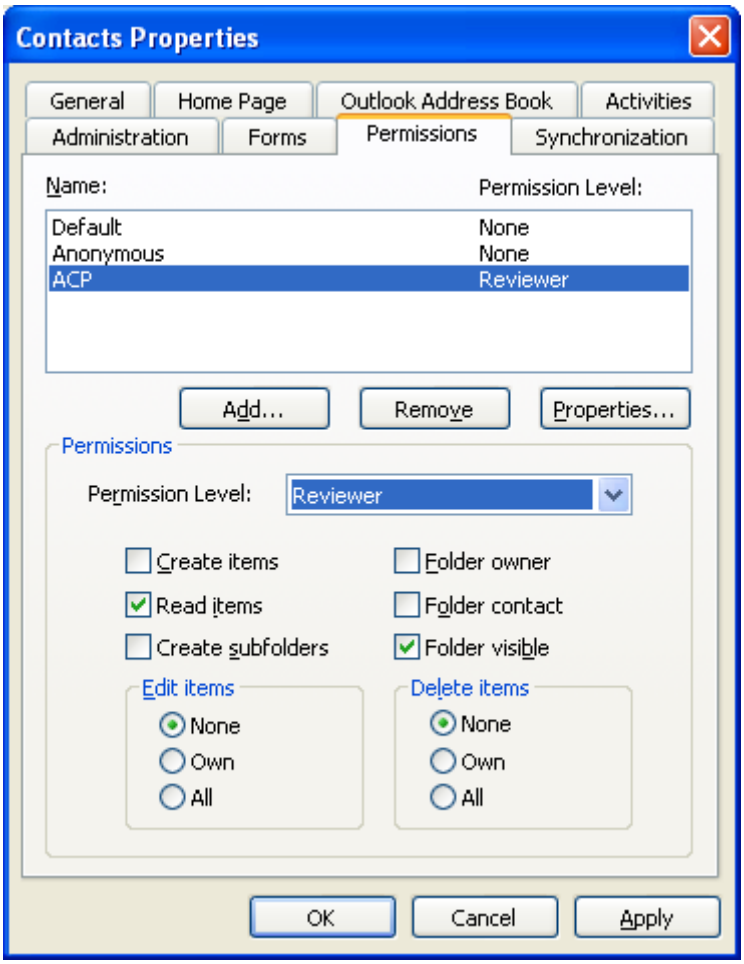
- -: this authentication type is used for delegation. In such a configuration, the portal user account will be used to perform the query to the Exchange Server.

4.27.5.3 EXCHANGE ACCESS RIGHTS CONFIGURATION

Different methods to allow M5000 CC Server to access the calendars and contacts of Exchange 2013 users:

4.27.5.3.1 METHOD 1: GIVE ACCESS TO M5000 CC SERVER IN OUTLOOK.

In Outlook, right click on the root folder "*User email address*" and select the menu "Folder Permissions". On the tab Permissions, add the account used by M5000 CC for the connection to calendars/directories and select Reviewer as Permission Level. The same operation must be performed on the sub folders containing contacts and calendar entries using the contextual menu "Properties...".



4.27.5.3.2 METHOD 2: GIVE THE RIGHTS ON CALENDAR/CONTACTS FOLDERS FOR ALL EXCHANGE MAILBOXES USING EXCHANGE MANAGEMENT SHELL.

Enter the following commands in the Exchange Management Shell tool:

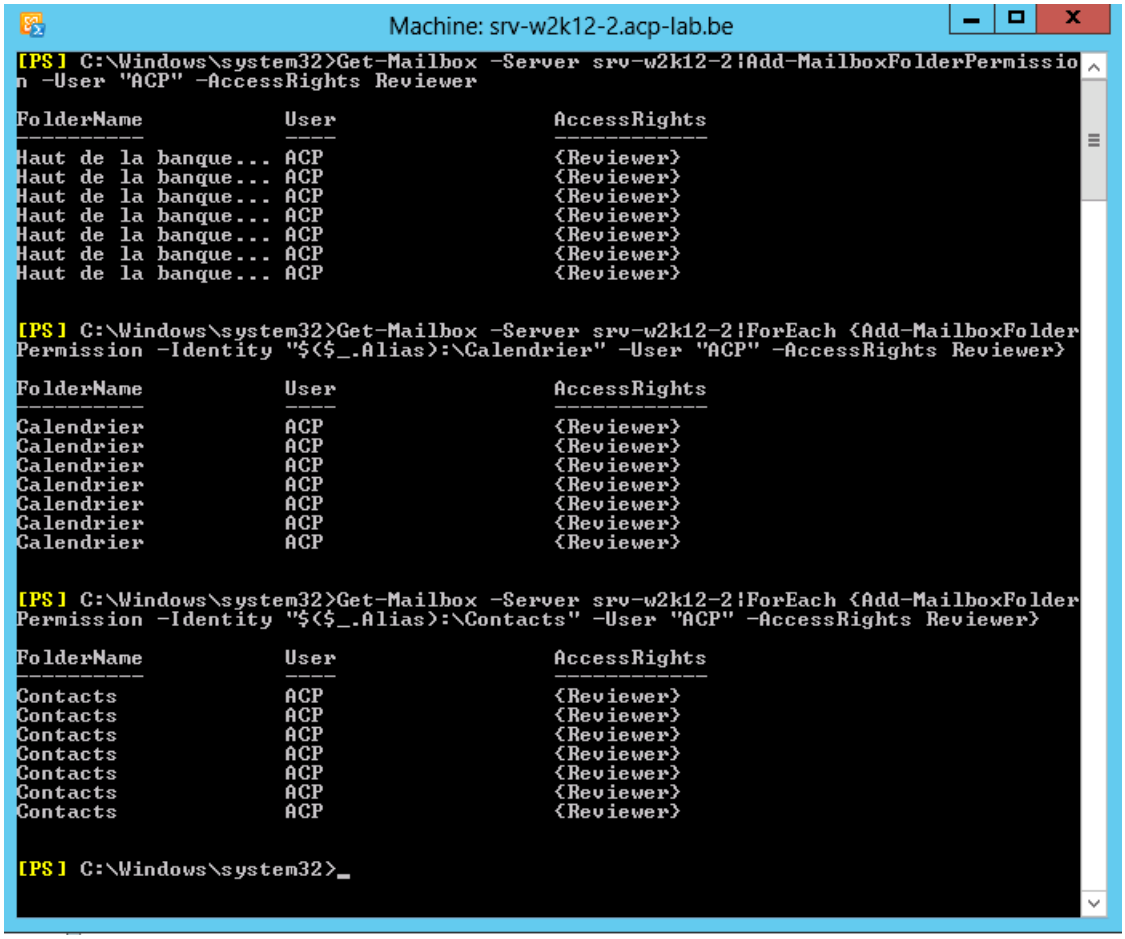
Get-Mailbox -Server *ServerName*|Add-MailboxFolderPermission -User "*M5000 CC User*" -AccessRights Reviewer

Get-Mailbox -Server *ServerName*|ForEach {Add-MailboxFolderPermission -Identity "$($_.Alias):*Calendar*" -User "*M5000 CC User*" -AccessRights Reviewer}

Get-Mailbox -Server *ServerName*|ForEach {Add-MailboxFolderPermission -Identity "$($_.Alias):*Contacts*" -User "*M5000 CC User*" -AccessRights Reviewer}

Replacing:

- *ServerName* by the host name of the server where Exchange 2013 is installed.
- *Calendar* by the name of the folder containing calendar entries in the mailboxes (the default name is Calendar for Enlgish installation).
- *Contacts* by the name of the folder containing contacts entries in the mailboxes (the default name is Contacts for Enlgish installation)
- *M5000 CC User* by the name of the M5000 CC user used for Exchange access.

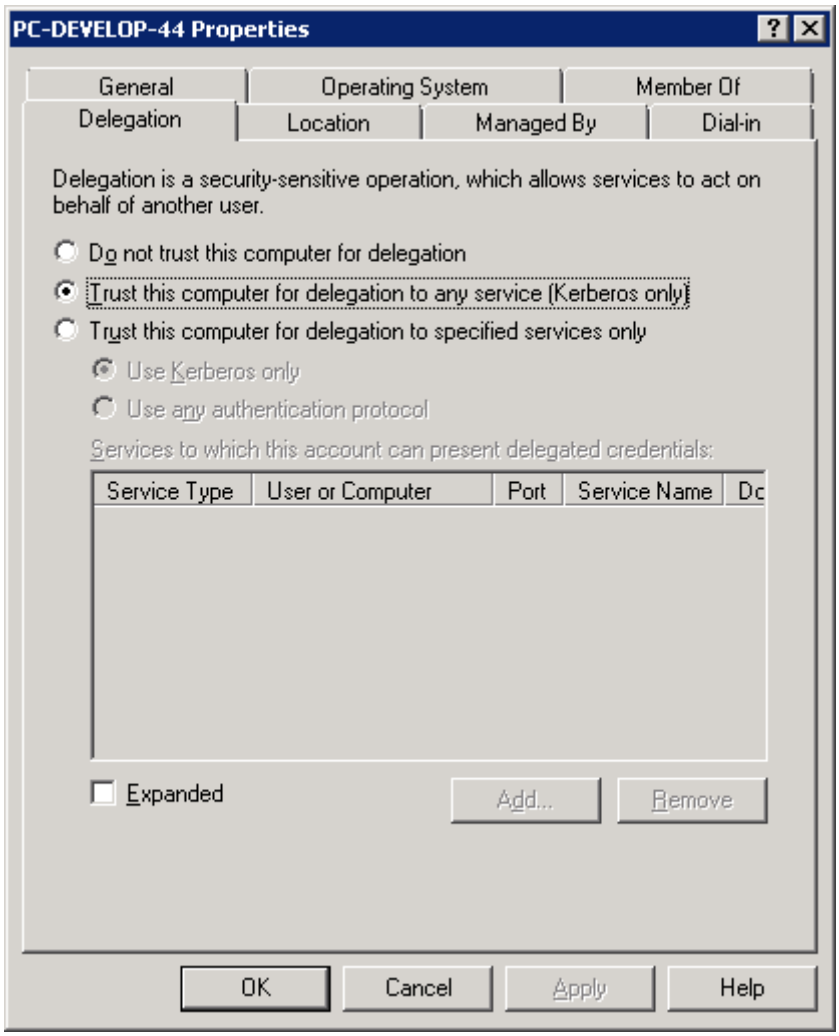


4.27.6 DELEGATION CONFIGURATION FOR ACCESS TO EXCHANGE DIRECTORIES/CALENDARS.

When delegation is configured, the Windows account of the portal user is used by M5000 CC to perform the queries to Exchange Server Calendars/Directories.

4.27.6.1 STEP 1. CONFIGURATION ON DOMAIN CONTROLLER

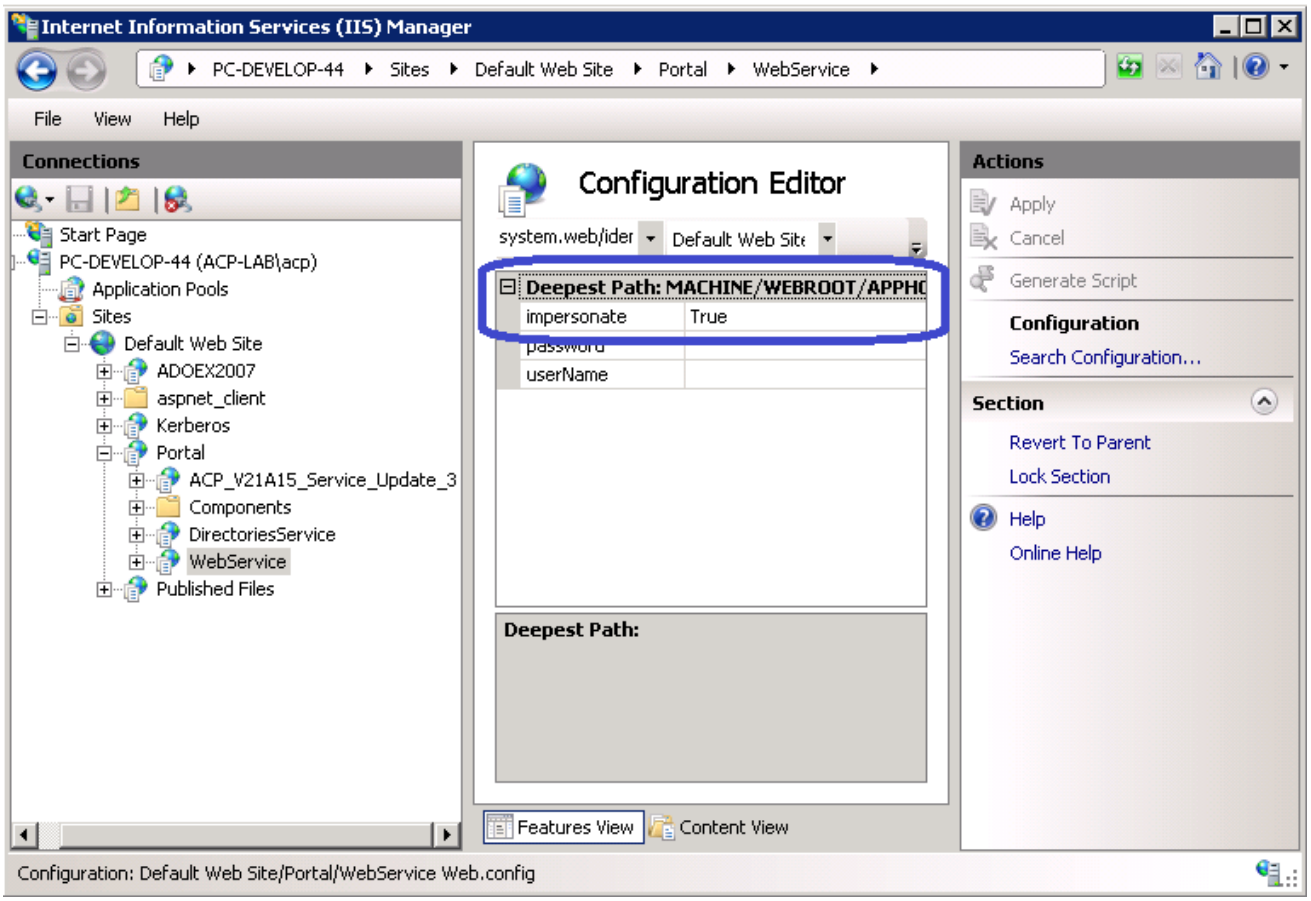
On Domain Controller, in "Active Directory Users and Computers" tool, check the option "Trust this computer for delegation" in the properties of the M5000 CC server computer object.



As prerequisite, the authentication using Kerberos must be possible between the portal user, M5000 CC web service and Exchange Server.

4.27.6.2 STEP 2. CONFIGURATION OF IIS USED FOR PORTAL PUBLICATION

Set to True the option Impersonate of the Web Service used by M5000 CC. For that, on the PC where is installed the Web Service, start the Internet Information Service Manager tool. Next select the node "Default Web Site\Portal\WebService". In the right part, double click on Configuration Editor. Select the section system.web\identity and set the option Impersonate to True.



4.27.6.3 STEP 3. DIRECTORIES AND CALENDARS CONFIGURATION IN M5000 CC

- For an Exchange directory, in directory properties (Menu View -> Directories):

- On General tab, select "-" as authentication type in connector properties.

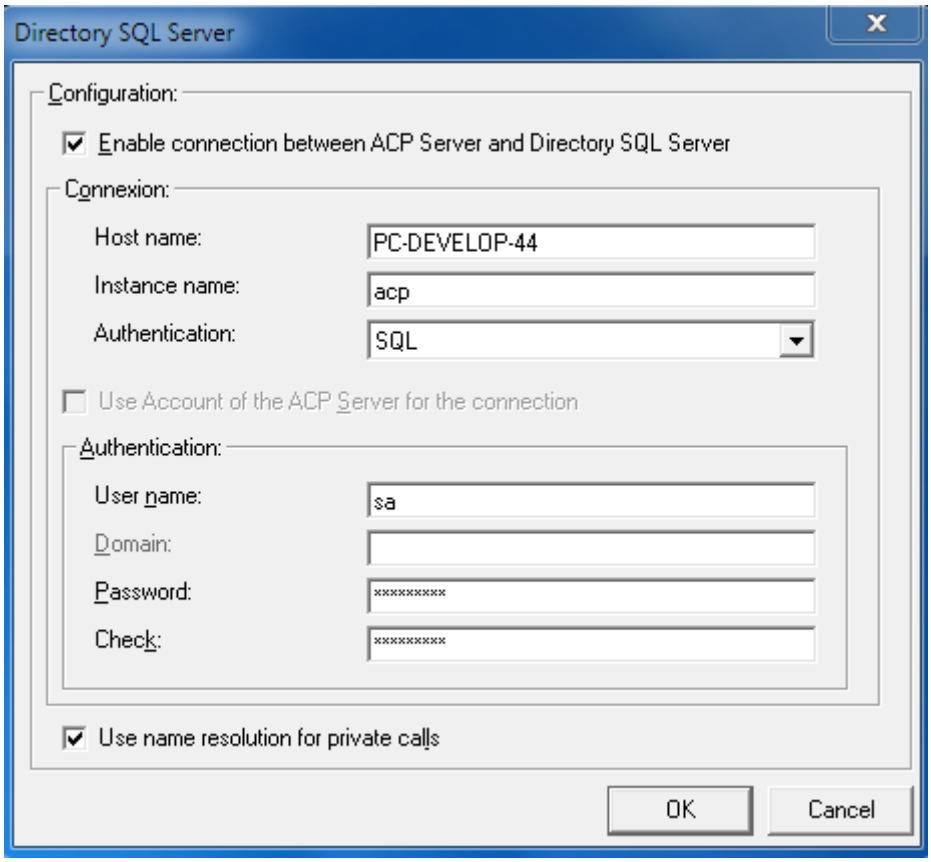
- On Options tab, the options "Automatic synchronization" and "Search in global directory" must be disabled. The authentication mode must be set to Default.

It's important to known that when the delegation is enabled on a directory, this directory will not be used for name resolution when a new call is coming in the system. With such configuration, each portal user can access his personal directory without having to modify the rights on Exchange Server.

- For an Exchange calendar, in Calendar Server properties (Menu View -> Calendar Server), select "-" as authentication method.

4.27.6.4 STEP 4. DIRECTORY SQL SERVER CONFIGURATION IN M5000 CC

In M5000 CC Administrator, SQL authentication with "sa" account mus be used for the connection to Directory SQL Server (Menu View -> Directory SQL Server).



4.27.7 OFFICE 365

4.27.7.1 AUTHENTICATION CONFIGURATION IN M5000 CC

To access a contact's private calendar / directory from M5000 CC, the user whose identity is used to send requests to Office 365 must first receive a read access right for the target calendar / directory.

The account used by M5000 CC Server to perform the query to Office 365 is configured in the Administrator application. For calendars, the authentication is configured in the calendar server definition and for directories, the authentication is configured in the connector properties.

There are two types of authentication compatible with Office 365:

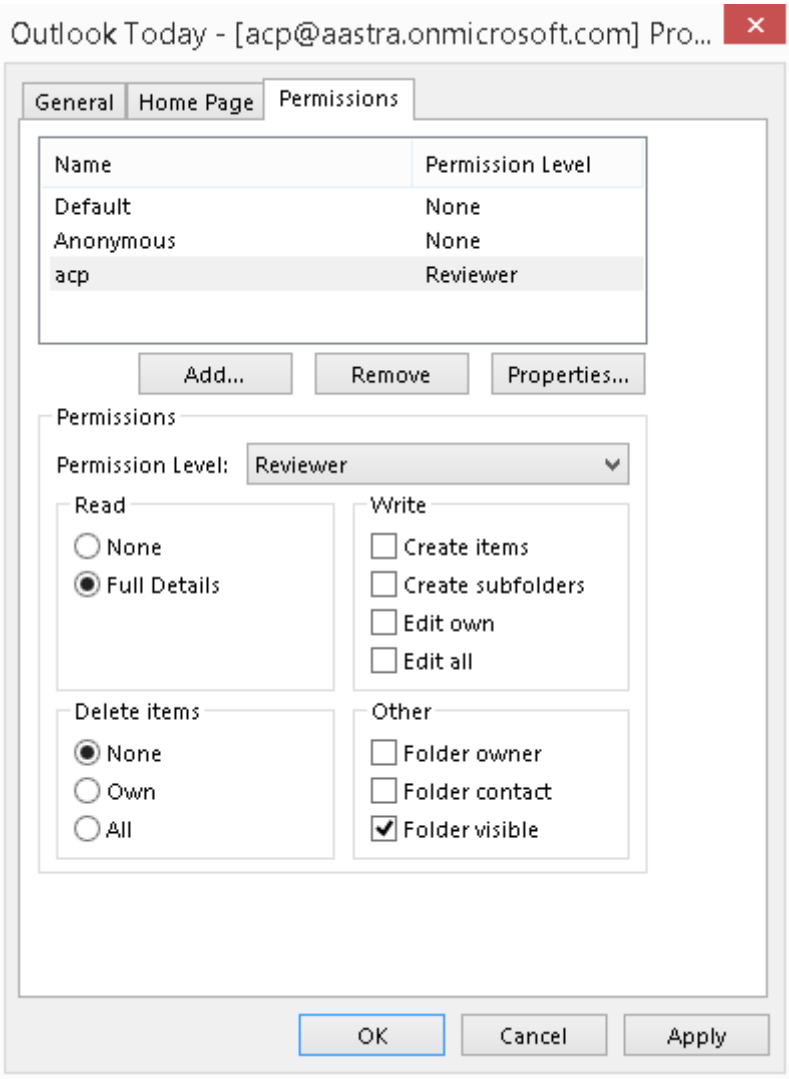
-NTLM

-Negotiate: when "Negotiate" is selected, Kerberos protocol will be used in first for authentication. If the authentication using Kerberos is not possible, NTLM will be selected automatically.

4.27.7.2 OFFICE 365 ACCESS RIGHTS CONFIGURATION

Use the following method to allow M5000 CC Server to access the calendars and contacts of Office 365 users:

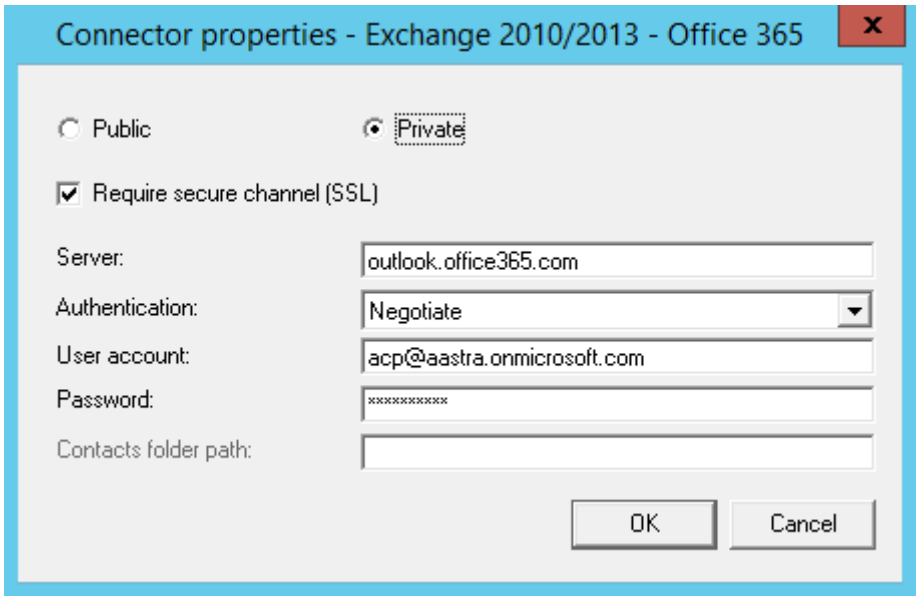
In the Outlook application of users wishing to share their calendars / directories, right click on the root folder "*User email address*" and select the menu "Folder Permissions". On the tab Permissions, add the account used by M5000 CC for the connection to calendars/directories and select Reviewer as Permission Level. The same operation must be performed on the sub folders containing contacts and calendar entries using the contextual menu "Properties...".



4.27.7.3 M5000 CC CONFIGURATION

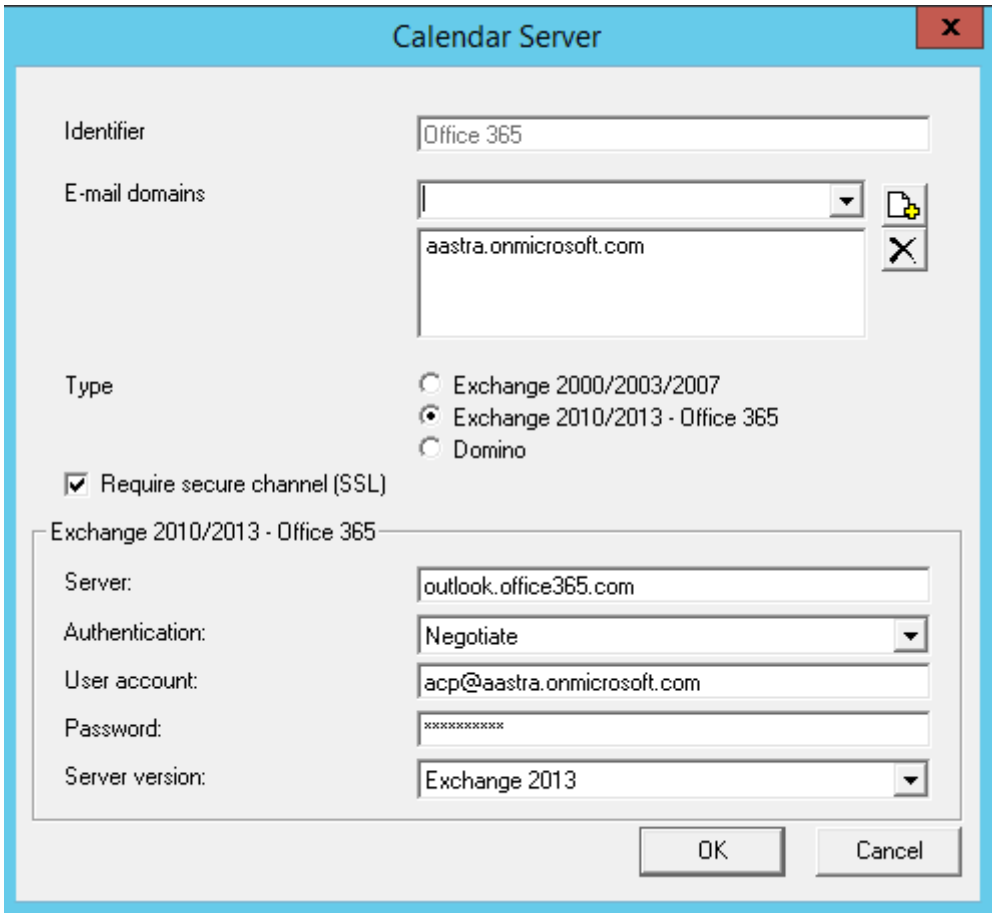
4.27.7.3.1 DIRECTORY CONNECTORS TO OFFICE 365

In M5000 CC Administrator, configure a directory of type "Exchange 2010/2013 - Office 365" with the following properties (replacing the user account by the user configured for M5000 CC in Office 365):



4.27.7.3.2 CALENDAR SERVER FOR OFFICE 365

In M5000 CC Administrator, configure a calendar server with the following properties (replacing the user account by the user configured for M5000 CC in Office 365):



4.28 INTEGRATION WITH KANNEL FOR SMS

This paragraph explains how to integrate M5000 CC with Kannel. Kannel is an Open Source SMS Gateway

(**http://kannel.org**). With Kannel it's possible to send and receive SMS in M5000 CC using an inexpensive GSM modem. An OVF Template with Kannel preconfigured is available on our FTP Server: **ftp://ftp.aastra-applications.be/Tools/Kannel**.

4.28.1 REQUIREMENTS

To install the Kannel OVF Template, the following environment is necessary:

- ESXi server version 5.0 or later with:
  - minimum 70GB disk space available
  - 1 serial or USB port available (used for GSM modem connection)
  - 1GB RAM and 1 vCPU will be allocated to Kannel
- A GSM Modem with a subscription to send and receive SMS. Kannel has been tested in our lab with the following modem: Sierra Wireless Airlink Fastrack Xtend FXT009 (**http://www.sierrawireless.com/en/productsandservices/AirLink_Gateways_Modems/Programmable_modems/FX_Series.aspx**).

4.28.2 CONFIGURATION

Caution: *Don't connect the GSM modem to ESXi server before to have configured the correct PIN code in Kannel. Otherwise your SIM card will be locked. If your SIM card is locked, put it in a GSM and use the PUK code to unlock it.*

4.28.2.1 KANNEL OVF TEMPLATE INSTALLATION

- Deploy the OVF Template from vSphere Client (menu File -> Deploy OVF Template...).
- When the OVF is deployed, start the Virtual Machine.
- Login into the Virtual Machine:
  - Username: root
  - Password: aastraACP
  - Set a static IP address:
  - Open “Network Connections” application from menu System -> Preferences.
  - Select “Auto Ethernet” and click on Edit button.
  - On “IPv4 Settings” tab, replace the IP Address “172.20.0.5/16” with the static IP address for your environment. Set gateway and DNS servers if necessary.
- Restart the Virtual Machine.

4.28.2.2 KANNEL CONFIGURATION

There are 2 important configuration files for Kannel: kannel.conf and smpplogins.txt. These files are in the directory /etc.

- kannel.conf contains the parameters for the connection to GSM Modem. To edit the file, go to the menu Places -> Computer and navigate to the directory etc (under “File System”). Double click on kannel.conf and click on Display button to open the file in a text editor. In this file, the following parameters must be adapted to your configuration:
  - my-number: enter the GSM number
  - sms-center: enter the number of your SMS center
  - pin: enter your SIM PIN code
  - if an USB port is used to connect the GSM modem to the ESXi server, replace the line device=/dev/ttyS0 by device=/dev/ttyACM0
  - global-sender: enter the GSM number
- smpplogins.txt: this file defines who can connect over SMPP to Kannel. The account used in M5000 CC SMS profile must be defined in this file. To edit the file, go to the menu Places -> Computer and navigate to the directory etc (under “File System”). Double click on smpplogins.txt and click on Display button to open the file in a text editor. This file contains one line by account. On each line, the account is defined in the following format:

  UserName Password SystemType AllowedIPAddress

AllowedIPAddress specifies the source IP addresses authorized for the connection to SMPP server (*.*.*.* for any address)

When the configuration files have been modified, shutdown the Virtual Machine. Connect the GSM modem to the serial or USB port of the ESXi server.

Add the GSM modem to the virtual machine configuration using one of the following methods:

- If the GSM modem is connected to the **serial port** of the ESXi server, right click on the virtual machine and select the menu “Edit Settings...”. In the “Virtual Machine Properties” window, on the Hardware tab, click on “Add...” button and select “Serial port” in the list of devices. Click on “Next >” button. In “Serial Port Type” window, select the option “Use physical serial port on host” and click on “Next >” button. In the ‘”Select Physical Port” window, in the list of physical serial ports, select the serial port where the GSM modem will be connected to the ESXi server. Click on “Next >” button and then on “Finish” button to close the “Add Hardware” windows. Next click on “OK” button to close the “Virtual Machine Properties” window.
- If the GSM modem is connected to the **USB port** of the ESXi server, right click on the virtual machine and select the menu “Edit Settings...”. In the “Virtual Machine Properties” window, on the Hardware tab, click on “Add...” button and select “USB Controller” in the list of devices. Click on the "Next >" button. In the "Controller type" window, click on the "Next >" button and then on the "Finish >" button to close the "Add Hardware" window. Click again on the “Add...” button and select "USB Device" in the list of devices. In the list of USB device, select the GSM modem. Click on the "Next >" button and next on the "Finish" button to close the "Add Hardware" window. Next click on the "OK" button to close the "Virtual Machine Properties" window.

Restart the virtual machine.

4.28.2.3 M5000 CC CONFIGURATION

4.28.2.3.1 INBOUND SMS

To configure a SMS profile to receive SMS in M5000 CC: in "M5000 CC Administrator" application, go to menu View -> E-mail Profiles. Add a new e-mails profile with the following characteristics:

- Type: Standard profile
- Name: a name for the profile
- User name: sms
- Password: aastraACP
- Sender address: sms@acp.com
- Host name: the IP address of the Kannel server

Next click on OK and in the window "Folders of profile..." select the following folders:

- For Deleted items: Trash
- For Sent items: Sent

Configure an inbound service and in the properties window of the service, select the created profile in the list "SMS inbound profile". Next in the window "Inbound mailboxes of the service...", add the folder INBOX as SMS Mailbox.

It’s now possible to configure the service in the same way as an email service.

4.28.2.3.2 OUTBOUND SMS

To configure a SMS profile to send SMS from M5000 CC: in “M5000 CC Administrator” application, go to menu View -> SMS Profiles. Click on Add button. In the “SMS profile properties” window, enter the following informations:

- Name: a name for the profile
- Smpp version: select “Version 3.4”
- Connection mode: select Transmitter
- Host Name / IP Address: enter the IP address of Kannel Server.
- User name: enter a user name account defined previously in smpplogins.txt file
- User password: enter the password
- Port: enter the value 2346
- System type: enter the system type associated to the user
- Address TON: let the default value 0
- Address NPI: let the default value 0
- Address range: let the field empty
- Select the option “Allow multiple SMS per message”
- Select the option “System”

4.28.2.4 REPORTING FOR SMS

SMS sent and received by Kannel are stored in a PostgreSQL database on the Kannel server. It's possible to generate reports for inbound and outbound SMS thanks to the Microsoft SQL Server Reporting Service and the reports available on the M5000 CC DVD.

This paragraph explains how to install these reports on the Microsoft SQL Server Reporting Service.

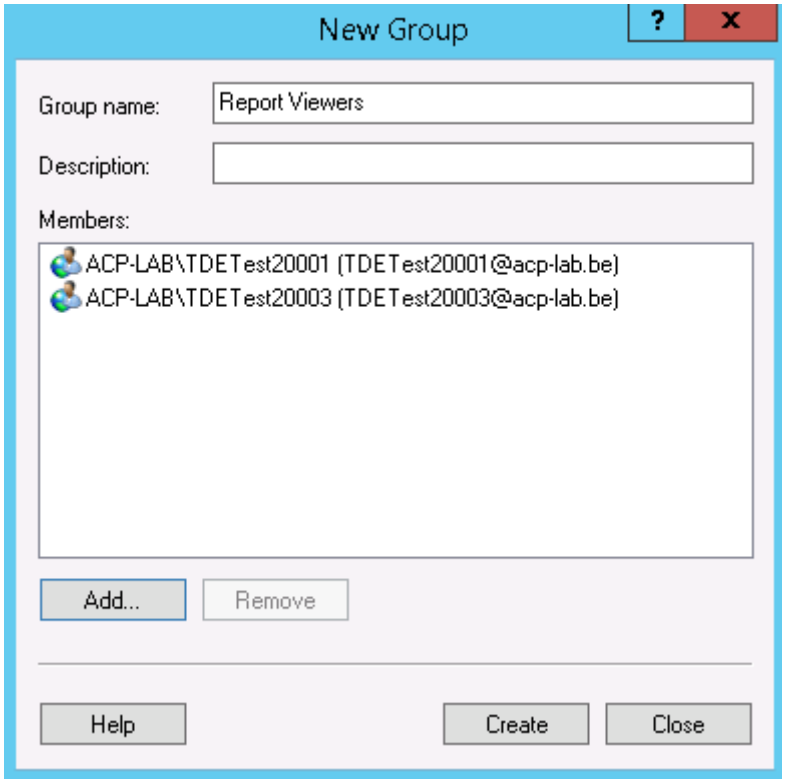
4.28.2.4.1 POSTGRESQL ODBC DRIVERS

On M5000 CC Server server, install the latest version of PostgreSQL ODBC drivers available from here:

http://www.postgresql.org/ftp/odbc/versions/msi/

4.28.2.4.2 WINDOWS GROUP FOR ACCESS TO THE REPORTING SERVICE

On the M5000 CC Server, create a local Windows groups containing the users who have the right to view the reports.

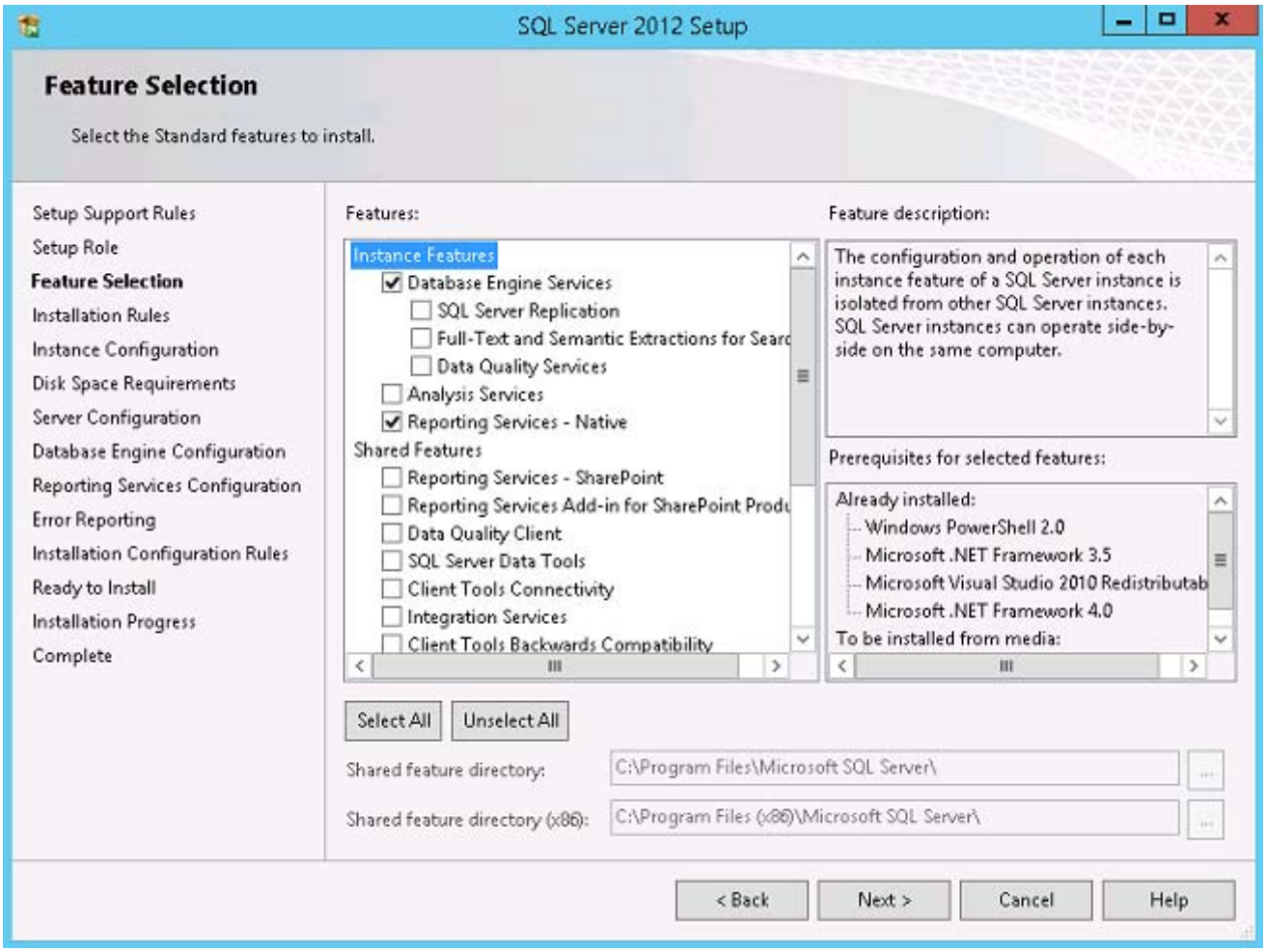


4.28.2.4.3 MICROSOFT SQL SERVER INSTALLATION

Microsoft SQL Server 2012 must be installed on M5000 CC Server. The supported editions are Standard, Business Intelligence or Enterprise (Express edition is not supported).

- Launch the setup and select the option *Installation -> New SQL Server stand-alone installation or add features to an existing installation* in the window *SQL Server Installation Center*.
- In the window *Feature Selection* select the components *Database Engine Services* and *Reporting Services*

- *Native*



- In the window *Instance Configuration*, select the option *Default instance.*
- In the windows *Database Engine Configuration* click on the button *Add Current User.*
- Let the default options in the other windows.

In Internet Explorer on a client computer, using the windows account with which SQL Server has been installed, connect to the Report Manager site (http://m5000cc_server_name/Reports) and configure the Reporting Service like this:

- Create a *New Data Source* with the following parameters
  - Name: *sqlbox_psql*
  - Data source type: *ODBC*
  - Connection string:
    - If SQL Server 32 bits has been installed:

Driver={PostgreSQL UNICODE};Server=1.2.3.4;Port=5432;Database=sqlbox;

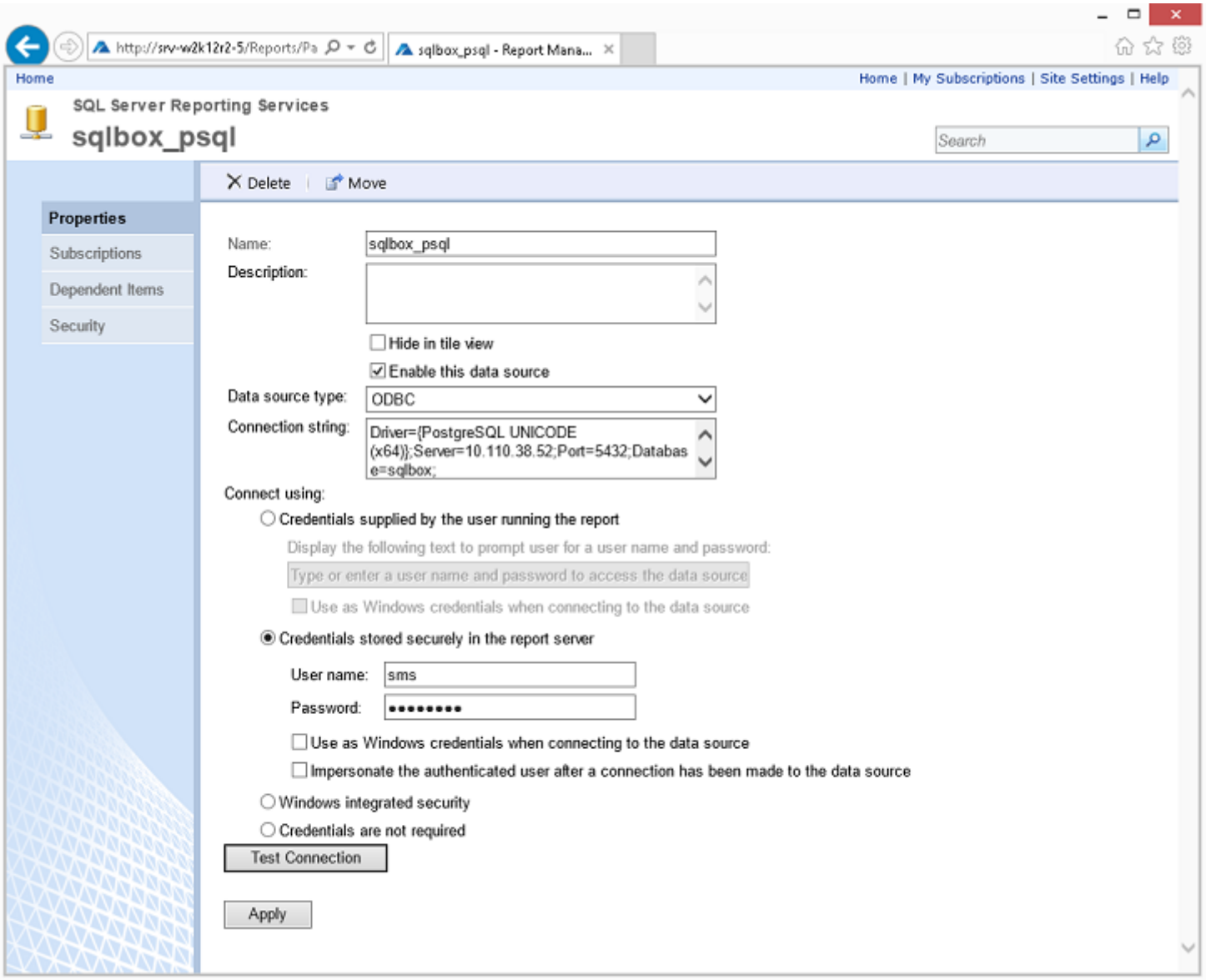
    - If SQL Server 64 bits has been installed:

Driver={PostgreSQL UNICODE (x64)};Server=1.2.3.4;Port=5432;Database=sqlbox;

where *1.2.3.4* must be replaced by the IP address of Kannel server.

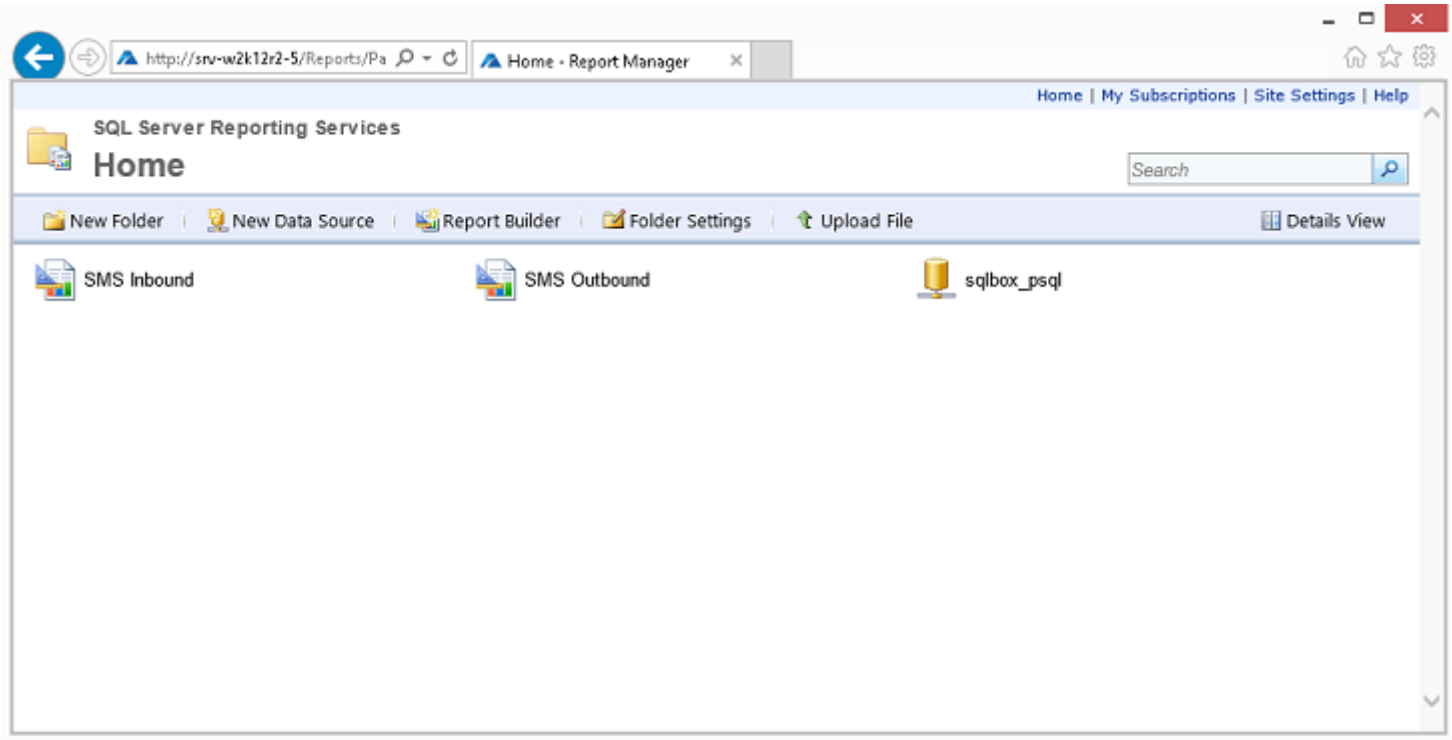
  - Check the option *Credentials stored securely in the report server*
  - User name: *sms*

- Password: *aastraACP*

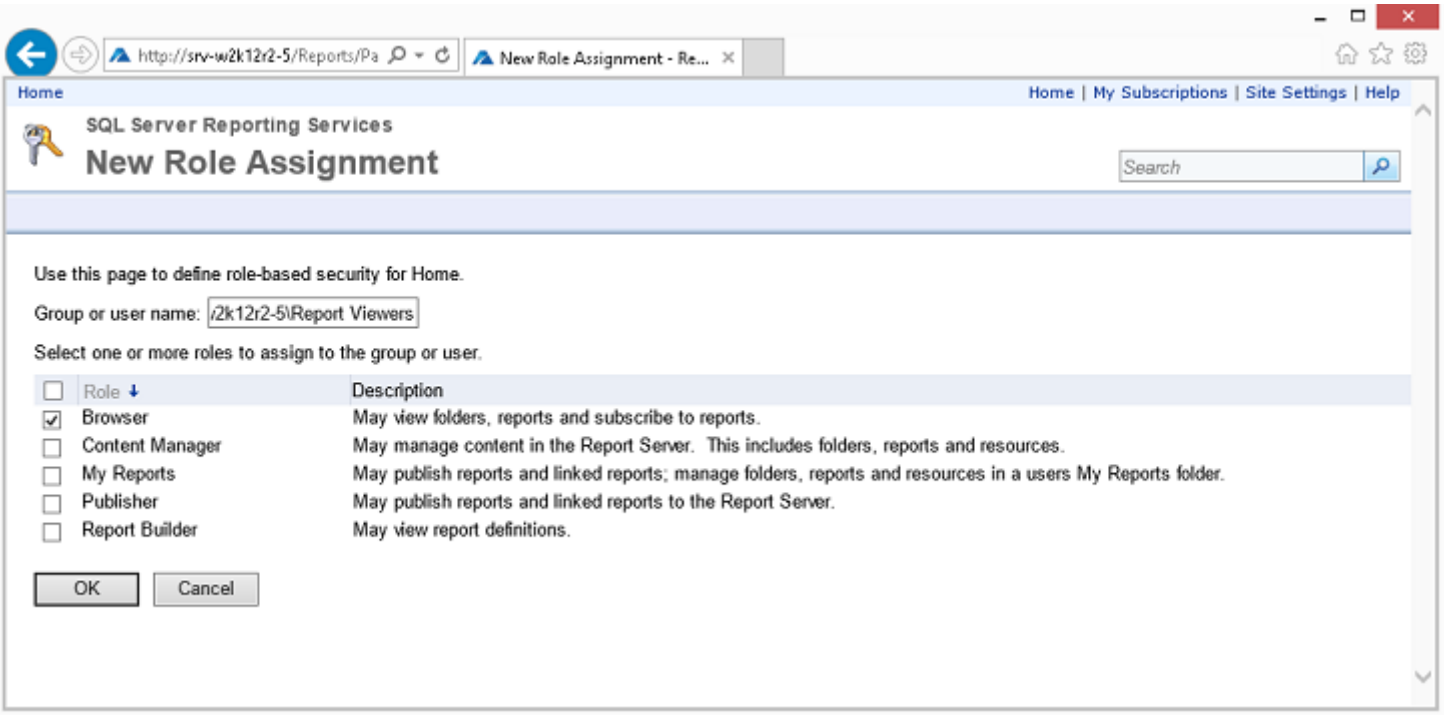


- Click on *Upload File* menu to upload the files *SMS Inbound.rdl* and *SMS Outbound.rdl* from the directory *Software\M5000 CC\Integration\SMS Reporting* on the M5000 CC DVD

.



- On the Home page, click on the *Folder Settings* menu. Then click on *New Role Assignment* and add the Windows group created previously for the users who can view the reports. Select the *Browser* role for that group.



Now it should be possible to view the reports using the following URL:

- For inbound SMS:

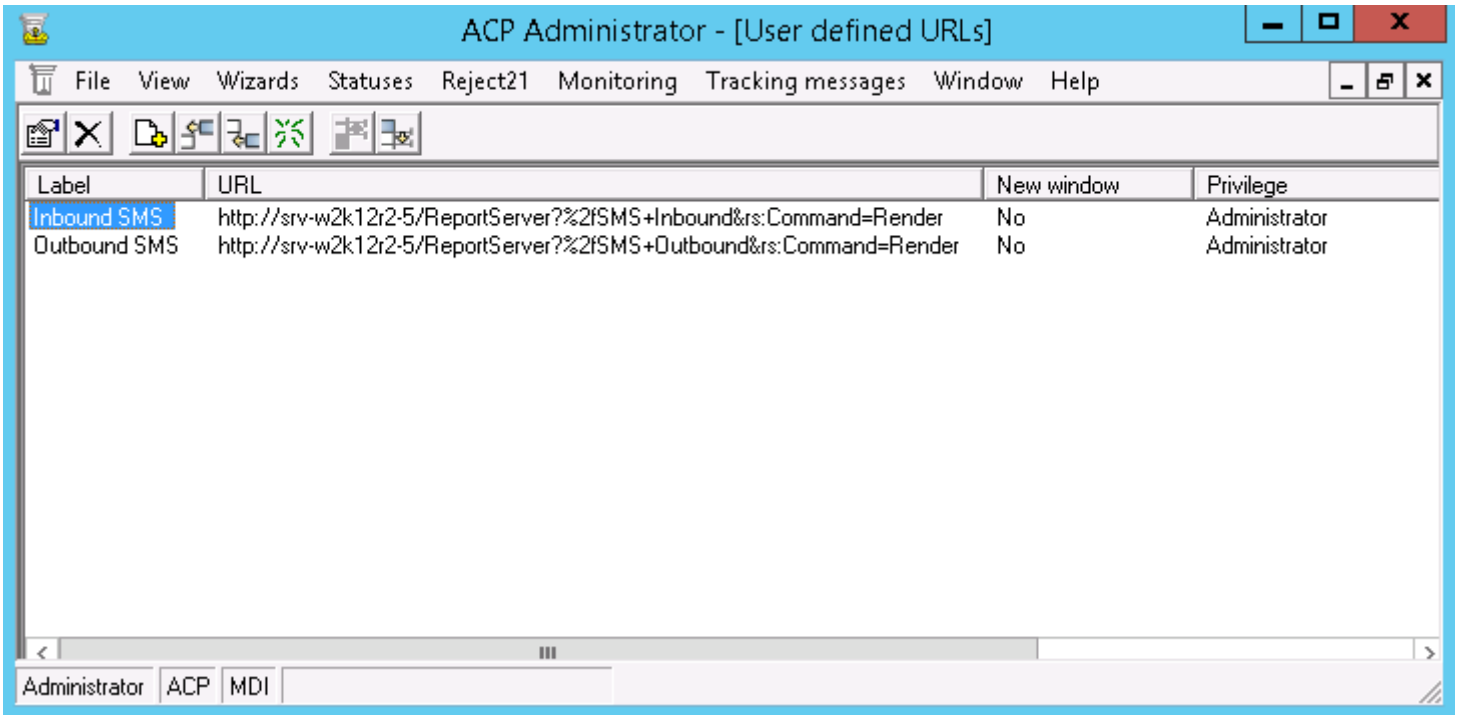
http://m5000cc-srv/ReportServer?%2fSMS+Inbound&rs:Command=Render

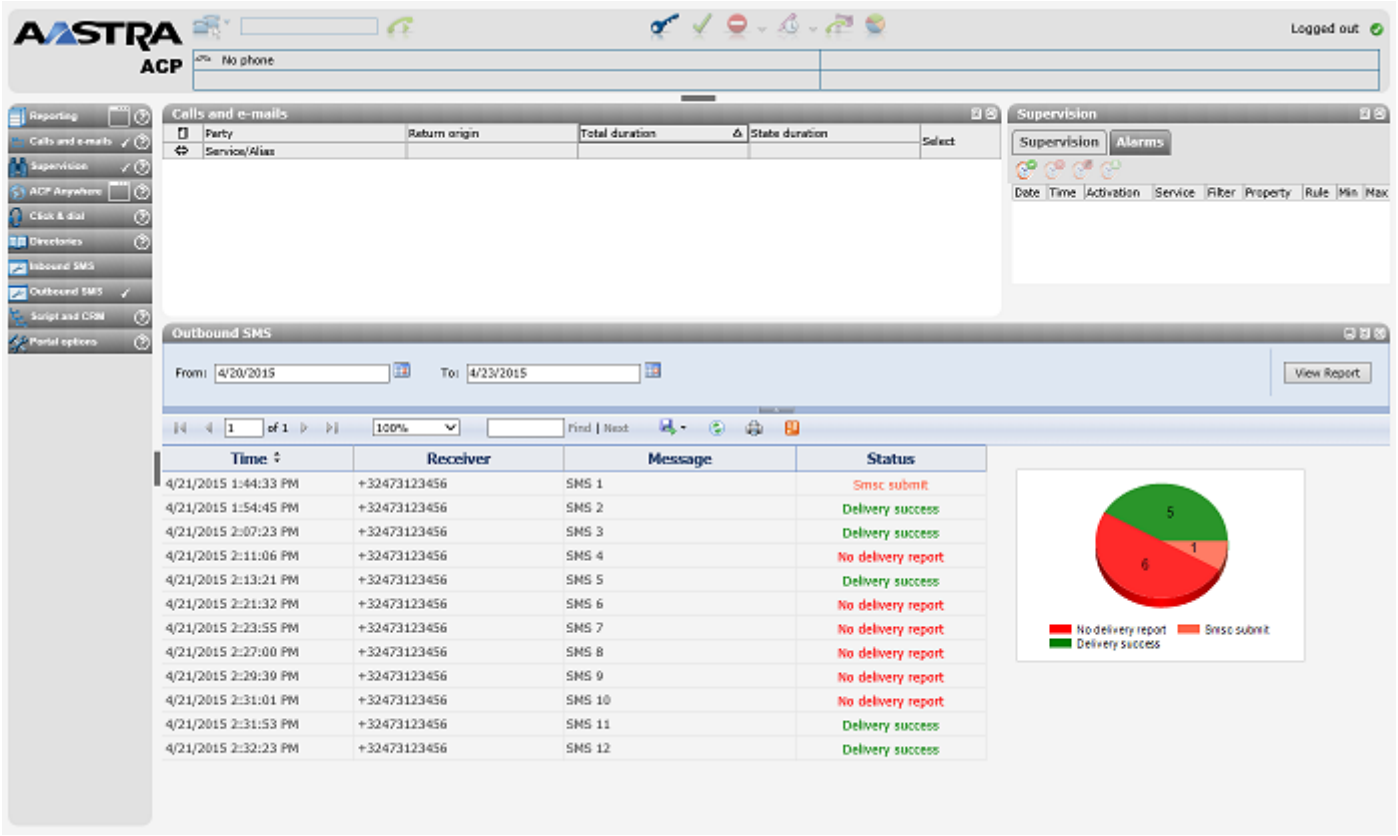
- For outbound SMS:

http://m5000cc-srv/ReportServer?%2fSMS+Outbound&rs:Command=Render

You can add these URL to the *User defined URLs* (M5000 CC Administrator menu *View -> User defined URL*)

to have the reports integrated to the portal.





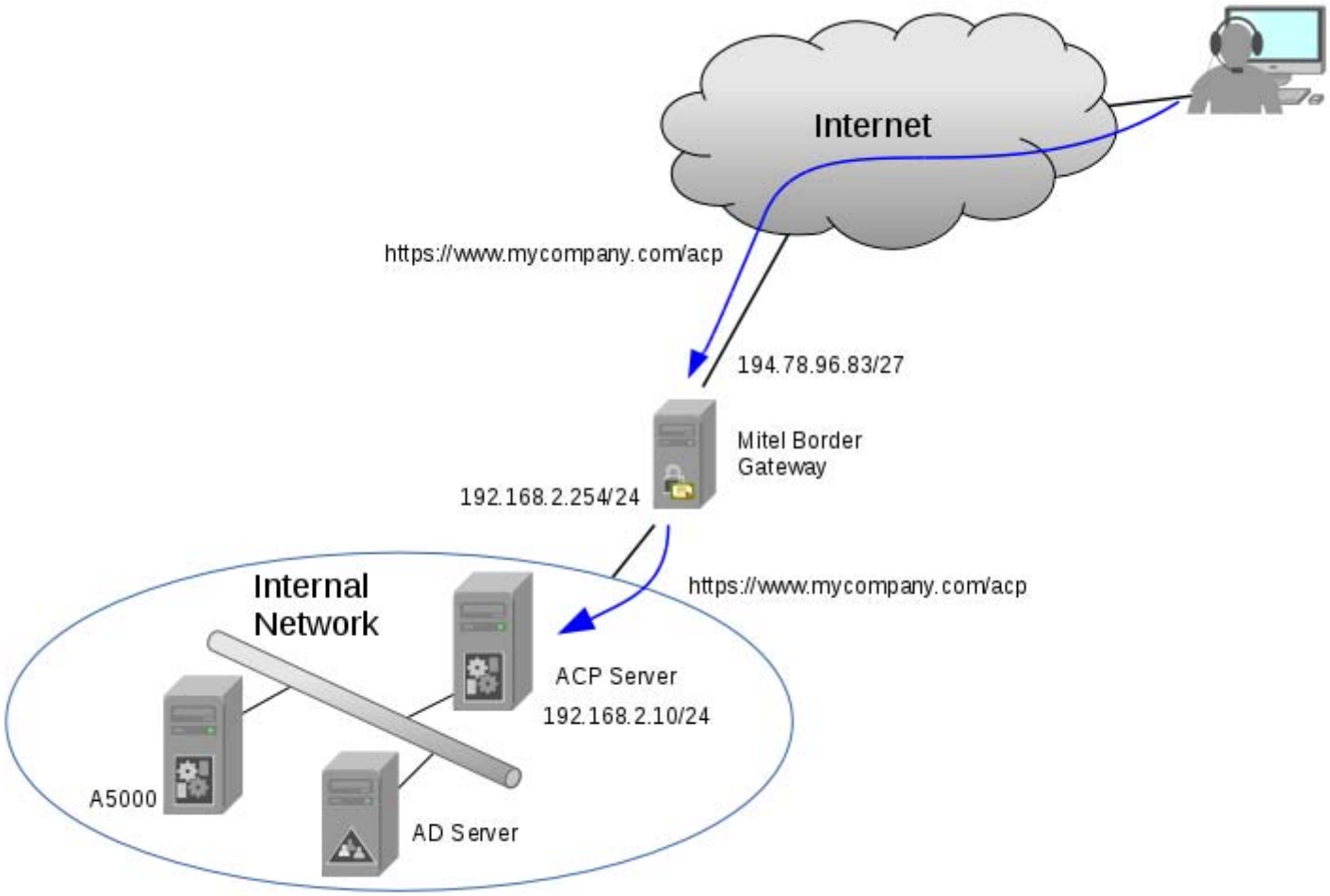
4.29 CONNECTION TO M5000 CC PORTAL FROM THE INTERNET

This paragraph explains how to allow access to M5000 CC Portal from Internet. In this configuration, the client is on the Internet (mobile worker, home worker...) and M5000 CC Server is installed on the internal network of the enterprise. A reverse proxy will be used to provide a secure interface between M5000 CC Server on the LAN and clients on the Internet. This configuration has been tested with the Web Proxy functionality of the Mitel Border Gateway (**http://mitel.be/product-service/mitel-mivoice-border-gateway**).

Two different configurations are possible:

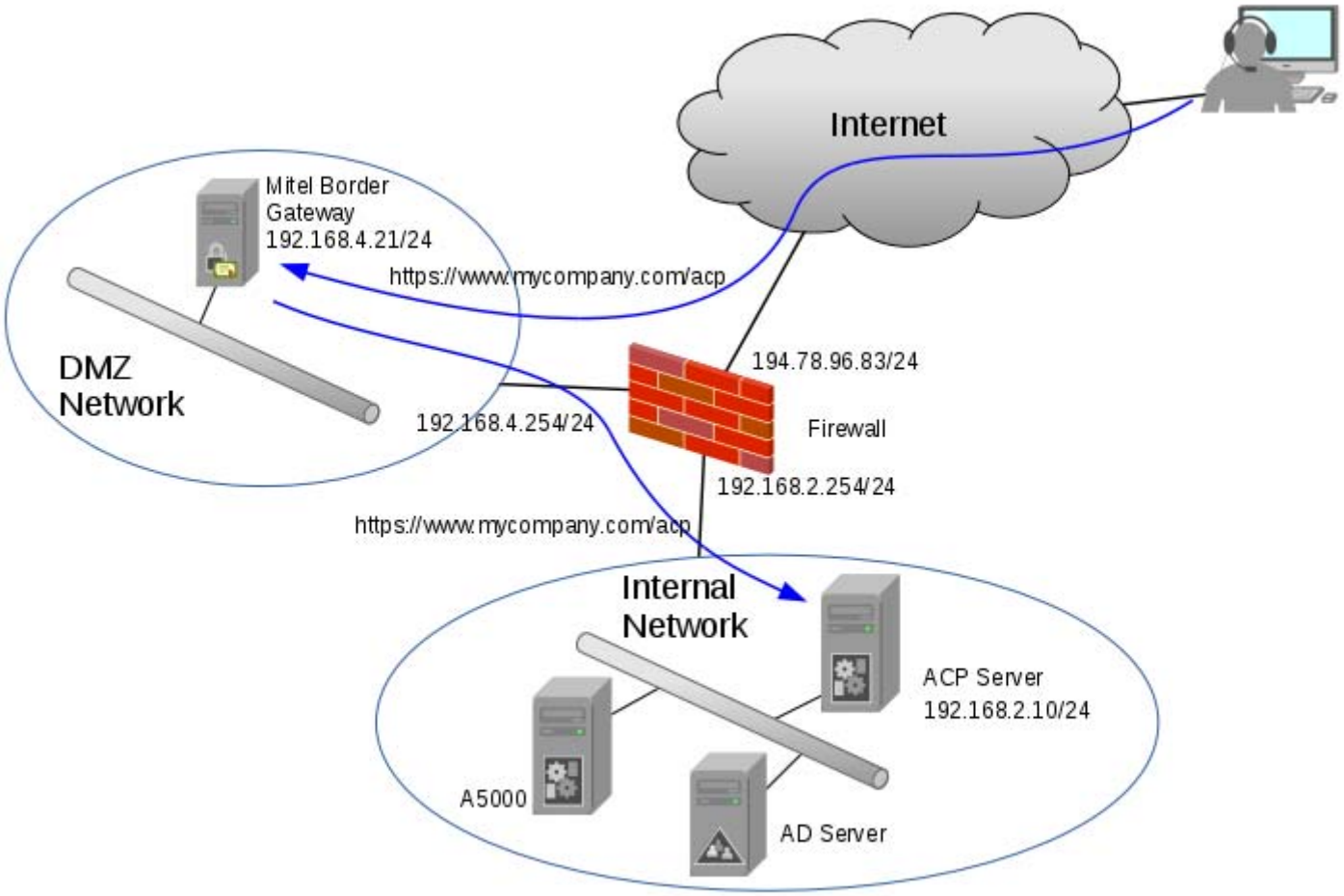
- Server Gateway on the Network Edge

In this configuration, the MBG (Mitel Border Gateway) functions as a firewall/Internet gateway, which requires the MBG hardware to have two Ethernet interfaces: one to connect to the external network (the Internet) and the other to connect to the internal network.



- Server-only on the Network DMZ

In this configuration, the server is installed in the Demilitarized Zone (DMZ) of an existing firewall. It acts only as a server and is protected from Internet exposure by the existing firewall.



In this configuration, a port forwarding rule must be defined on the firewall to translate the TCP port 443 on the firewall external IP address (194.78.96.83 in the example) to the TCP port 443 on the MBG IP address (192.168.4.21 in the example).

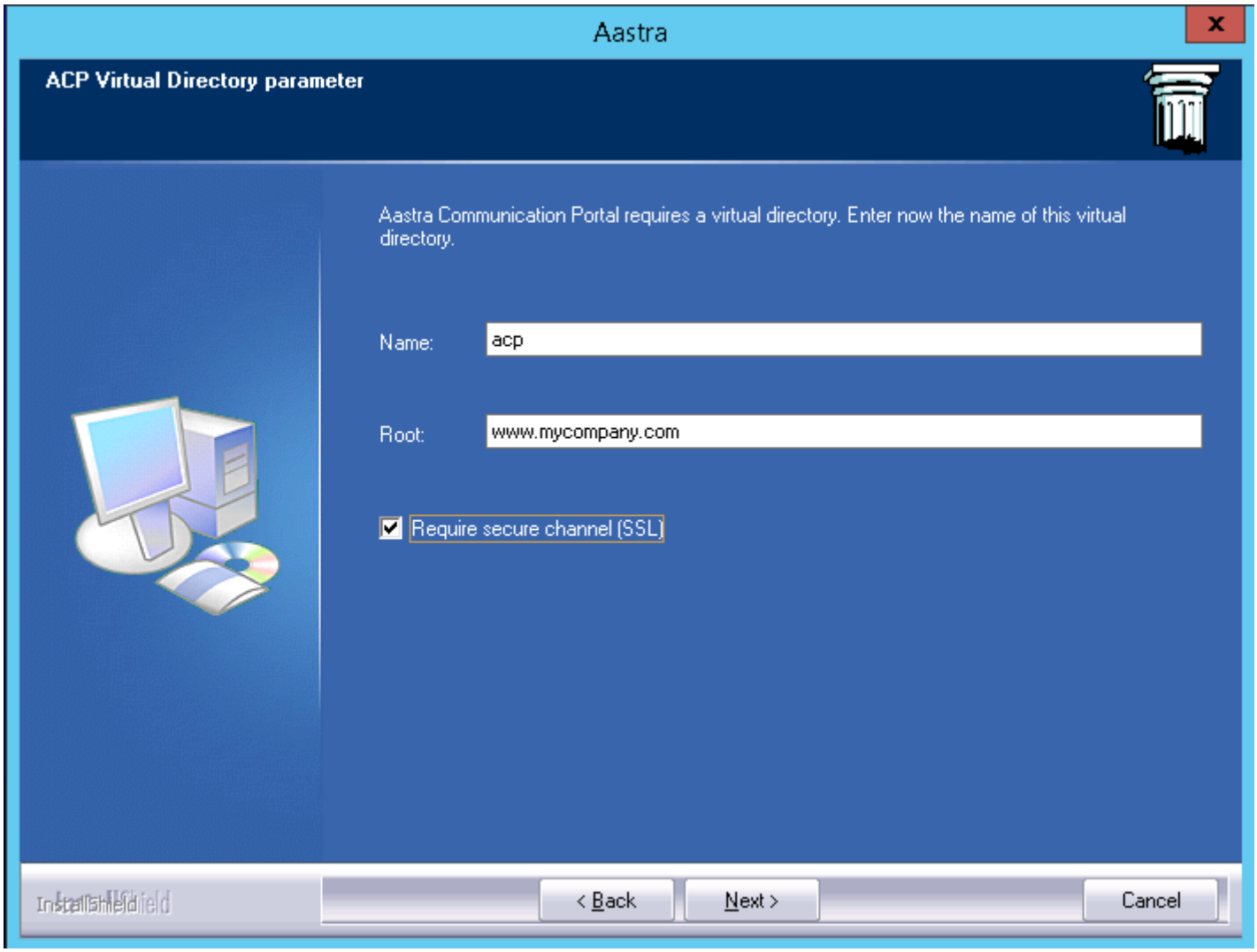
The https traffic (destination port TCP 443) from the MBG to the IIS where is published Communication Portal must be allowed to pass through the firewall.

Only the configuration regarding M5000 CC will be explained in the following paragraphs.

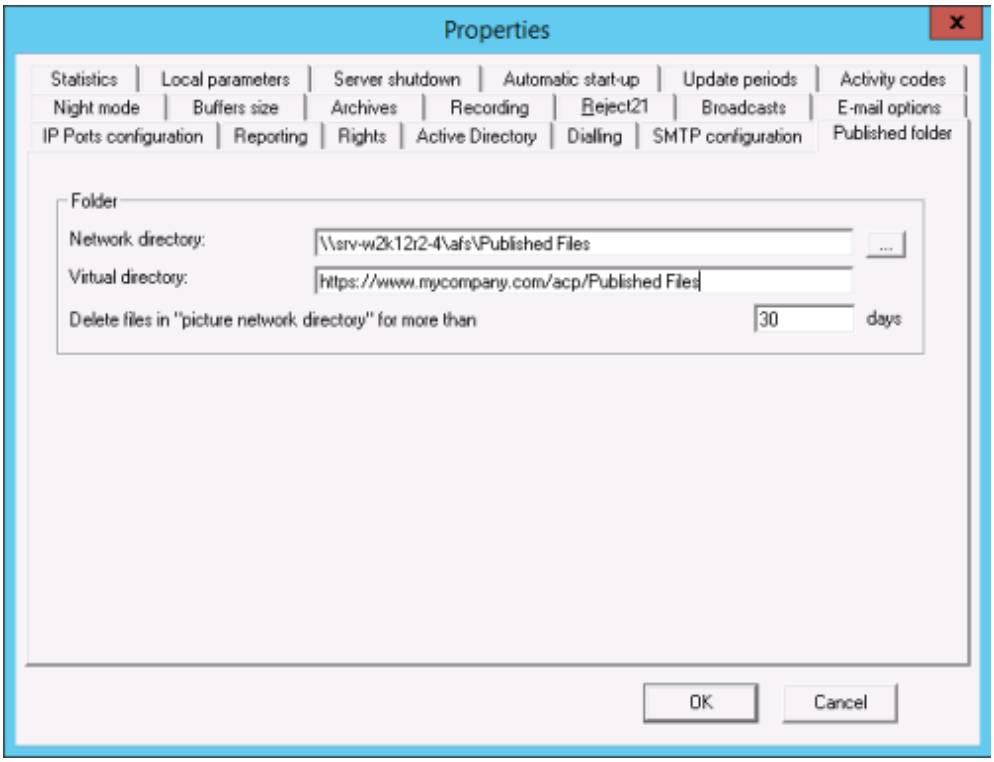
4.29.1 M5000 CC INSTALLATION

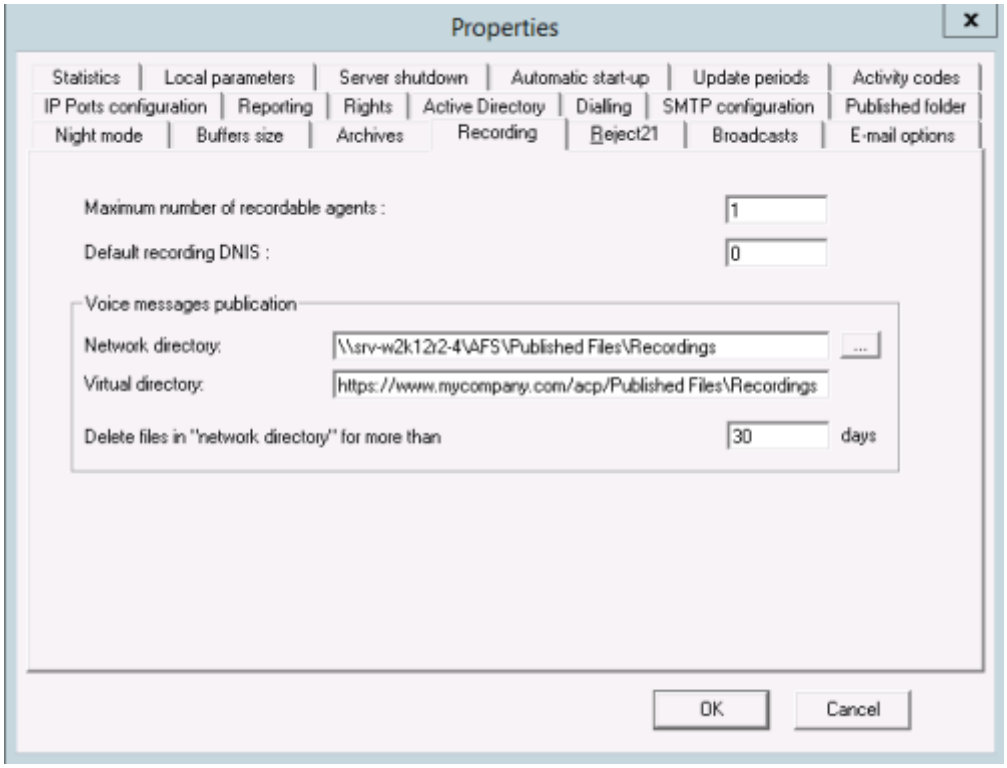
During M5000 CC installation:

- set the M5000 CC Virtual Directory name to acp (instead of portal)
- set the Root to the FQDN used to access M5000 CC Portal (*www.mycompany.com* in the example)
- select the option *Require secure channel (SSL)*



After the installation, you will have to configure the virtual directory for Published folder and Recording (in M5000 CC Administrator, menu File -> Properties...) with the URL used to access M5000 CC Portal from the Internet: (respectively *https://www.mycompany.com/*acp/*Published Files* and *https://www.mycompany.com/*acp/*Published Files/Recordings* in the example).





4.29.2 CERTIFICATE CONFIGURATION

To protect the data exchange between the client browser and M5000 CC Server, the protocol SSL will be used. For this, a valid certificate must be installed onto the MBG and another onto the IIS of the M5000 CC Server. The common name of the certificate must be set to the full-qualified domain name (FQDN) used to access the M5000 CC Portal from the Internet (www.mycompany.com in the example). Refer to the MBG manual to import the certificate onto the gateway and refer to the paragraph *6.13.2 : Certificate and SSL configuration on the IIS Server* of this manual to import the certificate onto the IIS of the M5000 CC Server.

4.29.3 DNS CONFIGURATION

The FQDN used to access M5000 CC Portal must be resolved by the external DNS servers to the public address of the MBG/firewall and by the internal DNS servers to the actual IP address of M5000 CC Portal on the LAN.

In the examples described in the previous diagram:

- www.mycompany.com must be resolved to 194.78.96.83 by the external DNS servers
- www.mycompany.com must be resolved to 192.168.2.10 by the internal DNS servers

The MBG must be configured to use an internal DNS server. If it's not possible to use an internal DSN server on the MBG, create a text file named *50acp* in the directory */etc/e-smith/templates/etc/hosts* on the MBG and add the following line in the file:

A.B.C.D FQDN

where *A.B.C.D* is the ip address of the M5000 CC Server and *FQDN* is the full-qualified domain name used to access the M5000 CC Portal.

In the example, the file must look like this:

192.168.2.10 www.mycompany.com

Execute the following command on the MBG console to update the running configuration:

```
expand-template /etc/hosts
```

4.29.4 REVERSE PROXY CONFIGURATION

To activate the reverse proxy to M5000 CC Server on the MBG:

- Copy the file *25SSLDirectives50ACP* from the directory *Software\M5000 CC\Integration\MBG* of the M5000 CC DVD to the directory */etc/e-smith/templates/etc/httpd/conf/httpd.conf/VirtualHosts* on the MBG.
- Edit the file *58ACP* present in the directory *Software\M5000 CC\Integration\MBG* of the M5000 CC DVD and replace *www.mycompany.com* by the FQDN used to access M5000 CC Portal. Then copy the file to the directory */etc/e-smith/templates/etc/httpd/conf/httpd.conf/VirtualHosts* on the MBG.

Execute the following commands on the MBG console to update the running configuration:

```
expand-template /etc/httpd/conf/httpd.conf
apachectl -k graceful
```

Now M5000 CC Portal portal should be accessible from the Internet, using the URL https://*www.mycompany.com/acp*

4.30 BACKING UP THE CONFIGURATION

The backup must be made in order to keep a copy of the system configuration and/or the old files (if the software is upgraded). The M5000 CC Wall Display application is used to back up the files.

- Select **[Backup]** from the M5000 CC Wall Display application's **[File]** menu to open the **"Backup destination"** window.
- Select the destination path (drive and directory) for the backup files and click ***[OK]***.
- A message window will open asking **"The Server will be in maintenance mode during the backup. Continue?"** Click ***[OK]*** to continue.
  - Information and progress messages will be displayed while the system is copying the different directories.

4.31 FAQ

4.31.1 PROBLEM OF DRIVER UPDATE FOR ALADDIN USB KEYS

4.31.1.1 DESCRIPTION

An error which occurs while updating the drivers for Aladdin USB keys (HASP Device Driver API error) may occur during M5000 CC installation.

After validating the error message, the M5000 CC installation program ends correctly.

4.31.1.2 CAUSE OF THE PROBLEM

The M5000 CC installation program tries to install or update the drivers for Aladdin USB keys. Therefore, the problem may occur if the corresponding device is being used.

In this case, the error message may be ignored without any impact on the M5000 CC installation.

5 RECOMMENDATIONS ON PBX CONFIGURATION

5.1 CSTA

CSTA must be unlocked and activated on the PBX.

IMPORTANT: for M5000 CC this function is used to monitor all agents, call pits, whether the sets are with CCO or virtual groups, music call pits or Dialogic channels or IP IVR channels.

IMPORTANT: The TCP port used on the PBX must be configured as TPKT.

IMPORTANT: Two M5000 CC servers cannot be connected to the same PBX CSTA server.

IMPORTANT: As CSTA is multisite, it is essential to make sure that the CSTA key code is greater than the sum of all the elements monitored on the multisite network.

For example, on a multisite Mitel 5000 X and MiVoice 5000 Server, if 200 objects are monitored on the MiVoice 5000 Server and 30 agents on the Mitel 5000 X, the key codes on the two sites must be at least 256.

IMPORTANT: From R6.1 PBX version, it is possible to define M5000 CC CSTA Link that does not consume any PBX CSTA license. It is recommended to define such CSTA link type in M5000 CC.

IMPORTANT: From R6.1 PBX version, it is possible to use CSTA protocol for supervising the PBX subscriber in directory portal application. It is recommended to use CSTA instead of Intercom supervision and to define a Supervision CSTA link in M5000 CC.

5.2 CALL PITS AND DNIS

5.2.1 CALL PITS

The call pits on the PBX must, if possible, be virtual groups so as to be able to handle a greater volume of traffic.

5.2.2 INCOMING CALL PITS

Incoming call pits are entry points for M5000 CC; once a call is presented in the call pit a CSTA event is returned via the IP link to M5000 CC, M5000 CC then takes control of the call and distributes it according to its call distribution scripts.

IMPORTANT: It is advisable to use virtual groups as much as possible rather than sets with CCO. If the limits of 30 per cluster are reached, the number of call pits must be sized according to the traffic so as to limit the number of simultaneous calls to one set (maximum of 10).

5.2.3 MESSAGE CALL PIT

Message call pits are where M5000 CC can store calls until an agent becomes free. During this waiting time, a (welcome, dissuasion, etc.) message may be played to the caller by MiVoice 5000. Each call pit belongs to a different company / department pair. Without IVR the messages are played by the MiVoice 5000 using MiVoice 5000 network tone replacement mechanisms. The principle is as follows:

The ringback tones are replaced for this company / department by a message broadcast by the MiVoice 5000.

The tones to be replaced are as follows:

- Before and after answer on free extension.
- Before and after answer on busy extension.

IMPORTANT: It is also advisable to use virtual groups as much as possible rather than sets with CCO. If the limits of 30 per cluster are reached, the number of call pits must be sized according to the traffic so as to limit the number of simultaneous calls to one set (maximum of 10).

IMPORTANT: Without IVR the messages played by MiVoice 5000 can only be played for network calls. A message cannot be played for a call pit internal call.

5.2.4 SET USED AS DNIS

The set must have the following characteristics:

- Right to disconnect the set
- A directory number for each CCO
- One programmed key for each CCO
- Each directory number configured for immediate forwarding to the department's incoming call pits or to the Dialogic or IP channel group.

IMPORTANT: For correct operation you must first create the various directory numbers, then program a CCO for each directory number, then program forwarding of each number to the call pits or Dialogic or IP channel group.

5.3 PBX FEATURE CLASSES

5.3.1 FOR AGENTS

5.3.1.1 SINGLE-LINE SET

For this type of set, only one professional extension is defined in M5000 CC. On the PBX, the agent set must belong to a group so as to be monitored correctly by CSTA.

It must have the following characteristics:

- The set called must not have more than one CCO (M key: monitors your multi-key number) unless this set is in headset mode.
- Only one directory number per set
- Call interception not allowed.
- Must not be protected against forwarding
- Waiting calls rejected.
- Right to be listened to if the listen / interception function is requested

External call forking can be used for agent extension starting from MiVoice 5000 R6.1 Initial Pack. However some constraints must be taken into account:

- It can only be used with agents having mono line programmed on their terminals.
- When a professional call is distributed by M5000 CC to an agent using external call forking, the IID number is presented on the external set.
- If a call is picked up by a voice mail, it will be seen has an answered call by the system.

5.3.1.2 MULTI-LINE SET

For this type of set, only one extension per line is defined in M5000 CC. On the PBX, each line has a different directory number. Moreover, each agent set must belong to a group so as to be monitored correctly by CSTA. The status of the set in the group is only synchronised with the status of the agent in M5000 CC for the extension defined as main extension.

It must have the following characteristics:

- A directory number must be defined for the set per extension defined in M5000 CC.
- One and only one CCO must be programmed per line (M key: supervises your multi-key number).
- Call interception not allowed.
- Must not be protected against forwarding
- Waiting calls rejected.
- Right to be listened to if the listen / interception function is requested

RESCUE MODE: in some situations (M5000 CC not available, reduced mode), the PBX itself routes calls to the agents' extensions. In this case, calls are only presented to extensions that are "in group". Since the M5000 CC only synchronizes the status of an agent with the status of the defined main extension, it is recommended to

- define main extensions of all agents in the group used for rescue mode, and
- define the other extensions (secondary extensions) in another group.

This implies that calls will only appear on main extensions in rescue mode, leading to a single-line operation mode.

Configurations where all extensions are defined in the same group are nevertheless supported, to preserve multi-line operation mode in rescue mode. However, the agents must then manually manage their in group / out of group status on their secondary extensions.

5.3.2 FOR SUPERVISORS

- Right to listen to if the listen / interception function is requested

IMPORTANT: If the supervisor is also an agent, he or she must have agent feature class rights.

5.3.3 FOR INCOMING CALL PITS (SET WITH CCO)

- Right to disconnect the set
- Must be protected against forwarding
- As many CCOs as simultaneous calls.

IMPORTANT: The use of this type of set as incoming call pit should be limited, as the traffic supported is much less than that via virtual groups. They must therefore only be used if no more virtual groups are available (30

per cluster).

IMPORTANT: The set should not be connected physically as this affects performance.

5.3.4 FOR MESSAGE CALL PITS (SET WITH CCO)

- Right to disconnect the set
- Must be protected against forwarding
- As many CCOs as simultaneous calls.
- Return to ATDC after specific timeout (600s; see security)

IMPORTANT: The use of this type of set as message call pit should be limited, as the traffic supported is much less than that via virtual groups. They must therefore only be used if no more virtual groups are available (30 for all the groups).

IMPORTANT: The set should not be connected physically as this affects performance.

IMPORTANT: In order to avoid collecting calls in a message call pit (typically on-hold), M5000 CC can manage several virtual groups used to play the same message. On the MiVoice 5000 side these groups belong to the same company / department.

5.4 CHARACTERISTICS OF THE GROUPS USED

5.4.1 VIRTUAL INCOMING GROUPS

- Group without a declared set or empty
- Short timeout before return to ATDC: 10 to 15s
- % of queue adjustable with SURVOP. By default 100% of the 96 sets, in other words 96 calls on hold simultaneously in the virtual group.
- Waiting calls accepted

5.4.2 VIRTUAL MESSAGE GROUPS

- Group without a declared set
- Long timeout before return to ATDC (more than 600s as a waiting call must be managed by M5000 CC and not the MiVoice 5000)
- % of queue adjustable with SURVOP. By default 100% of the 96 sets, in other words 96 calls on hold simultaneously in the virtual group.
- Waiting calls accepted
- Must belong to a different company / department for each message to be played.

5.4.3 DIALOGIC CHANNEL GROUPS

- Waiting calls rejected.
- Cyclic hunt group

5.4.4 HMP CHANNEL GROUPS

- Waiting calls refused
- Cyclic hunt group for the channels used for F2C
- Hunt group with the longest idle time from F2E

5.4.5 AGENT HUNT GROUPS

- Waiting calls rejected.
- Cyclic hunt group

5.5 INTERCOM SUPERVISION

IMPORTANT: From R6.1 PBX version, it is possible to use CSTA protocol for supervising the PBX subscriber in directory portal application. It is recommended to use CSTA instead of Intercom supervision and to define a Supervision CSTA link in M5000 CC.

This function is used to monitor traditional user sets (not supervised via CSTA, even if it also works for sets supervised by CSTA). Supervision information is displayed in the M5000 CC directory application. Supervision is performed on M5000 CC via the VTI/XML protocol, and a VTI/XML telephone link must be defined. To monitor these sets virtual sets, referred to below as supervisor sets, are used. A supervisor set can be used to monitor up to 64 sets.

For Intercom supervision, we recommend, in a single site configuration, to set the parameter “Manual intercom

group management" to Yes (in the Telephony parameters management menu). For multi-sites, the configuration must be manual.

DCF 110 is used to define a set for a multi CCO set when it is considered as busy. If DCF is set to FF FF or 0, the set is then considered as busy when there is no longer any free CCO. This is the default behaviour. If DCF is set to 1, the set is considered as busy once a CCO is used (call in progress or on hold).

For multisites, the system configuration must be examined so that the load resulting from the function can be absorbed by the Movacs link. In fact, the intercom function, if wrongly configured, may overload this latter. (For example, if the intercom function is only used for M5000 CC, each virtual set must be declared on the site (cluster) on which the subscribers it is supervising are declared, to avoid having intercom messages between sites (clusters).

5.5.1 MONITORED SETS

All the sets monitored by the same supervisor set must be defined in a supervision group (Number for Intercom group 1, Number for Intercom group 2). The number defining the supervision group used must be between 0 and 252.

5.5.2 SUPERVISOR SET

The supervisor set must have the following characteristics:

- It must be in supervision group number 253 so as to be able to supervise all the sets that are part of any supervision group.
- An A type supervision key must be defined (for call / supervision) for each supervised set.

For PBX version up to **R4.2**

- The set must be a **digital set**.
- The right not to connect the set must be set to YES.

For PBX version from **R5.1**

- The set must be a **VTI/XML IP set**. To create this set, you just have to create a subscriber and not to allocate it a terminal.

5.6 PBX LISTENING/INTERVENTION

The listening function is entirely on the Mitel 5000 X side. It is managed correctly by M5000 CC via CSTA events from release E1T. Listening is allowed on telephone sets with a 40-character display.

IMPORTANT: The listening/intervention function is not available for IP sets.

5.6.1 PREREQUISITES

Setting Configuration data 276 (without reloading) to 1 opens two additional lines in "extension characteristics" (Listening/Intervention allowed / Listening/Intervention accepted) and the line (Listening/Intervention allowed) in "Trunk group characteristics".

From release V11.3 listening / intervention requires a software key code.

Sets A and B have "Listening/Intervention accepted è YES".

Set C has "Listening/Intervention allowed è YES".

5.6.2 OPERATION

A and B are in communication.

If C calls A or B, the display on set C will show, amongst other things, "Intervention" and "Listening".

If C selects "Listening", he will listen in to the communication between A and B without any beep (the handset will crackle slightly) and without notification on the displays of sets A and B.

If C selects " Intervention", he will be able to speak in the communication between A and B; the caller's number is replaced on the display of A and B by C.

Furthermore, if Configuration data 321 keeps its canonical value (0 or FF), a tone (INTRUSION) will be heard in the communication in which the 3 sets are engaged, and will continue throughout the communication.

If Configuration data 321 is set to 1 (without reloading), no tone is connected.

The scenario described above is valid if A or B are in communication with an external caller and if the line "Listening/Intervention allowed" in "Trunk group characteristics" is set to YES.

Functions available during intervention:

- SWAP è selects A or B to release or talk to one or the other.
- BROKER'S CALL è to talk to A or B (the subscriber on the right of the display).
- RECOVERY è to release A or B (the subscriber on the left of the display).

IMPORTANT: The use of these three functions (SWAP / BROKER'S CALL / RECOVERY), available during intervention, is not particularly suited to the needs of a call centre. Their use should be limited.

5.6.3 PBX RESTRICTIONS

Set C cannot be an ATDC.

During Listening or Intervention, flash (R key) is not allowed.

The set called must not have more than one CCO.

IMPORTANT: as of R2.1, setting DCF 206 to 1 (without reset) allows you to call in listening/intervention mode a set protected against call on hold. Since agents' sets must be protected against calls on hold, DCF 206 must be set to 1.

These functions may not be available on a multi-site network with Configuration data DCF 176 00 or FF.

Listening does not work in B.6D 06 if the communication is not ISDN from end to end (SP_00152). This is corrected in release 1.2 and above.

5.7 SECURING CALLS FOR M5000 CC

Call distribution mechanisms must be implemented on the MiVoice 5000 to protect the application.

5.7.1 PRINCIPLE

On the PBX: MiVoice 5000 call distribution services used

Each incoming T2 arrives on a Mitel 5000 X call distribution service. The DID number is translated for each incoming TG (T2) arriving at a different number of the incoming plan. The translated number is then routed to a call distribution service. The call distribution service is defined as follows:

- Day: Virtual (hunt) group for FTI link
- Reduced: Agent set group or super group for multisite distribution
- Night: OP GP
- Calendar (Schedule): day, permanently

5.7.2 PROCEDURE

With this type of configuration, the call is always available on call pits, no matter the Mitel 5000 X calendar. M5000 CC then takes control of the call and distributes it to an agent.

If M5000 CC is out of service or unable to process the call within the DID return to ATDC timeout, the call is routed "reduced" at the end of the DID return to ATDC timeout. The call is then presented directly to one of the free agents in the group. The call will be seen as incoming private call if the M5000 CC supervision is still active.

The Mitel 5000 X call distribution cascade mechanisms can be implemented in order, for example, to play a presentation message. Call routing capacities are reduced in reduced operating mode (no routing by skill, etc.).

5.8 AGENTS WITHOUT PC

This M5000 CC operating mode is possible thanks to CSTA which manages status changes via telephone sets: connected, disconnected, ready, not ready, etc.

5.8.1 PRINCIPLE

- Start of agent shift (login: * 47+xxxx value of default numbering plan + password). An agent arriving at his or her workstation in the morning presses the workstation login key or dials the shift start feature number and enters his or her personal password (Alias on M5000 CC). The information is returned to M5000 CC through the CSTA link.

IMPORTANT: It is possible on the PBX or on M5000 CC to move to ready mode automatically after the four-digit password has been entered

- End of agent shift (logout ; # 47 value of default numbering plan): The agent presses the logout key or enters the feature code. The agent is moved to not ready, if not already in this status, and is then logged off.
- Switching to ready / not ready status (* 48 / # 48 numbering plan default values): The agent must switch to ready mode to be able to receive calls. The agent does this by pressing the NotReady/Ready key (NRD/RD) on his or her telephone set. The LED 'hunt group setting allowed/not allowed' is out while the

agent is working. This action is only possible if the set belongs to a group. When an agent leaves his or her workstation it is important with this system that the agent indicates that he or she is no longer at the workstation: the agent must switch to "not ready to receive calls" mode.

IMPORTANT: There is a setting for 'logging out' an agent if that agent does not answer a certain number of calls (5 by default on M5000 CC, 10 by default with Configuration data 140 in auto headset mode on the MiVoice 5000).

5.8.2 USING HEADSET MODE

There are several ways of connecting a call to an agent set automatically; it is possible to:

On M5000 CC: force the call by scripting; in this case the agent does not receive a beep when the call is connected and is put through to the caller directly when the call is presented at the end of the timeout set in the script.

On the PBX: the auto or manual headset modes can be used. For this the set must have one and only one CCO, and must activate the auto headset mode function via the interactive keys. The agent will hear a beep just before the call is connected. In manual headset mode the agent must press the CCO to take the call.

We advise you to use MiVoice 5000 auto headset mode. The M5000 CC connection timeout can also be configured; make sure, however, that the on-hooks on the MiVoice 5000 and M5000 CC sides are not simultaneous (entering 2s on M5000 CC prevents cases of collision).

What happens if the headset is unplugged?

The MiVoice 5000 system takes the following defensive action: it switches the agent to not ready, in manual headset mode, then to general standby

The "general standby" key should be used after the headset has been reconnected. Pressing this key also switches the agent to ready, without the Ready/Not Ready key having to be pressed (single action). The key's label should be defined and may be "Headset reconnection". Using this key will prevent "Only your calls" appearing on the set when calls are received after the headset has been reconnected. Nothing happens when the general standby key is pressed during a call.

Configuration data 193 allows M740 sets to switch automatically to auto headset mode as soon as the headset is reconnected.

If the agent is engaged in a call, the system automatically switches the call to hands free so that the customer can be heard and doesn't end up talking to himself! To avoid hands free mode, the caller must be put on hold before the headset is unplugged; the caller will then hear the music-on-hold. Then, when the agent reconnects his or her handset, the on-hold call is retrieved. The hands-free function is not activated and voice is connected to the headset. At the end of the call the agent is in not ready status and must press the general standby key to switch back to ready and remove the message "only your calls".

If the agent is in Not Ready status when he or she unplugs the headset, the system switches to manual headset mode and Not Ready status automatically. The general standby key must be pressed after the headset has been reconnected to switch back to Ready status (without the Ready key having to be pressed).

If the agent is in Ready and Idle status, the system switches to manual headset mode and Not Ready status automatically. Simply press the general standby key after reconnecting the headset to return to Ready status (without having to press the Ready/Not Ready key).

If the agent is logged out and thus Not Ready, he or she logs on, plugs in the headset, then presses the general standby key to switch to ready status.

If the agent is logged out and thus Not Ready, he or she plugs in the headset and presses the general standby key. The system will refuse to switch the agent to Ready status as the agent is not logged on. The agent must log on and press the Ready/Not Ready key to receive calls.

If the agent is logged out and thus Not Ready, he or she plugs in the headset, logs on and presses the general standby key. The agent is then ready to receive calls.

What happens if the general standby key is used when the headset is connected (not the normal operating mode)?

If the agent is logged out and thus not ready, he or she must log on and switch to ready status, as usual.

The agent is ready and idle - if he or she presses the general standby key by mistake, the agent switches to Not Ready status + the message "only your calls" appears. If the agent presses the general standby key again, he or she switches back to ready status (indicator light next to the key) and the message "only your calls" disappears. If the connection mode switches to manual headset, the agent has to unplug then plug in the headset again to re-establish this operating mode.

Nothing happens if this key is pressed during a call.

5.9 REJECT 21

5.9.1 PRINCIPLE

This function rejects calls to a call pit. The rejection is made on the ISDN side. Numerous criteria can be used to trigger reject 21: dates, load, waiting time, etc. The criteria are evaluated at service or administrator level.

This function is useful if a front end IVR capable of managing the cause of reject is used, for example, to re-route calls to another region or make a call pre-qualification.

5.9.2 REJECTED DNIS CALLS

In the PBX configuration, to view the statistics using DNIS filters, set bit 4 of DCF 397 to 1.

This function is available as from version E2JW patch VR25962AAE050Z for F4 and RE318AAF.30Z F1.

5.10 CALL ENCRYPTION

From R5.3 SP1, PBX offers full call encryption. Full call encryption concerns voice and signal flows. It is available on A53xxip and A67xxi terminals.

The call encryption function is used to secure signal and voice over IP transmissions in an IP network infrastructure:

- Between terminals A53xxip and A67xxi: voice encryption
- Between terminals A53xxip/A67xxi and an Mitel 5000 X series system (EIP card): voice encryption
- Between terminals A53xxip/A67xxi and an Mitel 5000 X series system / MiVoice 5000: signal encryption (TLS)
- Between two Mitel 5000 X series / MiVoice 5000 Server systems on an inter-site link (multi-site IP): signal encryption (TLS)
- Between two TDM terminals (analogue, digital terminals - 5300, 675x, DECT and S0), through Mitel 5000 X series systems on an inter-site link: voice encryption between two EIP cards (communication between the EIP card and TDM terminal is not encrypted)
- Between a TDM terminal (analogue, digital - 5300, 675x, DECT and S0) or a TDM trunk and a terminal A53xxip/A67xxi, through Mitel 5000 X series systems: voice encryption between the EIP card and terminal A53xxip/A67xxi.

5.10.1 RESTRICTIONS AND LIMITATIONS

For R5.3 SP1, call encryption is not available for:

- DECT terminals connected to a DECT/IP infrastructure
- H323 terminals
- SIP and H323 trunks
- i2052, M5000 CC, TWP and UCP applications / terminals.

5.10.2 CONFIGURING CALL ENCRYPTION ON A SINGLE-SITE NETWORK USING A SELFSIGNED CERTIFICATE

5.10.2.1 CHECK THAT THE ENCRYPTION LICENCE HAS BEEN ACTIVATED

- Menu Telephony service > System > Info > Licences (2.1.3).
- The encryption licence status must be Allowed.
- If not, enter the new licence authorising encryption in the Keycode field.

5.10.2.2 CHECK THAT THE TELEPHONE SUBSCRIPTIONS ON WHICH TERMINALS A53XXIP/A67XXI ARE REGISTERED ARE ALLOWED TO USE THE ENCRYPTION FUNCTION

- Menu Telephony service > Subscribers > Subscriptions > Characteristics (1.2.3)
- For each subscription, check that the parameter Right to encryption is ticked.

Note: By default, all the subscriptions have the right to encryption.

Note: The encryption right may equally be associated with a feature class via the menu Telephony service > Subscribers > Rights > Feature classes (1.4.3).

Caution: *A terminal A53xxip/A67xxi set as encrypting but whose subscription does not give an encryption right will have its signals encrypted but not its voice*

5.10.2.3 ACTIVATE THE VOICE AND SIGNAL ENCRYPTION FUNCTION THEN THE SELF-SIGNED CERTIFICATE

- Menu Telephony service > Network and links > Quality of service > Encryption and IP parameters (4.3.4)
- By default, the status of the encryption function is FORBIDDEN.
- Tick the voice terminals encryption box.
- Leave the auto-signed certificate box ticked.
- Check that the status of the encryption function changes to IN SERVICE and that the certificate has consistent validity dates.

5.10.2.4 CHECK THAT THE EIP CARD AVAILABLE IN THE MITEL 5000 X SERIES SYSTEM IS IN SERVICE

- Menu Telephony service > System > Configuration > Cards > Mother board/migration (2.3.4.2): the EIP card must be in service.

5.10.3 CONFIGURING CALL ENCRYPTION ON A SINGLE-SITE NETWORK USING A TRUSTED CERTIFICATE

Obtain from the relevant authority the certificates needed for call encryption. In this case, the certificate is a TRUSTED certificate. This type of certificate can be generated within your domain (5.10.4).

5.10.3.1 CHECK THAT THE ENCRYPTION LICENCE HAS BEEN ACTIVATED

- Menu Telephony service > System > Info > Licences (2.1.3).
- The encryption licence status must be Allowed.
- If not, enter the new licence authorising encryption in the Keycode field.

5.10.3.2 CHECK THAT THE TELEPHONE SUBSCRIPTIONS ON WHICH TERMINALS A53XXIP ARE REGISTERED ARE ALLOWED TO USE THE ENCRYPTION FUNCTION

- Menu Telephony service > Subscribers > Subscriptions > Characteristics (1.2.3)
- For each subscription, check that the parameter Right to encryption is ticked.

Note: By default, all the subscriptions have the right to encryption.

Note: The encryption right may equally be associated with a feature class via the menu Telephony service > Subscribers > Rights > Feature classes (1.4.3).

Caution: *A terminal A53xxip/A67xxi set as encrypting but whose subscription does not give an encryption right will have its signals encrypted but not its voice*

5.10.3.3 ACTIVATE THE VOICE AND SIGNAL ENCRYPTION FUNCTION THEN THE TRUSTED CERTIFICATE

- Menu Telephony service > Network and links > Quality of service > Encryption and IP parameters (4.4.4)
- By default, the status of the encryption function is FORBIDDEN.
- Tick the voice terminals encryption box.
- Untick the auto-signed certificate box.
- The certificate file field then appears. Click Browse to navigate and select the certificate in PKCS12 format (pbx.p12 in this example) issued by an external certification authority. The certificate is provided by this organisation upon the user's demand.
- Then click Download.

- The following lines appear when the certificate file is downloaded:
  - Password

    Alphanumeric character string indicating the password used to decrypt the certificate file. The number of characters entered must be between 4 and 20. The characters are clearly displayed during input then replaced by ******* when the field is validated.

    List of characters authorized for input in this field:

    0 to 9

    A to Z

    a to z

    "" # ' ( ) - _ @ + = % * > < , . ; / :
  - Validation

Button used to request for the certificate to be generated from the previously generated file in PKCS12 format (in the example: pbx.p12). An error is returned if the certificate has not been generated and backed up in the PBX.

u - Enter the password and click Validation.

Once the certificate is generated and stored in the PBX (validity start and end date of the new updated certificate), it is automatically installed if the previous status was "self-signed".

The new certificate is put into service, the new validity start and end date for the active certificate is automatically updated.

- Check that the status of the encryption function changes to IN SERVICE and that the certificate has consistent validity dates.

5.10.3.4 CHECK THAT THE EIP CARD AVAILABLE IN THE MITEL 5000 X SERIES SYSTEM IS IN SERVICE

- Menu Telephony service > System > Configuration > Cards > Mother board/migration (2.3.4.2): the EIP card must be in service.

5.10.4 DOMAIN TRUSTED CERTIFICATE

5.10.4.1 GENERATING A PRIVATE KEY AND REQUEST FILE

Use the following command:

openssl req –new -newkey rsa:1024 –nodes -keyout mykey.pem -out myreq.pem

For the parameter Common Name, you must enter the IP address of the PBX

The command generates two files:

- The mykey.pem File -> private key
- The myreq.pem File -> request file that will be used to generate the certificate

For example:

```
tdehant@bru-tade-ubuntu:~/Desktop/ssl/simu$ openssl req -new -newkey rsa:1024 -nodes -keyout
                    mykey.pem -out myreq.pem
Generating a 1024 bit RSA private key
....++++++
.....................................++++++
writing new private key to 'mykey.pem'
-----
You are about to be asked to enter information that will be incorporated
into your certificate request.
What you are about to enter is what is called a Distinguished Name or a DN.
There are quite a few fields but you can leave some blank
For some fields there will be a default value,
If you enter '.', the field will be left blank.
-----
Country Name (2 letter code) [AU]:BE
State or Province Name (full name) [Some-State]:Brussels
Locality Name (eg, city) []:Brussels
Organization Name (eg, company) [Internet Widgits Pty Ltd]:Mitel
Organizational Unit Name (eg, section) []:M5000 CC
Common Name (eg, YOUR name) []:192.168.4.16
Email Address []:

Please enter the following 'extra' attributes
to be sent with your certificate request
A challenge password []:
An optional company name []:
```

5.10.4.2 CERTIFICATE GENERATION

In a browser:

- Open the website of the certification authority

  For example:

https://pc-develop-4/certsrv/

- Select the 'Request a certificate' option.
- Select Advanced certificate request.
- In the Saved Request part, copy the contents of the file myreq.pem
- Select **Web Server** as Certificate Template
- Click Submit>
- Approve the application if necessary. For this we must go on the server where you installed the CA, start the Certification Authority tool (in Start -> Administrative Tools). In the Pending Requests list, right-click the certificate, the request id is displayed in the browser where the application has been entered. Select All Tasks -> Issue
- Back in the browser where the application has been entered, click on Home, then click View the status of a pending certificate request. Click Saved-Request Certificate. Select the Base 64 encoded certificate and download. Save the certificate in pbx.cer name in the directory where mykey.pem and myreq.pem were generated files.
- Click on Home, then Download a certificate, certificate chain, or CRL. Select option Base 64 and then click Download CA certificate. Save the CA certificate in the name ca.cer in the same directory as mykey.pem, myreq.pem and pbx.cer

5.10.4.2.1 GENERATION OF THE CERTIFICATE IN PKC12 FORMAT

Use the following command line::

```
tdehant@bru-tade-ubuntu:~/Desktop/ssl/simu$ openssl pkcs12 -export -in pbx.cer -inkey mykey.pem
                -out pbx.pfx -certfile ca.cer
Enter Export Password:
Verifying - Enter Export Password:
```

5.10.4.2.2 IMPORTATION OF THE CERTIFICATE INTO THE PBX

In the PBX, you must go to the Encryption section and IP parameters (4.4.4).

- Uncheck "self-signed Certificate"
- Download pbx.pfx file
- Enter the password used to generate the the file in PKC12 format
- Validate
- Select voice encryption option

5.11 PBX TABLE 56

We have attempted to identify those MiVoice 5000 parameters which may affect M5000 CC operation. The list is undoubtedly not exhaustive.

Reminder YES = 1; No = 0

Code*

(1) Obligatory for operation with virtual groups without IVR

(2) Security for operation with multi-CCO sets

(3) Obligatory in CSTA

(4) Agent set operating mode

(5) To be verified in a multi-server operation

(6) IP IVR operating mode

Table 1:

NO	LABEL	VALUE	CODE*	HEXA	USE
7	TEMPO_SONN_SDA	4000	2	A0 0F	Set with CCO of Call pit / backup processing type
16	TEMPO_SPEC_RENV_PO	60000	2	60 EA	Set with CCO of message call pit type
17	TLGE_DCF_I_SPEUDO_MULTI_SOC	YES	1	01 00	Multisite/ message via CCs
30	TLGE_DCF_I_TRF_LIA_LR_AUTO	1	5	01 00	External TK/TL forwarding

Table 1:

33	DCF_V_NB_CASCADE_RENVOIS	10	1	0A 00	Number of Diverts
34	TLGE_DCF_I_LIM_CASC_SEC_DIR	NO		FF FF	
40	TLGE_DCF_I_TRF_LR_LR_AUTO	1	5	01 00	External TK/TK forwarding Set to 1 to allow TK/TK forwarding.
59	TLGE_DCF_I_DEMANDEUR_TLG	NO		FF FF	If the caller belongs to a hunt group Canonical value 0FFFFH or TLGE_NON (0) The calling party number, seen by the called party, is the number of the calling party set. Value TLGE_OUI (1): The calling party number, seen by the called party, is the number of the hunt group head. This DCF can not be set to 1
84	TLGE_DCF_I_RET_DERN_DS_GROUPE	YES	3	01 00	Last agent Logout, last agent not ready
105	TLGE_DCF_T_NON_SONN_POSTE_LG	NO	3	FF FF	Default ringing pause timeout on grouped line set (if no special timeout is configured via SURVOP)
140	TLGE_DCF_V_NB_CNX_AUTO_INACT_PO	NO	4	FF FF	Number of calls connected automatically without the presence of an agent before switch to manual headset mode (10 by default)
193	TLGE_DCF_I_M740_FORCAG_CNX_AUTO	1	4	01 00	M5000 CC headset mode Auto headset mode on range 2000 M740 sets
206	TLGE_DCF_I_ECOUTINTRV_LOCAL_AUTO	YES	4	01 00	Indicator of respect of call waiting refusal in case of listening/intervention
207	TLGE_DCF_I_MASQ_DER_REROUT_LG	YES	1	01 00	Multiserver/ DNIS indication of last subscriber number rerouted to the group
210	TLGE_DCF_I_ACCEPT_NO_CH_CALL	NO		FF FF	Indicates the acceptance of calls for which the message “no available channel” is displayed (ISDN)
216	TK listening	YES	4	01 00	Listening/intervention
276	TLGE_DCF_I_ECOUTE_INTERV_AUTO	YES	4	01 00	Listening/intervention authorisation indicator
282	TLGE_DCF_V_SENS_DROIT_TR_LIA	2			TG/TG right
301	TLGE_DCF_I_LG_FORT_TRAFIC	1	6	01 00	In case of heavy traffic on the IP IVR channels
354	TLGE_DCF_V_LG_CODE_TRAVAIL	4	3-4	04 00	Login = length of the alias

Table 1:

355	TLGE_DCF_I_MIRE_DUREE_DIRECTE	0		FF FF	Indicates direct display of call duration as well as the charges without this being specifically requested for via the interactive “duration” key, during a simple, outgoing or incoming call with a remote server PC network.
366	TLGE_DCF_I_PRISE_TRAV_ACT_GRP	0	4	00 00	Indicator of automatic set activation or deactivation in a hunt group when shift start or stop prefixes are used. Canonical value 0FFFFH or 0: no activation Value 1**: automatic activation**
397	TLGE_DCF_B_CONFIG_CSTA	1	3	01 00	bit 0= 0 UUS not processed with bit 0=1 UUS processed with CSTA bit1=0 refuse to chain Conferences bit1=1 accept to chain conferences bit 2= 0 ascii coding bit 2= 1 binary coding (by default) bit 3 csta request QueryDevice agent state "modified" = 0 set status = 1 status of set in relation to group (by default) bit 4 reject 21 with caller/called party number = 0 reject with previous interface (by default) = 1 reject with interface comprising the caller/called party number
450	TLGE_DCF_I_DEVIE_EXT_SI_RENVOI	1	5		Divert to external PSTN + external forwarding allowed. Warning: to avoid end-to-end connection, allow only PSTN trunk group to QSIG, for example.

IMPORTANT: using virtual groups avoids having to use elements 7 and 16 to secure M5000 CC. This is an important consideration as timeouts 7 and 16 are common to the entire installation.

IMPORTANT: Configuration data 193 = 1 for M740s only operating in automatic headset mode; when the headset is unplugged the MiVoice 5000 defence switches the set to manual headset mode. This parameter switches the set back to automatic headset mode automatically if the headset is plugged in again.

IMPORTANT: Configuration data 140 = 5000. This is required to carry out traffic tests in headset mode during a customer acceptance test. This value must be increased otherwise all the sets switch to manual mode at the 10th call. Remember to re-enter FF FF for operational use.

IMPORTANT: Configuration data 105 = FF FF. This system timeout for sets belonging to a group must remain

FF FF. The idle timeout after a call must be adjusted via SURVOP group by group.

6 RECOMMENDATIONS ON M5000 CC CONFIGURATION

The aim here is not to explain how to configure M5000 CC but to provide information as to when and how to use certain M5000 CC functions.

6.1 CHANGE OF SERVER IP ADDRESS

After the M5000 CC server IP address is changed with IVR HMP, you have to modify the IP address in the following server registers:

HKEY_LOCAL_MACHINE\SOFTWARE\

- SBlabs
- dm3ssp
- IP_addr0

If this address is not modified, there is no sound during an IVR voice call, and the following error is generated:

ipm_setParm failed for devicenumber dxxxxBXCX with error = 10

6.2 OPERATION IN SERVICE MODE

For operation safety reasons, it is advisable to use M5000 CC in service mode (configured by default through setup for the M5000 CC Server Service). In service mode the M5000 CC Server, M5000 CC Media Server and M5000 CC Report Server applications can be restarted automatically after a power failure, thus making the M5000 CC operational again and able to process calls and statistics.

IMPORTANT: Automatic mode must be created after setting the values "max starting service Time" and the number of M5000 CC Media Server start attempts.

IMPORTANT: Do not forget to enter, in the M5000 CC Administrator application, the media services to be started by the system.

6.2.1 CONFIGURING THE SERVICES

Operation in service mode

- M5000 CC Server Service in automatic mode
- M5000 CC Media Server Service in manual mode
- M5000 CC Reporting Server Service in manual mode
- M5000 CC Stream Catcher Service in automatic mode

IMPORTANT: The respective associated processes do not have the same name:

- AgoraServer
- CallServer
- ReportingServer
- StreamCatcherServicer

6.2.2 SERVICES THAT MUST BE DEACTIVATED

The aim here is to give the services which may interfere with M5000 CC operation.

“Routing and remote access” must be disabled, otherwise PC Anywhere may encounter some problems.

6.2.3 CONFIGURATION CHECK

Check that the media servers and M5000 CC Report Server are automatically started when the M5000 CC Server is started

6.3 PRINCIPLE OF CALL ROUTING IN A MULTI-SERVER CONFIGURATION (SERVER 1 CALL TO BE TRANSFERRED TO SERVER 2)

Server 1 notifies server 2 via IP that there is a call to be transferred.

Server 2 indicates via IP which remote DNIS number is to be used from those available, bearing in mind that only one call at a time is transferred per remote DNIS number. The remote DNIS number limits the number of calls which go from one server to another simultaneously. However, the queue of the remote virtual group downstream must be greater than the number of remote DNISes.

Server 1 makes a blind transfer or diverts the call to the number indicated, with or without a prefix. There is one prefix per remote server.

6.4 REPORT SERVER AND WEB SERVER

6.4.1 SCREEN RESOLUTION

It is advisable to use a 1024 x 768 screen resolution on the report server so the reports can be displayed and printed correctly.

6.4.2 SECURITY

For security reasons, do not install M5000 CC, the database and the web server hosting the M5000 CC web service on the same PC. The web server may be attacked by an “unknown” client. The M5000 CC Server is vulnerable. It is thus recommended to install the web server on a different PC.

6.5 M5000 CC SERVER AND MEDIA SERVER

IMPORTANT: it is important that the “regional settings” be the same on the media server and M5000 CC sever.

Note: Firewall have to be disabled on M5000 CC Server machine to let fat client to connect to it

6.6 CALL ENCRYPTION

From V3.2, the system offers full call encryption. Full call encryption concerns voice and signal flows.

6.6.1 RESTRICTIONS AND LIMITATIONS

Call encryption is only available for SIP IVR resources.

6.6.2 CONFIGURING CALL ENCRYPTION ON A SINGLE-SITE NETWORK USING A SELFSIGNED CERTIFICATE

If a selfsigned certificate is used for terminals, this certificate must be used in the SIP telephony link using call encryption (see sheet U-329).

It must be imported into the 'CA Certificate' (while the other fields should be left empty).

By default, this certificate is located under /opt/a5000/infra/utd/etc/dyn/ssl.crt/ and is named pbx.crt.

6.6.3 CONFIGURING CALL ENCRYPTION ON A SINGLE-SITE NETWORK USING A TRUSTED CERTIFICATE

If a certificate from an external certification authority is used for terminals, this certificate must be used in the SIP telephony link using call encryption (see sheet U-329)

It must be imported into the 'CA Certificate' (while the other fields should be left empty)

By default, this certificate is located under /opt/a5000/infra/utd/etc/dyn/ssl.crt/ and is named ca.crt.

With this certificate, you can increase security by using mutual authentication. This can be done by filling others fields in the SIP telephony link (RSA Certificate, Local key certificate and Local Key Password).

Those elements can be generated within your domain (mykey.pem, hmp.cer).(see 6.6.4)

6.6.4 DOMAIN TRUSTED CERTIFICATE

6.6.4.1 GENERATING A PRIVATE KEY AND REQUEST FILE

Use the following command:

openssl req-new-newkey rsa: 1024-nodes-keyout mykey.pem out myreq.pem

The command generates two files:

- The mykey.pem File -> private key
- The myreq.pem File -> request file that will be used to generate the certificate

For example:

```
tdehant@bru-tade-ubuntu:~/Desktop/ssl/simu$ openssl req -new -newkey rsa:1024 -nodes -keyout
                mykey.pem -out myreq.pem
Generating a 1024 bit RSA private key
....++++++
.....................................++++++
writing new private key to 'mykey.pem'
-----
You are about to be asked to enter information that will be incorporated
into your certificate request.
What you are about to enter is what is called a Distinguished Name or a DN.
There are quite a few fields but you can leave some blank
For some fields there will be a default value,
If you enter '.', the field will be left blank.
-----
```

Country Name (2 letter code) [AU]:BE
State or Province Name (full name) [Some-State]:Brussels
Locality Name (eg, city) []:Brussels
Organization Name (eg, company) [Internet Widgits Pty Ltd]:Mitel
Organizational Unit Name (eg, section) []:M5000 CC
Common Name (eg, YOUR name) []:192.168.4.16
Email Address []:

Please enter the following 'extra' attributes
to be sent with your certificate request
A challenge password []:
An optional company name []:

6.6.4.2 CERTIFICATE GENERATION

In a browser:

- Open the website of the certification authority

  For example:
  https://pc-develop-4/certsrv/
- Select the 'Request a certificate' option.
- Select Advanced certificate request.
- In the Saved Request part, copy the contents of the file myreq.pem
- Select User as Certificate Template
- Click Submit>
- Approve the application if necessary. For this we must go on the server where you installed the CA, start the Certification Authority tool (in Start -> Administrative Tools). In the Pending Requests list, right-click the certificate, the request id is displayed in the browser where the application has been entered. Select All Tasks -> Issue
- Back in the browser where the application has been entered, click on Home, then click View the status of a pending certificate request. Click Saved-Request Certificate. Select the Base 64 encoded certificate and download. Save the certificate in hmp.cer name in the directory where mykey.pem and myreq.pem were generated files.
- Click on Home, then Download a certificate, certificate chain, or CRL. Select option Base 64 and then click Download CA certificate. Save the CA certificate in the name ca.cer in the same directory as mykey.pem, myreq.pem and hmp.cer

6.6.4.3 CERTIFICATE AND PRIVATE KEY MERGING

Use the following command to generate the file 'hmp.pem' to use with fields 'RSA certificate' and 'RSA private key' in M5000 CC.

cat hmp.cer mykey.pem>hmp.pem

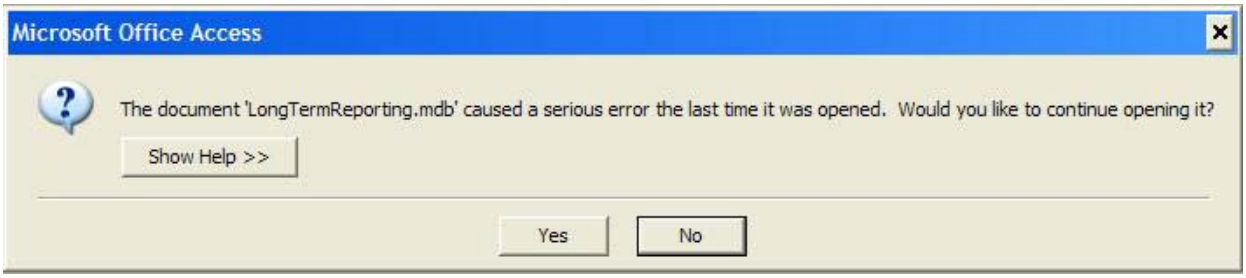
6.7 SPECIAL SERVER FEATURES IN WINDOWS 2003

Since the security configuration has been increased on servers 2003, the use of Outlook 2003 for mail and IIS 6.0 (see next chapters) lead to a more rigorous configuration of these components than in Windows 2000.

6.7.1 ACCESS 2003

It is advisable to set the minimum security level to the level of Access 2003 in the menu Tools-Macro-Security, or else the M5000 CC databases will use some macros that are not working.

In fact, some problems of report server connection to the database may occur after Access 2003 is updated.



This error message may be displayed when you try to open a file marked as damaged or deactivated by an

Office application. The error will continue to be displayed each time an attempt is made to open the file, even if this latter has been recovered or repaired.

The file is contained on the **Disabled items** list because, when it was opened, the error occurred more than once or the application was closed. These error messages enable you to avoid possible problems that may occur if the file had been open and if this would have led to the freezing of other already open files.

If the file had been correctly recovered, replaced or deleted, you can remove it from the list of disabled files reactivate it) by selecting **Help, About Microsoft Office <Application name>**, and by clicking **Disabled items....**

Reactivating the file does not necessarily mean that the application can be opened. The file must be recovered from a backup copy or a fully recovered file.

For more information about this error message, go to: <http://watson.microsoft.com/dw/errormessages.asp?ProductName=Office11&EventSource=OfficeErrorMessages&EventID=10043&Language=1036&productBuild=11.0.5525.0>

All these problems are due to this “security level of macros” in “Microsoft Access”:

- If, after Office XP is upgraded to Office 2003, the M5000 CC Server is started, the report server does not connect to the database because “Microsoft Access” cannot open the file "LongTermReporting.mdb" (the level of security of the macros is basically set to “average”)
- If the M5000 CC Server is stopped, the security level is set to minimum (Tools/macro/ security/low security level), the M5000 CC Server is restarted, and "Microsoft Access" cannot still open the file "LongTermReporting.mdb" because an error window is displayed
- You have to force the opening of the file "LongTermReporting.mdb" manually, then restart the M5000 CC Server.

In summary, proceed as follows:

- Stop the M5000 CC Server.
- Upgrade Office XP to Office 2003.
- Start Excel and Access a first time.
- Modify the security level in Access (Tools/macro/security/ low security level).
- Then restart the M5000 CC Server.

(If you restart the M5000 CC Server before modifying the security level, open the file "LongTermReporting.mdb" manually).

6.7.2 ACCESS 2007

If the statistics constructor does not start when Access 2007 is used on the PC, change the macro security parameters:

In Access click the Microsoft Office button.

(The button on the upper left corner), then click Access options.

Click the Confidentiality management centre, Confidentiality management centre parameters, then macro parameters.

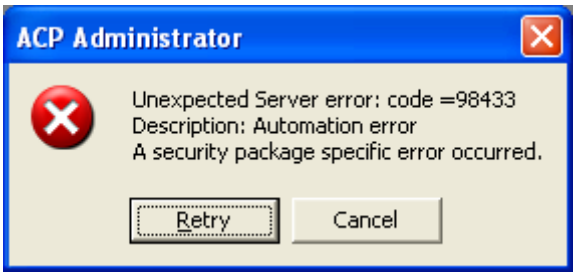
Then click “Activate all macros (not recommended as the potentially dangerous code may be executed)”.

6.8 SPECIAL SERVER FEATURES IN WINDOWS 2008

6.8.1 COMPATIBILITY WITH FAT CLIENTS ON WINDOWS XP

Since the security configuration has been modify on Windows 2008, it’s now necessary to make some modifications in Active Directory for compatibility between fat clients installed on Windows XP and M5000 CC Server installed on Windows 2008. This modification is necessary only if the domain functional level is Windows 2008.

If this change is not made, the following error will be displayed during the connection from fat clients to M5000 CC Server:



To workaround this problem, it's necessary to register a SPN (Service Principal Name) in Active Directory for the account used by M5000 CC (the account specified during M5000 CC setup).

To register the SPN, the following command must be executed by a domain administrator on the domain controller:

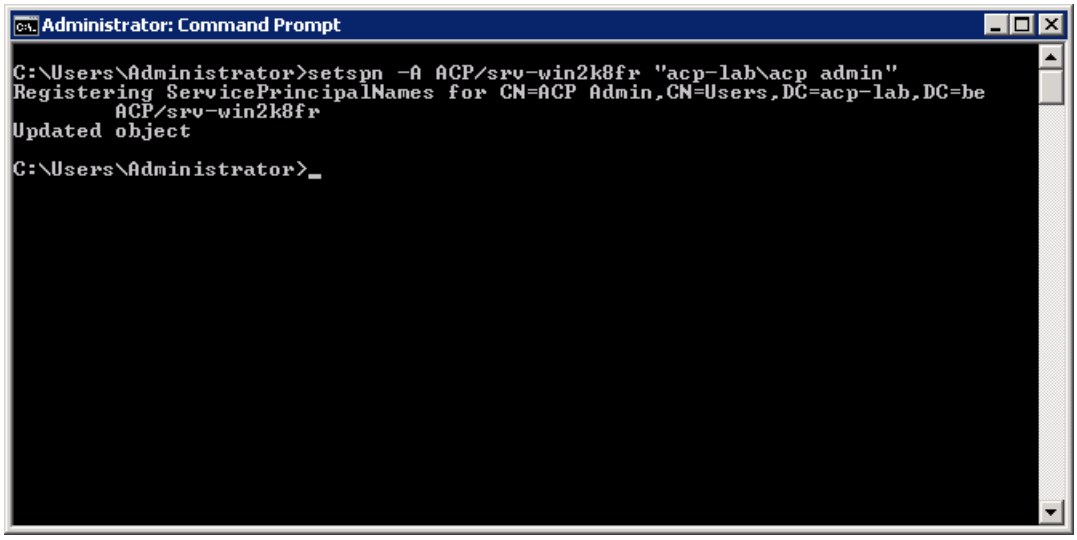
- **setspn -A *M5000CC/M5000CCServerName* "*DOMAIN\M5000CCUserName*"**

in this command,

M5000CCServerName is the name of PC where is installed M5000 CC Server

DOMAIN\M5000CCUserName is the Windows account used during M5000 CC setup.

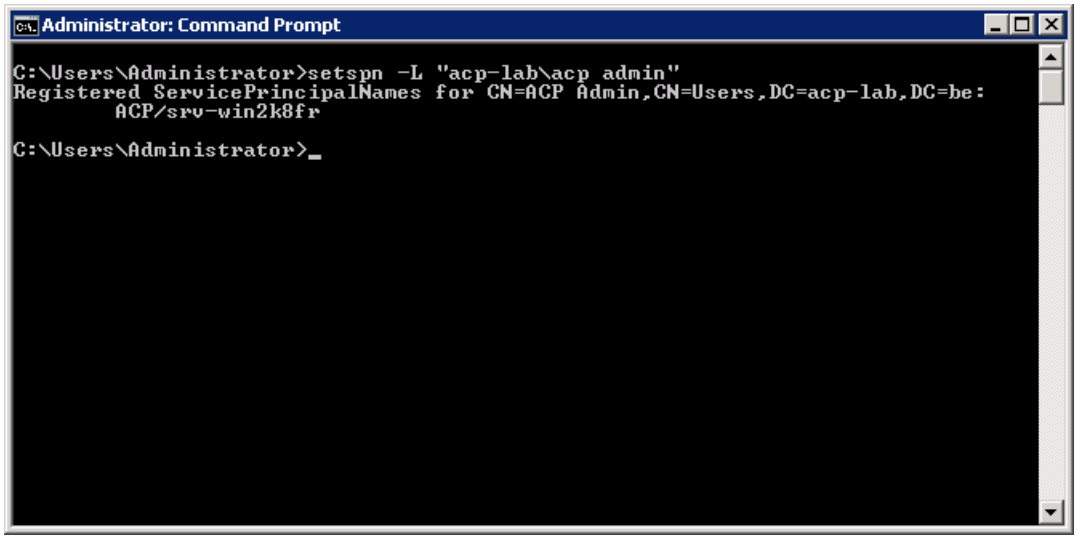
Example:



The following command can be used to verify that the SPN is correctly registred:

- **setspn -L "*DOMAIN\M5000CCUserName*"**

Example:



6.9 MANAGING DUAL NETWORK CARD SYSTEM IN CONFIGURATIONS WITH MORE THAN 64 AGENTS

It is advisable to separate the voice PBX LAN from data LAN when the number of M5000 CC agents is above 64 (see installation documentation). For this, we have two network cards on the M5000 CC Server / media server.

The two network interfaces are used for two separate subnets:

- The "PBX LAN" interface (PBX)
- The "SRV LAN" (data server)

It is then necessary to manage the interface priorities by referring to the network management Windows menu.

Network & Dial-Up ' Advanced ' Advanced Settings ' Adapters & Binding

In the Connections window: Indicate that the PBX interface is on level 1.

It is also advisable to disable the DNS and WINS on the PBX interface. This prevents the conflict of PC message and WINS broadcast on the PBX LAN.

6.10 SERVER REGISTRY

IMPORTANT: Modifications made in the registry can cause system malfunction. Modifications must be made in collaboration with technical support. The values entered are not checked. You must therefore be aware of the consequences of your selections, paying particular attention to the remarks in the tables below.

[HKEY_LOCAL_MACHINE\SOFTWARE\Dialog Systems\Agora\General Information]

Table 1:

NAME	INITIAL VALUE	DESCRIPTION	REMARKS
Auto restart of Server by service if not alive	0	For configuring the behaviour of the Windows service corresponding to the M5000 CC Server in case this latter crashes. Values: 0 = the service stops in case of M5000 CC Server failure; 1 = the service may execute a command according to the value of the register "Command when Server not alive", the restart the M5000 CC Server.	
Command when Server not alive	(empty)	For specifying the command that must be executed in case of M5000 CC Server failure. Values: empty = no command is executed; another value = the command indicated is executed by the Windows service before the M5000 CC Server is executed.	
GlobalInboundStatusActivation	1	Deactivates calculation of "global" real-time statuses, in other words statuses of all incoming Services. Values: 1 = active; 0 = inactive.	
Duration before removing TCP messages	180	Duration (in seconds) after which a Server purges the queue of messages it has to send to another Server (overflow or innerflow) if the TCP connection is not set up	
TAPI Extensions menu size ratio	0,75	Displays the very long menus in several columns so that they can still be seen on the screen. This is the ratio of the menu height to the screen height.	Must be between 0.2 and 0.9.

Table 1:

MinimumClosingDuration	10	Reject 21: minimum duration (in seconds) which must elapse between a Service closing then re-opening again.	Hysteresis: prevents a Service opening and closing too frequently.
Unmonitored Agent Extension Check Delay	15	Period (in minutes) before a further attempt to supervise an agent telephone set is made (when the set is not supervised)	
Unmonitored Automatic Extension Check Delay	1	Period (in minutes) before a further attempt to supervise an IVR resource or call pit is made (when the call pit is not supervised)	
Maximum of Attempt in replication	60	Maximum number of attempts at external replication (by saving).	A new attempt is made approximately every 15 seconds.
FirstDayOfWeek	0	Selection of first day of week for weekly consolidation of statistics. Values: 0 = determined by the operating system; 1 = Sunday; 2 = Monday; …; 7 = Saturday	
Force External Consolidation at Start up	0	For starting external consolidation immediately when the system is started (if this latter is <> 0)	
Table size for TemporyErrors	12500	Size, in StatBuffer.cst, of the circular table containing the information relating to statistical records for which one (or more) new replication attempts must be made.	
Number maximum of minutes for LongTermReporting response	5	Number of minutes after which the report Server, if it has not received an answer to its query, aborts and reruns the LongTermReporting Access process.	Do not enter a low value as executing a long report may take some time.
Number of minutes to wait for Tapi Gateway Service	5	Unused	
Automatic Refresh Duration	36000	Do not change.	
Outbound flow controller: max. number of occurrences per time unit	10	Maximum number of outgoing calls assigned to agents per time unit.	
Outbound flow controller: time unit [seconds]	3	Time unit (in seconds) for assigning outgoing calls to agents.	

[HKEY_LOCAL_MACHINE\SOFTWARE\Dialog Systems\CSTA]

IMPORTANT: You need to understand the principles of CSTA and its status model before modifying the parameters.

Table 2:

NAME	INITIAL VALUE	DESCRIPTION	REMARKS

Table 2:

Minimum Device Initiation Interval	400	Minimum duration in milliseconds between a TransferCall CSTA request and initiation of the previous request on the same device	
Read DNIS on IVR resources in Called Device field	0	Selection of CSTA event field Delivered in which the DNIS is read. Values: 0 = RedirectionDevice field; others = CalledDevice field	See the on-line help
Use agent state of QueryDevice for calls resynchronization	1	Resynchronisation of calls (detection of phantom calls based on QueryDevice). Values: 0 = inactive; others = active	See the on-line help
Maximum number of QueryDevice at a time (in %)	5	Maximum number of devices for which the QueryDevice function is called simultaneously (every 5 to 10 seconds). Expressed as a percentage of the total number of devices supervised.	
Transferred event after SingleStepTransfer	1	Indicates whether a Transferred event (value: 1) or a Diverted event (value: 0) is to be expected after a blind transfer.	Only old PBX releases send a Diverted event
MaxDivertFailNbr	10	Maximum number of successive redirection failures after which a call is no longer considered to need processing.	
MaxWaitingDurationForSingleActions	5	Maximum duration (in seconds) during which the system waits for events linked to a single action (example: the event Established after an answer-call request) => set this value to 15 s.	
NumNewAttemptsAfterFailedRedirectFromAgent	1	Number of further attempts after a call redirection error from an agent extension.	
Number of failed actions before QueryDevice on target	3	If several attempts to send (redirections or transfers) calls to a given destination fail, the status of the destination is tested via QueryDevice. This registry is used to specify the number of failures.	
Maximum Initiations By Time Unit	5	Maximum number of CSTA queries initiated (sent to the MiVoice 5000) per number of milliseconds.	Avoids bursts in the MiVoice 5000. Applies only to MonitorStart, MonitorStop and SetFeature queries
Time Unit For Maximum Initiations	1000	Maximum number of CSTA queries initiated (sent to the MiVoice 5000) per number of milliseconds.	Avoids bursts in the MiVoice 5000. Applies only to MonitorStart, MonitorStop and SetFeature queries

Table 2:

PNIA Tracking	-1	Display (value -1) or non-display (value 0) of number translations within the scope of PNIA configuration in the server tracking	Read every minute by the server; so no need to restart the server if the registry is modified. Does not have any impact on non-PNIA configurations.

6.11 RECOMMENDATIONS CONCERNING THE USE OF STREAMCATCHER

A “read-me” document is available on the M5000 CC DVD.

Some elements are not entered in the registry of the server PC on which Streamcatcher is installed. It is necessary to pay attention to the TCP port used by this application. In fact, ports 7000 to 7010 are used and no check is carried out when other TCP ports are configured.

6.12 FAT CLIENT AGENT PC

The recommendations for the agent application are:

Install only one agent application per PC.

Do not use 0 as first number in the alias as connection will be denie

6.13 SSL CONFIGURATION ON THE WEB SERVER

This section explains how to configure the IIS server to allow SSL (Secure Socket Layer) connection to the portal. The configuration is based on a certificate generated by the service "Active Directory Certificate Services" of Windows. It's also possible to use a certificate generated by an external certification authority but this procedure will not be detailed here. The procedure described here is based on "Windows 2012 Server" but it can be easily adapted to another version.

In the following, two servers will be used:

- srv-w2k12-1: M5000 CC Server
- srv-w2k12-2: server where "Active Directory Certificate Services" will be installed.

6.13.1 "ACTIVE DIRECTORY CERTIFICATE SERVICES" INSTALLATION

This paragraph can be ignored if an certification authority is already installed in the domain.

On srv-w2k12-2:

- Login with a domain administrator account
- In "Server Manager", select the menu Manage -> Add Roles and Features.
- In the wizard, click three times on "Next >" to display the page "Server Roles".
- Add the role "Active Directory Certificate Services" and the functionality "Certification Authority Management Tools".
- Leave the default options on the other pages and terminate the installation.
- When the installation is finished, click on the button Notifications in the "Server Manager" and click on "Configure Active Directory Certificate Services on the destination server".
- In "AD CS Configuration" window, click on "Next >".
- On the "Role Services" page, select "Certification Authority".
- On the next page, select "Enterprise CA" as setup type.
- On the page "CA Type", select "Root CA".
- Leave the default options on the other pages and complete the installation clicking on the button "Configure".

6.13.2 CERTIFICATE AND SSL CONFIGURATION ON THE IIS SERVER

On srv-w2k12-1:

- Login with a domain administrator account.
- Open "Internet Information Services (IIS) Manager" from Tools menu in "Server Manager".
- In the connections list in the left part, select the server srv-w2k12-1.
- In the Features view, open the feature "Server Certificates".
- In the actions list in the right part, select "Create Domain Certificate...".
- On the page "Distinguished Name Properties" enter the required information. The "Common Name" property must be set to the server name: srv-w2k12-1.
- On the next page, enter the certification authority in the form CertificateAuthorityName\ServerName. To find the Certificate Authority Name, go to the server where the Certification Authority is installed (srv-w2k12-2 in the example) et start the tool "Certification Authority" from Tools menu in "Server Manager". By default the name will have the format DomainName-ServerName-CA. The full name to enter on the page "Online Certification Authority" will have the format DomainName-ServerName-CA\ServerName (acp-lab-SRV-W2K12-2-CA\srv-w2k12-2 in the example).
- In the property "Friendly name", enter a name to identify the certificate. For example "M5000 CC Portal".
- Click on the button "Finish" to terminate the certificate installation.
- In the connections list in " Internet Information Services (IIS) Manager", expand the tree to display the site "Default Web Site". Select this site and in the Actions list on the right part, click on "Bindings...".
- In the window "Site bindings", click on "Add..." button.
- In the window "Add Site Binding", select https as binding type and select the certificate created in the previous step (M5000 CC Portal) in the "SSL Certificate" list. Next click on OK and Close buttons to close the windows.

6.13.3 VIRTUAL DIRECTORY CONFIGURATION IN "M5000 CC ADMINISTRATOR" APPLICATION

In "M5000 CC Administrator" application, the URL for virtual directories must be adapted to use https protocol instead of http.

On srv-w2k12-1:

- Start "M5000 CC Administrator" application and connect to M5000 CC.
- Open the menu File -> Properties...
- In the properties window, select the tab "Published folder" and adapt the virtual directory URL. For the example, the URL will be: https://srv-w2k12-1/Published Files.
- Next select the tab Recording and adapt the virtual directory URL in the same manner. For the example, the URL will be: https://srv-w2k12-1/Published Files/Recordings.
- Close the properties window clicking on OK button.

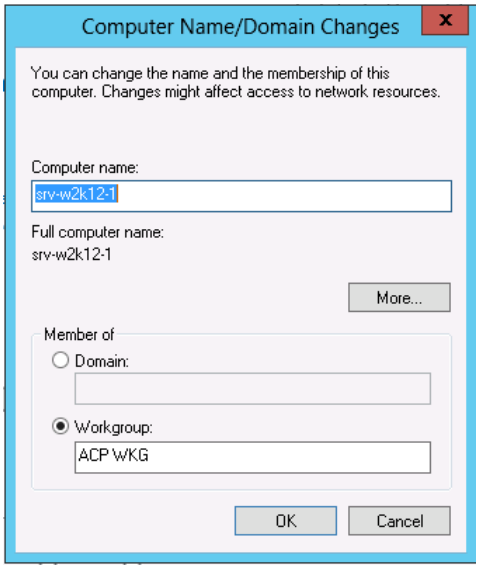
It should now be possible to connect to the portal using the URL https://srv-w2k12-1/portal

6.14 M5000 CC CONFIGURATION IN WORKGROUP ENVIRONMENT

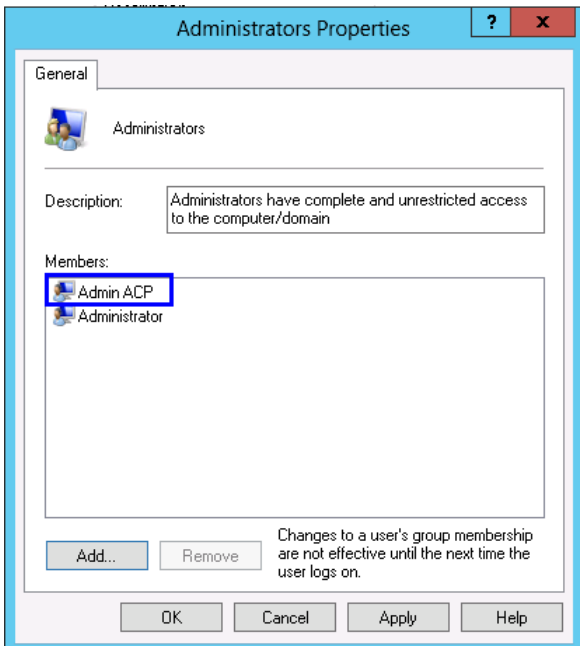
To use M5000 CC in a Workgroup, please follow these recommendations.

6.14.1 INSTALLATION

- Configure the server in workgroup

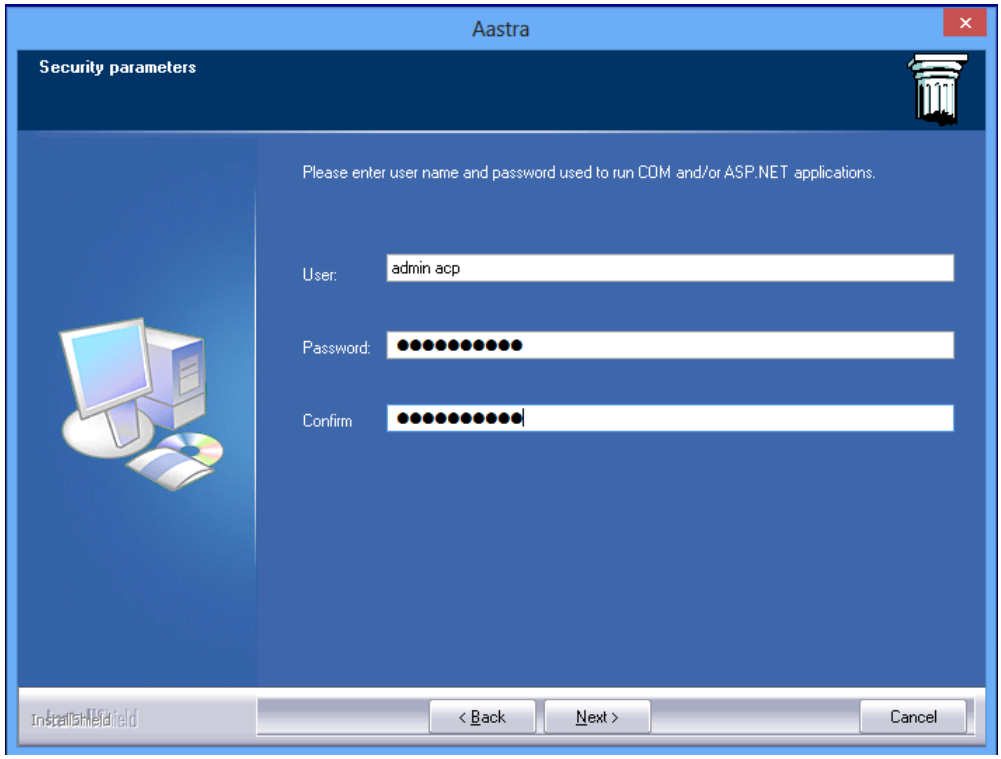


- On all PC where M5000 CC must be installed, use a Windows account member of local *Administrators* group to execute the setup



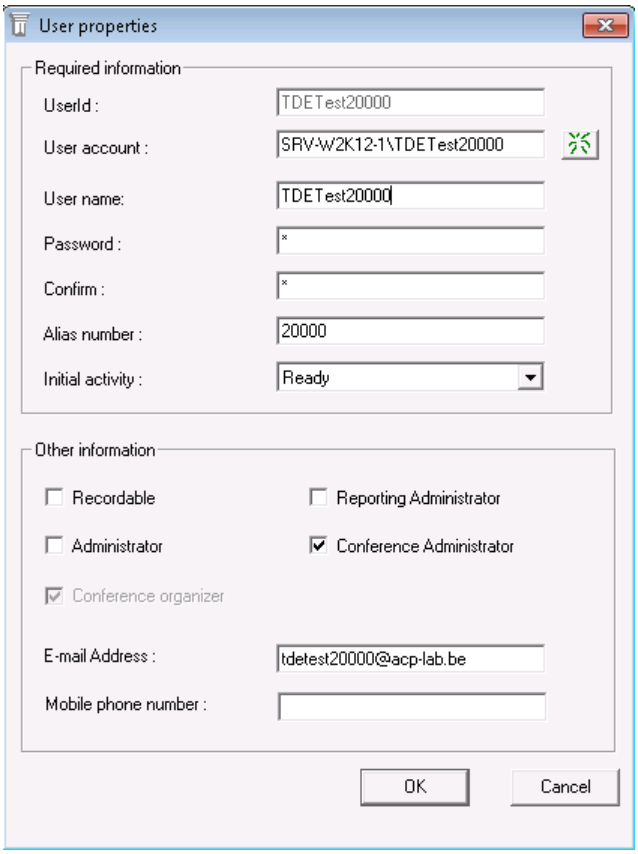
- During M5000 CC setup, in the window *Security Parameters*, in the *User* field, enter only the user name of the Windows account

.



6.14.2 USER CONFIGURATION

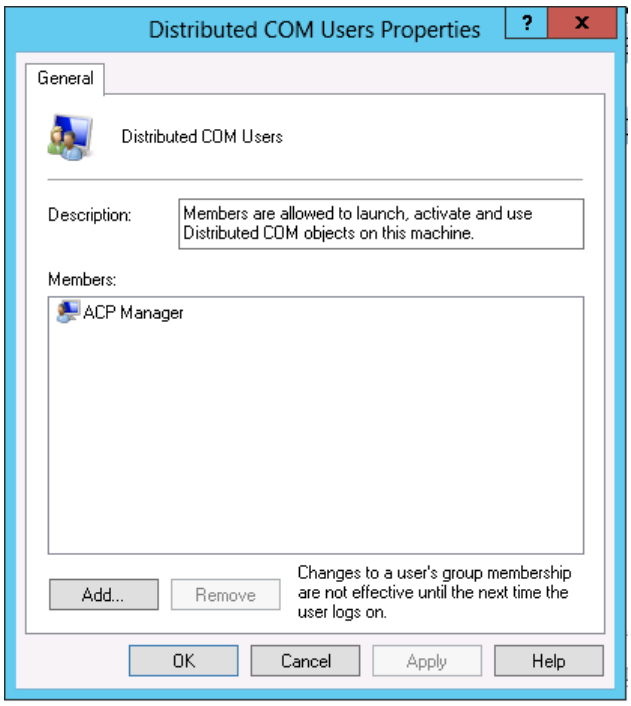
- For each portal user:
  - Create a Windows account on M5000 CC Server.
  - In M5000 CC Administrator, during user creation, enter the user account in the form *hostname**UserName* where *hostname* is the computer name of the M5000 CC Server.



- On the client PC, create the same Windows account (same user name and same password) for the user. This step is only required if you want to use the *Single Sign-On* functionality when connecting to portal.

• For each person wishing to use heavy clients (M5000 CC Administrator, M5000 CC Service Manager, M5000 CC User):
  - Create a Windows account on M5000 CC Server.
  - Give to user Read/Write access on the M5000 CC File Structure share.
  - Add the Windows account in the local *Distributed COM Users* group on M5000 CC Server

.



- On the client(s) PC, create the same Windows account (same user name and same password) for the user.

Note:

If the user must be logged on the client PC with an different account of the previously created (ea. User logged with a domain account), it will be necessary to create special shortcuts to launch M5000 CC client applications.

On the desktop of the user: make a copy of shortcuts M5000 CC Administrator, M5000 CC Service Manager, M5000 CC User and rename them. For each new shortcut:

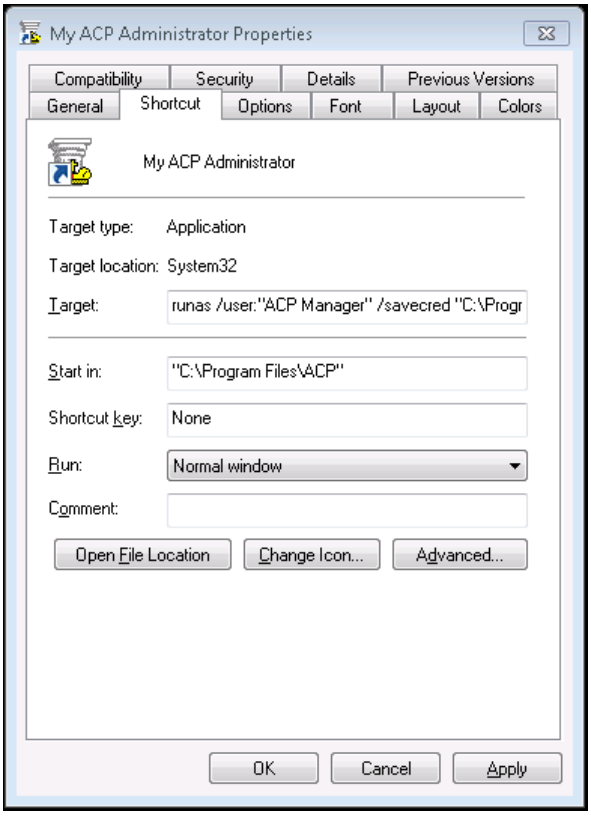
- right click on the shortcut and select the menu *Properties*
- in the field *Target*, add the following command at the beginning of the line:

runas /user:UserName /savecred

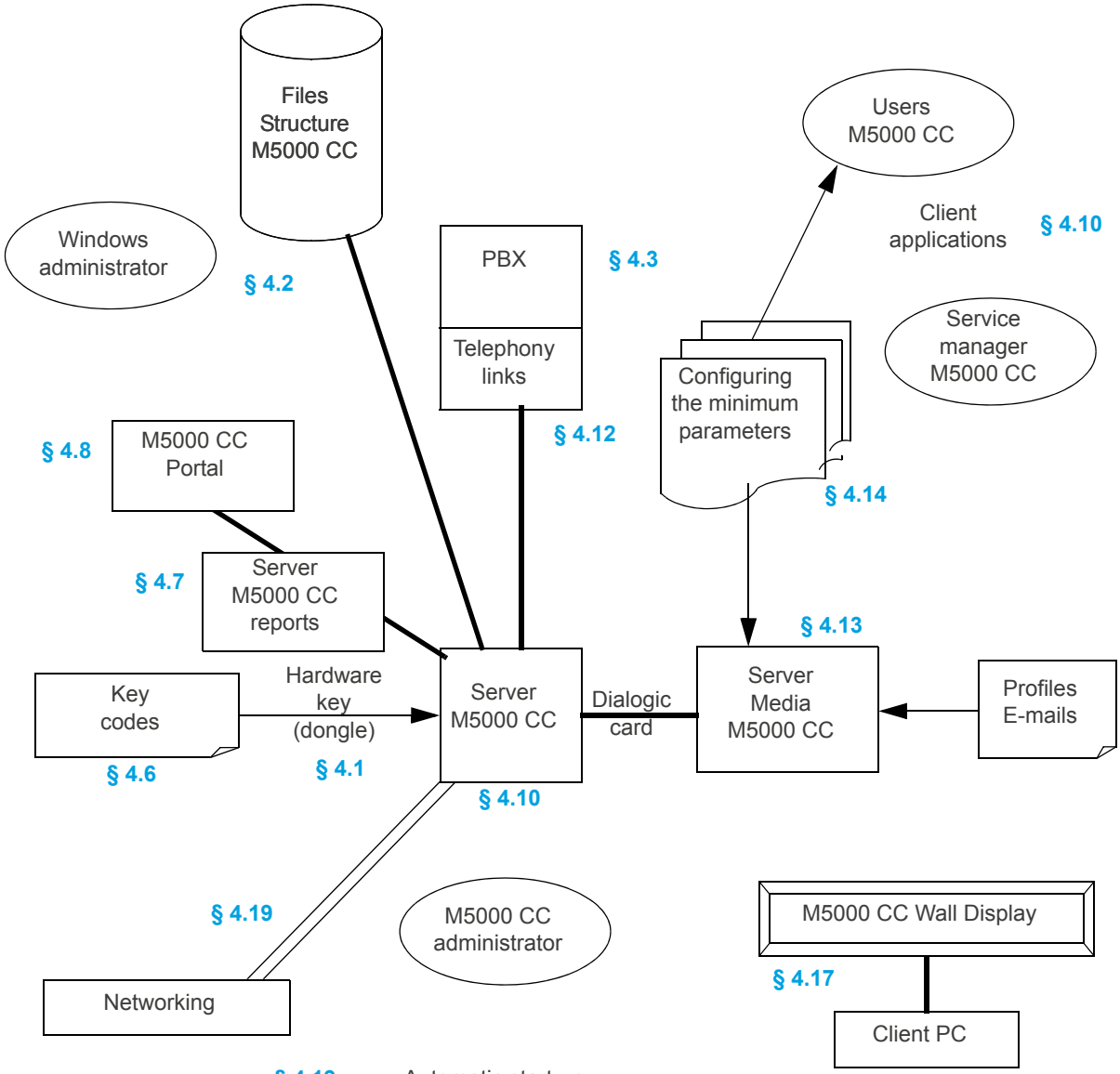
where *UserName* is the user name of the account created previously on the server and the client.

- click on *Change Icon...* button and select the icon of the application in the folder *c:\program files*\M5000 CC (or *c:\program file (x86)*\M5000 CC for OS 64 bits).

When client application is launched for the first time, it will be necessary to enter the password of the account used in the *runas* command.


My ACP Administrator Properties
Compatibility
Security
Details
Previous Versions
General
Shortcut
Options
Font
Layout
Colors
My ACP Administrator
Target type:
Application
Target location:
System32
Target:
runas /user:"ACP Manager" /savecred "C:\Progr
Start in:
"C:\Program Files\ACP"
Shortcut key:
None
Run:
Normal window
Comment:
Open File Location
Change Icon...
Advanced...
OK
Cancel
Apply

7 GENERAL INSTALLATION DIAGRAM



- § 4.19 • Automatic start-up
- § 4.20 • Night mode
- § 4.21 • Network broadcasts and activity
- § 4.22 • Installation upgrade
- § 4.23 • Maintenance mode
- § 4.24 • Tracking tools
- § 4.25 • Installation with PC anywhere (option)
- § 4.26 • Mail server configuration (e-mail)
- § 4.27 • Outlook security
- § 4.29 • System backup

PLATE 7.1 GENERAL INSTALLATION DIAGRAM

8 FEATURES

8.1 INTRODUCTION

This chapter describes the functions of Mitel 5000 Contact Center components (see Figure 8.1).

For Mitel 5000 Contact Center it comprises the following sections:

- Overview of Mitel 5000 Contact Center (see Section 8.2)
- Detailed description of components Mitel 5000 Contact Center (see Section 8.4)
- Scripts (see Section 8.5)
- Concept of localisation(see Section 8.6).

The M5000 CC Portal is described in the following section:

- Overview of the M5000 CC Portal(see Section 8.7).

The Conference Bridge is described in the following section:

- Overview of the Conference Bridge(see Section 8.9).

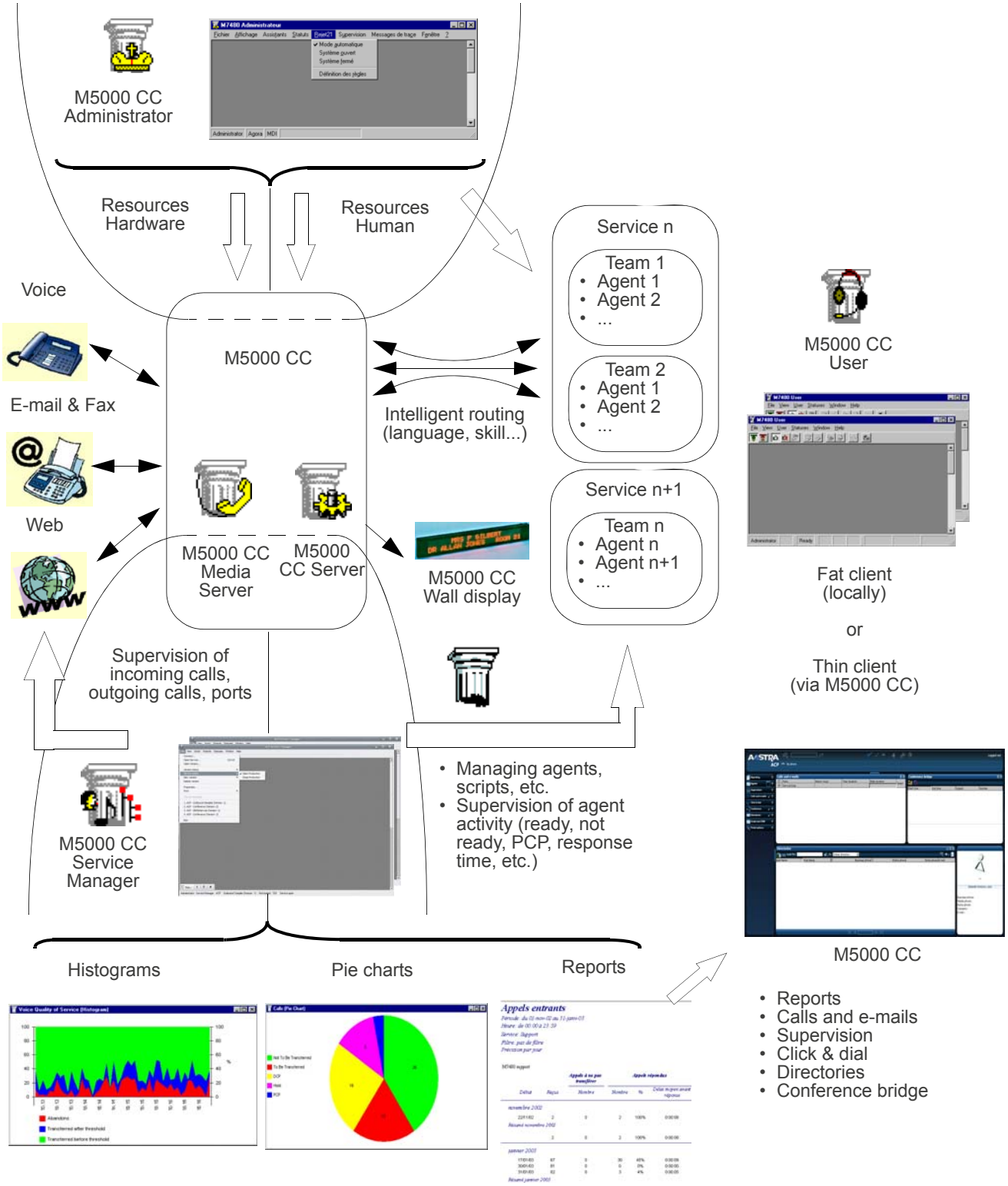


Figure 8.1 GENERAL FUNCTIONAL DIAGRAM OF M5000 CC COMPONENTS

8.2 OVERVIEW OF MITEL 5000 CONTACT CENTER

The M5000 CC solution is the Mitel automated contact centre that offers you a high level management capacity for telephone calls, e-mails and faxes, as well as web sessions. Thanks to this user-friendly and powerful solution, you can automate and supervise your incoming and outgoing telephony services.

Note: To assimilate properly the terminology used in this chapter, you must know the definitions described in Section 1.4 (example: user, agent, team, Service version, Beta, Production, Service manager, etc.).

8.2.1 SERVICES OFFERED BYMITEL 5000 CONTACT CENTER

Mitel 5000 Contact Center offers three main services, depending on the type of media (see Figure 8.1):

- Voice call processing features,
- E-mail and fax processing features,
- Web session processing functions.

8.2.1.1 VOICE CALL PROCESSING FEATURES

Mitel 5000 Contact Center has the following voice call processing features:

- ICD (Intelligent Call Distribution):

  Thanks to prior data collection (choice of caller in the IVR part of the call processing script, management of specific call data such as caller number origin, management of “client” databases), the call is directed straight to the most appropriate agent (one with the requisite skills for handling the call).

- A pool calls distribution:

  Unlike the ICD call distribution, a waiting call is not presented on the phone of an available agent. It is simply displayed in the Portal application in a list of call waiting, called pool. It is the agent that decides which call he wants to handle by selecting it in its application. At this time, the server perform a transfer of the waiting call to the agent's phone and automatically answer it.

- Two integrated solutions for voice call management:
  - The solution with IVR (the Interactive Voice Response which enables the system to pick up a call, play and/or record voice messages and collect the DTMF entered by the caller via his or her telephone keypad), using:
    - a Dialogic® card, or
    - some IP resources as interactive voice resource.
  - the solution without IVR (enabling you to broadcast voice messages to the caller via the PBX, but without collecting DTMF).

- Incoming/outgoing call management (Call Blending):

  Incoming call management (example: hotline, after-sales service) and outgoing call management (as used by companies to carry out call campaigns and customer surveys).

- Reserving agents through an external service:

  This function enables an external server, via M5000 CC web services, to reserve one or more agents for a given period and release them when it wishes.

- Voicemail recording:

  voicemail recording enables the caller to leave a voice message that can be sent via e-mail as an attachment. This option is only available for the solution with IVR, for it requires the use of the Dialogic® card or HMP licence.

- Networking:

  It allows the management of innerflow / overflow servers in the event of contact centre saturation.

- Database management:

  This enables agents to handle calls more effectively. Therefore, the information contained in a company's internal databases can be extracted in the IVR part of the call. This information is sent to the agent that receives the call. This function, therefore, reduces considerably the time spent in search of information. It is also possible to modify dynamically at the end of the call the data contained in these databases (e.g. change of client address, or creation of a new client).

8.2.1.2 E-MAIL AND FAX PROCESSING FEATURES

Within the framework of e-mail and fax processing, the Mitel 5000 Contact Center has the following features:

- IED (Intelligent e-mail Distribution):

From the information detected automatically by the system, such as sender address, subject or content of the message, the e-mail is distributed to agents with the skills required to process this e-mail. The e-mail is stored in a window common to all agents (named 'pool'). However, for each agent, this window contains only the e-mails he can process according to his level of skill, language, and/or belonging to one or more teams. Once an agent selects an e-mail to process from the pool, the e-mail disappears from the pool, and is no longer visible to the other agents.

- Automatic or manual e-mail processing:

  Standard operations that can be performed on an e-mail (answering, sending, deleting, copying and moving) are managed either automatically by the device or by the contact centre agents via their interface.

- Database management:

  This enables agents to handle e-mails more effectively. This means that data contained in the a company's internal databases can be extracted by decrypting the data in the e-mail, such as the sender’s address, the subject of the message or key-words in its content. This data will be transmitted to the agent receiving the call. This function, therefore, reduces considerably the time spent in search of information. It is also possible to modify dynamically at the end of processing the data contained in these databases (e.g. change of client e-mail address or creation of a new client).

- The pool:

  The 'pool' is a window common to all agents in the contact center. It contains the e-mails meant for agents (i.e. e-mails not fully handled by the system). Each agent sees in his pool only the e-mails he is authorized to handle, and once an agent selects an e-mail, it disappears from the pool and is no longer visible to the other agents.

8.2.1.3 WEB SESSION PROCESSING FUNCTIONS

Within the framework of web session processing, the Mitel 5000 Contact Center has the following features:

- Redirection of the customer browser:

  When processing a Web session, the M5000 CC is capable of communicating with a client visiting a company site, and of redirecting the client according to the choices the customer makes on the pages visited.

- Interaction with voice media:

  M5000 CC makes it possible to associate and synchronize 2 different types of sessions (web and voice). Therefore, information retrieved from the website can be used during voice call processing and vice versa.

- Database management:

  All the information entered through web pages can be stored in the company's internal database. The information contained in these databases can be displayed in the web pages.

8.2.2 MAIN CHARACTERISTICS OFMITEL 5000 CONTACT CENTER

8.2.2.1 FUNCTIONAL CAPACITIES OF M5000 CC APPLICATIONS

M5000 CC capacities (maximum number of agents, services, etc.) are described in the M5000 CC ordering guide. The ordering guide is available on Mitel's extranet site ; you can obtain this information from the extranet site or from your vendor.

8.2.2.2 COMPATIBILITY BETWEEN M5000 CC APPLICATIONS AND SYSTEM APPLICATIONS

M5000 CC compatibility with various applications (operating system, Office, voicemail software, etc.) is described in the M5000 CC ordering guide. The ordering guide is available on Mitel's extranet site ; you can obtain this information from the extranet site or from your vendor.

8.2.3 NEW FEATURES IN MITEL 5000 CONTACT CENTER

The new features in M5000 CC V3.3 (compared to V3.2) are:

- A management of a service (opening hours, closed days, audio messages) is now available from the portal,

8.2.4 E-MAIL MANAGERGENERAL ARCHITECTURE AND ORGANIZATION OF MITEL 5000 CONTACT CENTER

Mitel 5000 Contact Center is based on a multimedia architecture that includes simultaneous management of three media: voice, e-mail/fax, and web.

Mitel 5000 Contact Center is made up of hardware and software elements associated according to the architecture described on the map below (Figure 8.2).

Note: in this architecture, the CSTA (Computed Supported Telecommunications Applications) protocol is used by the voice media.

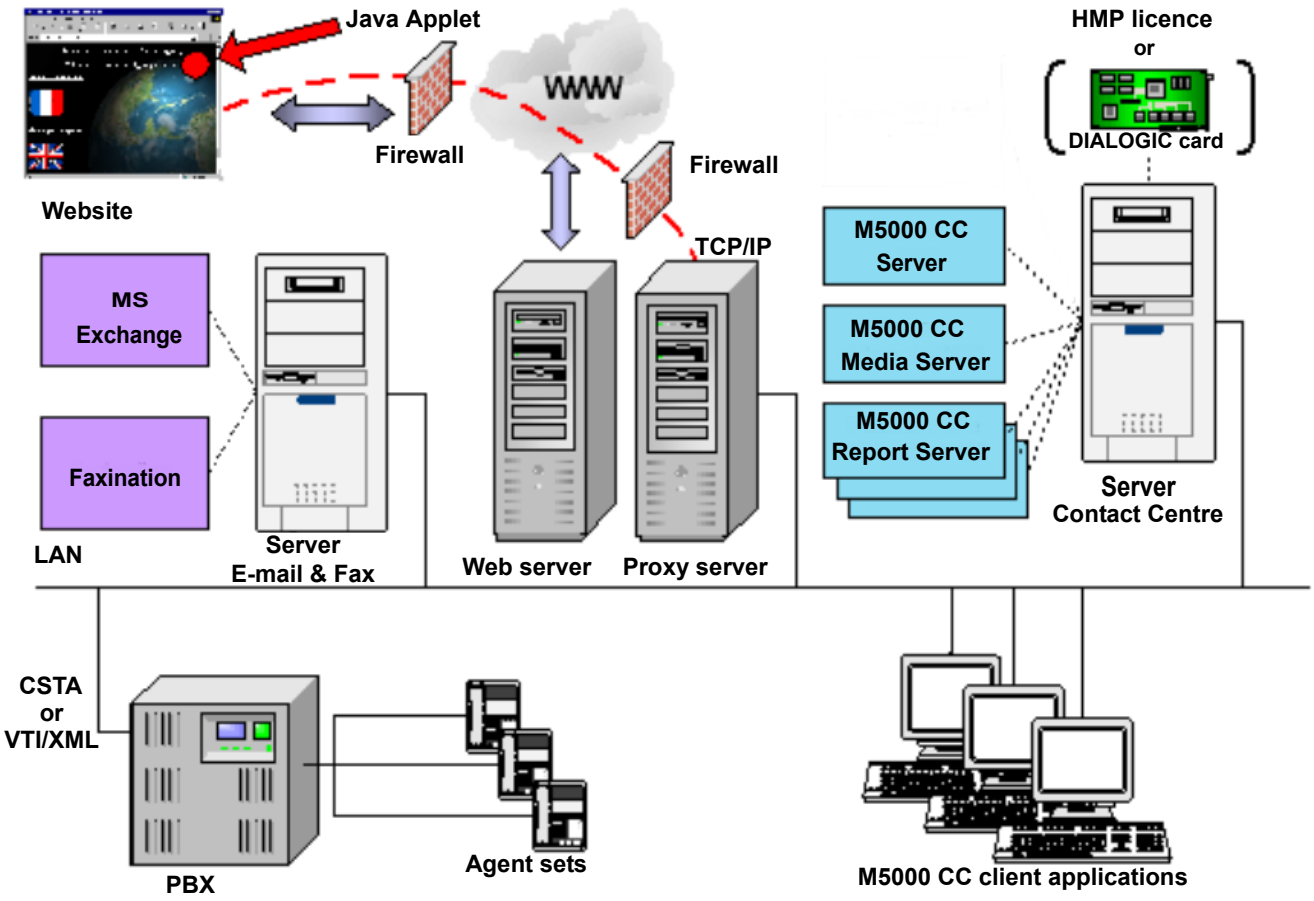


Figure 8.2 GENERAL ARCHITECTURE

8.2.4.1 HARDWARE COMPONENTS OF MITEL 5000 CONTACT CENTER

- The servers:
  - The **M5000 CC Server** of the contact center

    The M5000 CC Server is fitted with Dialogic® card(s) or HMP licences for the voice media with IVR.
  - the **e-mail and fax server** for the e-mail/fax media
  - the **web server** for the web media

    The Web server is an architectural element that is not necessarily linked to the enterprise LAN if the latter uses an ISP that hosts the site's Web pages.
  - The **proxy server** for the web media.

    The proxy server is an optional (though recommended) component of this architecture. It is used to manage the firewalls installed on the client side and the server side.
- the PBXfor the voice media
- **wall displays** (for the M5000 CC Wall Display application).

8.2.4.2 SOFTWARE COMPONENTS OF MITEL 5000 CONTACT CENTER

- The M5000 CC Server includes the following applications installed:
  - The main functions of the **M5000 CC Server** are M5000 CC File Structure management and searching for the best agent to process the call. It also controls the telephone extensions via the CSTA.

    For the e-mail media, the **E-mail Manager** links the M5000 CC Server with the e-mail server (MS Exchange). The instances of the E-mail Manager are launched automatically by the M5000 CC Server, then run in the background as any other client.
  - The **M5000 CC Media Server** executes the IVR part of the call processing scripts. Another basic function of this application is to receive inbound calls corresponding to DNIS ranges defined by the administrator.
- The client applications of the Mitel 5000 Contact Center are:
  - The **M5000 CC Administrator** application is the application by means of which it is possible to evaluate and distribute human resources (users, Service managers and agents) and physical resources (Services, DNIS, telephones, call pits, directory numbers, wall displays) and to manage the system as a whole (statistics, archives, agent records, backup, night mode, broadcasts, service mode, etc.).
  - The **M5000 CC Service Manager** is the application that makes it possible to use the resources received from the administrator (assigning agents to the Service, managing the DNIS status), to create the languages, skills and agent teams required by the Service, and evaluate the language and skill levels for each agent. This application is also used to create scripts. Finally, a specific menu is dedicated to Service activity supervision (in real time and in batch mode).
  - The **M5000 CC User** application is intended for agents. It lets them manage (dis)connections, their statuses and the calls meant for them. This application is available as “fat client” if installed on the agent’s PC, or as “thin client” via **M5000 CC Portal**.
  - The **M5000 CC Wall Display** application manages the colours used on the luminous strip defined by the administrator and whose content is specified by the Service manager.
  - The **Statistics Builder** application is a client application of the M5000 CC Server which runs in the background. Its main roles are duplicating statistics tables, compressing databases, and deleting old statistics.

Note: Firewall have to be disabled on M5000 CC Server to be able to connect fat client to it

- The M5000 CC interfaces of Mitel 5000 Contact Center are:
  - **M5000 CC User API** :

    The M5000 CC User API is an ActiveX DLL linked to the M5000 CC Server enabling the customer to use certain functions of the M5000 CC Server in their own application.
  - **Outbound call list API** :

    The Outbound call list API is an ActiveX DLL associated with the M5000 CC Server. This interface enables end users to use certain functions of the M5000 CC Server in their own application, while offering the ability to access the outgoing calls list.
- The **User ActiveX Control** interface:

  The "User ActiveX Control" interface can be located in any client application. It appears in the form of a tool bar containing buttons for access to the various features of the M5000 CC User application.
- The e-mail and fax server is a PC equipped with 2 basic applications:
  - The **Microsoft Exchange** application or **IBM / Lotus Domino** which manages the e-mail boxes used in the contact centre
  - The (optional) **Faxination** application which transforms incoming faxes into standard e-mails containing an image of the fax concerned as an attachment.
- The company's **website**:

  this contains the web pages on which clients can find and/or enter data.

8.2.4.3 DESCRIPTION OF A "SERVICE"

A **Service** defines one "category of calls", i.e. the way some calls are handled. A service type is either "Incoming" or "Outgoing" (see Section 1.4).

Different Service managers can connect to the same service at the same time. Only the first one to connect will have the right to modify the scripts. All the Service managers can display statuses and reports.

The following diagram shows the data related to a Service:

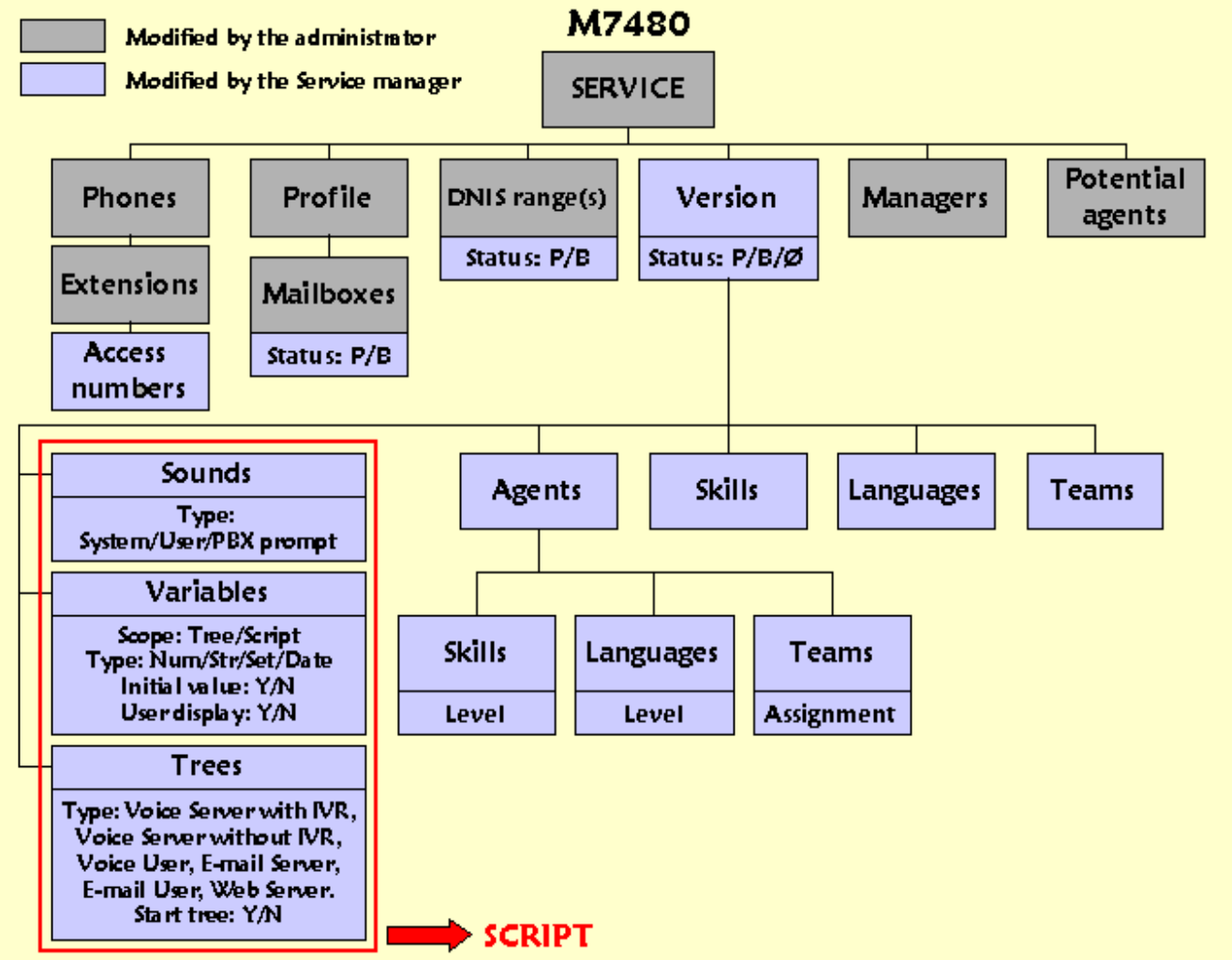


Figure 8.3 DATA RELATED TO A "SERVICE"

8.3 GENERAL OPERATION OF THE M5000 CC CONTACT CENTRE

8.3.1 OPERATION OF THE VOICE MEDIA

8.3.1.1 OVERVIEW

The M5000 CC introduces the notion of Intelligent Call Distribution (ICD). This function routes inbound calls intelligently to the agents working in the contact center according to their skills, language, and the team they belong to.

The M5000 CC supports 2 solutions using the CSTA protocol for voice media:

- A solution "With IVR" (Interactive Voice Response) used to pick up calls, collect DTMF and play voice messages, using:
  - u a Dialogic® card, or
  - u some IP resources as interactive voice resource. Standard IVR and IP modes offer the same functions (with IP configuration; in addition to the CSTA link, a VTI/XML link is used) except the UUS which is not available in IVR-IP.
- A solution “Without IVR" which does not pick up calls and does not collect DTMF; voice messages are played by the PBX.

8.3.1.2 ARCHITECTURE AND COMPONENTS USED BY THE VOICE MEDIA

The following features or components are used by the Mitel 5000 Contact Center Voice media to manage incoming or outgoing telephone calls (see Figure 8.5):

- The PBX
- For managing telephony events: M5000 CC manages events to/from the PBX via the **CSTA protocol**.
- Incoming calls only The **Dialogic® card** or **IP resources** (for the solution with IVR only) is the architectural element enabling call off-hooking, playback and recording of voice messages and the collection of DTMF signals entered by the caller.
- The main functions of the **M5000 CC Server** are M5000 CC File Structure management and searching for the best agent to process the call. It also controls the telephone sets by communicating directly through the CSTA protocol with the PBX.
- Incoming calls only The **M5000 CC Media Server** runs the IVR part of the call processing scripts. Another basic function of this application is to receive inbound calls corresponding to DNIS ranges defined by the administrator.
- The **M5000 CC Media Server** supervises CSTA connections.
- The M5000 CC client applications:
  - With the **M5000 CC Administrator**application, you can:
    - u evaluate and distribute human resources (users, Service managers and agents) and physical resources (Services, DNIS, phones, call pits, directory numbers, wall displays)
    - u manage the entire system (statistics, archives, agent recordings, backup, night mode, broadcasts, service mode, etc.)
    - u define links to the web pages available to agents or other users (thin clients) of the web portal.
  - With the **M5000 CC Service Manager**application, you can:
    - u create scripts
    - u use resources received from the administrator (allocating agents to the Service, managing the DNIS status)
    - u create languages, skills, and agent teams required for the Service,
    - u evaluate the language and skill levels for each agent
    - u finally, a specific menu is dedicated to Service activity supervision (in real time and in batch mode),
  - the **M5000 CC User** application is the application designed for the agents. It allows them to manage, via their PC, their logins / logouts, statuses and the calls they receive.
  - the **M5000 CC Wall Display** application is the application that manages the colors used on the banner display defined by the administrator and whose content is specified by the Service manager,
  - the **Statistics Builder** application is an application client of the M5000 CC Server which runs in the background. Its main roles are the duplication of statistics tables, compacting databases, and deleting old statistics,

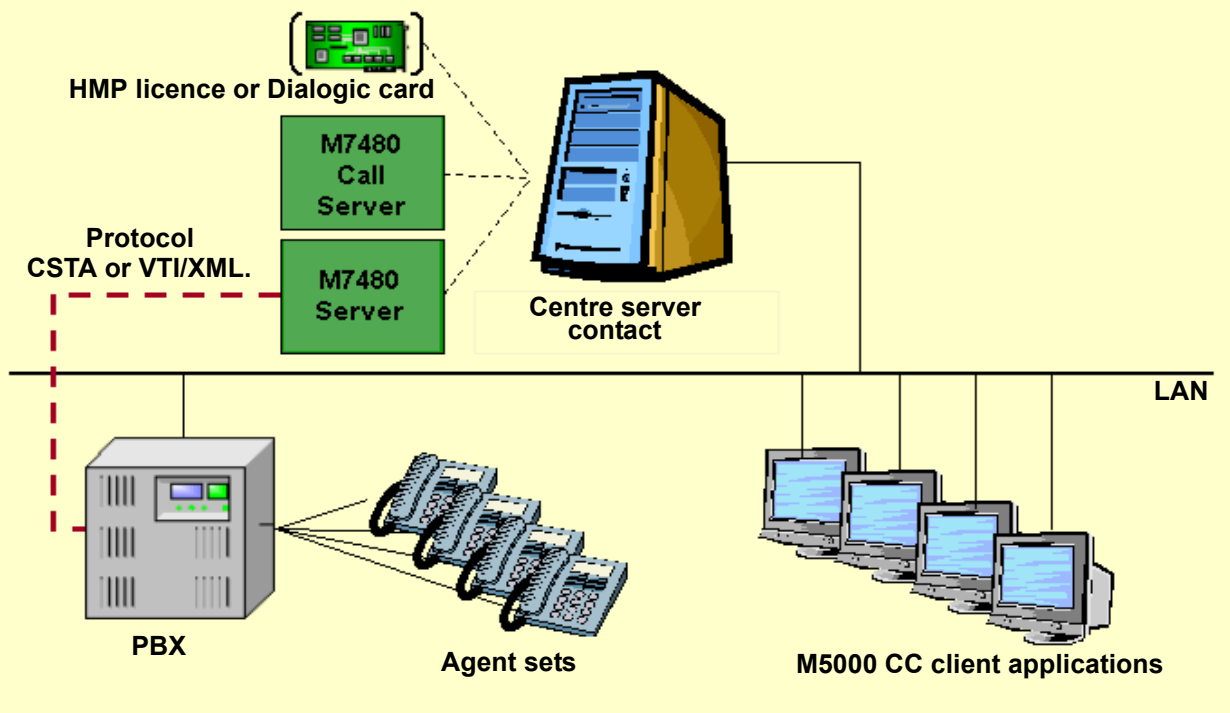


Figure 8.4 ARCHITECTURE USED BY THE VOICE MEDIA

8.3.1.3 VOICE SOLUTIONS WITH OR WITHOUT IVR

8.3.1.3.1 SOLUTION WITH INTEGRATED IVR (INTERACTIVE VOICE RESPONSE)

The integrated IVRfunction enables callers to access and retrieve information over the phone without the intervention of a human operator. The caller uses a touchtone telephone to enter information and a digitized synthetic voice to present the results. This part of call processing is managed using IVR trees made up of IVR nodes in the script and is executed by the M5000 CC Media Server application. This execution is based on a specific architecture which is itself based on CSTA or VTI/XML features (see Section 8.3.1.2).

During an IVR session, voice messages can be played back from a text. The text is changed in real time to sound by a voice synthesis engine. Microsoft's SAPI 5.1 technology is used by the M5000 CC Media Server application to manage the sound. Thanks to this technology, a SAPI compatible voice synthesis engine is used to generate sound. Sound is generated in the memory and played back via the Dialogic® card (analogue) or via HMP (IP). To be able to use this function, a voice synthesis engine is installed on the PC on which the M5000 CC Media Server is running.

The BrightSpeech engine from Acapela is used by the M5000 CC Media Server and must be installed.

8.3.1.3.2 SOLUTION WITHOUT IVR

M5000 CC also offers a solution called "without IVR", which manages incoming calls without collecting the DTMF. This configuration allows powerful scripts to be created (skill-based, language-based and team-based routing in the "TransferCall" node, voice messages to caller, User Interface scripting) even though some options are not available. The expression "without DTMF" stems from the absence of IVR, since there can be no interactivity between the caller and the system (DTMF collection, voice message recording and deletion are not possible).

8.3.1.4 PROCESSING INBOUND AND OUTBOUND CALLS

8.3.1.4.1 INCOMING CALLS

An incoming service is a service through which all calls come into the contact centre, for example a technical hotline. Agents receive calls distributed by the application. When an incoming call is detected, the system can interact with the customer using Interactive Voice Response (IVR) features, then the call is transferred to the best agent available.

8.3.1.4.2 OUTGOING CALLS

Outgoing services are a special type of service. They are not meant to receive incoming calls, but to handle outgoing calls. The main difference between outgoing and incoming services is that a dial list is associated with

each outgoing service. The dial list is a list of phone numbers to be dialled.

When an agent, assigned to an outgoing service, is ready and idle, the M5000 CC Server can decide to assign him or her an outgoing call. The M5000 CC Server chooses, among those that the agent is able to handle, the outgoing call with the highest priority and presents it to the agent. When the agent decides to make the outgoing call (he or she clicks the ***[Make Outbound Call button]***), the M5000 CC Server makes a call via the CSTA interface. The agent script starts automatically, but the call is initialized by the agent himself (see Sheet U-500).

Choosing the agent to make the call: Like the incoming Services, outgoing Services can use languages, skills and teams as criteria for selecting agents. Therefore, each call can be associated with a language level, a skill level, and a team. These criteria are used to determine the agent to take a call. It is also possible to assign an outbound call to a specific agent.

Choosing the call to be presented to an agent first: A call is chosen upon expiration of its programmed date, or if no date has been defined. Calls with the highest priority level are chosen first. For calls with the same priority level, the call with the longest expiry date is presented to an agent. Unprogrammed calls are only made if there is no call with an expiring programmed date.

When a call fails (for instance, the destination extension is busy or nobody is answering the call), a new attempt is programmed for this call. A call always remains in the outbound call list, even if the destination has been successfully contacted or the maximum number of redial attempts has been reached.

The Outbound call list API is used to manage the list of outgoing calls from an external application.

Note: For maintenance reasons, an outgoing Service can be closed.

8.3.1.4.3 COMPARISON BETWEEN INCOMING AND OUTGOING CALLS

The differences between outgoing and incoming Services are:

- An outgoing Service has no DNIS range.
- Only User Interface trees are allowed in an outgoing Service: there is no IVR. Since there is no IVR, sounds are not used in outgoing Services.
- Intrinsic variables differ. Some variables are modifiable:
- Statistics are also saved for the 'Beta' version.
- Outgoing Services can be closed even though they are in 'Production' or 'Beta'.

8.3.1.4.4 FUNCTIONAL RESTRICTIONS

- In CSTA no more than three extensions can be managed in conference simultaneously. With more than three extensions managed CSTA events are no longer consistent.
- It is, therefore, important to bear this restriction in mind as a certain number of operations available via M5000 CC or the telephone or both may fail.

Examples:

- Request for transfer, conferencing or recording the conversation by an agent when the latter is being recorded by the Service Manager (the agent is then already in "conference" with an analogue resource).
- Request for transfer, conferencing or recording of the conversation by an agent when in conference.
- Request for transfer or conferencing after the agent has requested his or her conversation to be recorded (conferencing with an analog resource).
- All combinations of listening/intervention + conference or transfer.

Note: *As indicated in certain examples above, when a party initializes a consult call to participate in an open channel, this is the equivalent of adding a fourth extension to a conference. This is the case even if the consult call is made with the aim of being transferred rather than participating in the conference.*

8.3.1.4.5 RESERVING AGENTS THROUGH AN EXTERNAL SERVICE

This function enables an external server, via M5000 CC web services, to reserve one or more agents for a given period and release them when it wishes.

As long as this agent is reserved, the M5000 CC Server will not send any incoming or outgoing calls to him or her. Calls will only be sent to this agent again by the M5000 CC system when the external server releases this agent.

Through the duration of agent reservation by the external server, the status of this agent’s extensions will be Reserved Outbound .

Agents are reserved and released respectively using two M5000 CC web services web methods:

- ReserveAgentForExternalOutboundServer
- FreeAgentFromExternalOutboundServer

These two methods are described in the M5000 CC web services documentation.

External server

The external server connects to the M5000 CC system via web services. It acts on behalf of the agents it wishes to reserve and thus creates as many connections as there are agents to be reserved.

Outside the period during which this external server has actually reserved an agent, the extensions associated with this agent behave normally; the agent may receive both incoming and outgoing calls.

When the extension between the external server that has requested for the reservation and the web services is cut, the reserved agent is automatically released. It is also automatically released if the connection between the web service used for its reservation and the M5000 CC Server is cut.

An agent can only be reserved by one external server.

Reservation

Once the external server reserves an agent, the status of all its supervised extensions changes to " Reserved Outbound "; this reservation is only possible if the following criteria are respected:

- The agent's status is "Connected".
- The activity of this agent is "Ready" or "Idle".
- All these extensions are free.
- At least one of these professional extensions is supervised by the M5000 CC Server.

If any of these conditions is not met, the reservation fails.

If the reservation succeeds, no call is sent to this agent by the M5000 CC Server. The telephone set will continue to receive and make private calls, but the status of the extensions on the M5000 CC system will remain fixed on " Reserved Outbound ", no matter the actual status of these extensions.

After an agent is reserved, the agent's status and activity can be changed. If the agent's status changes to "Disconnected", the agent is released automatically. On the other hand, a change of status from "Ready" to "Not ready" does not have any impact on the reservation. Finally, it is not possible to change the agent's status to "PCP" while the agent is reserved.

Release

When the external server decides that it no longer needs to reserve an agent, it can release it using the right web services method.

The agents' extensions will then recover the status corresponding to their respective telephony statuses and will again become available for call distribution by the M5000 CC Server.

No idle time is started by M5000 CC following the release of an agent.

Real-time and daily statuses

Real-time and daily statuses take account of agent reservation by an external server and the change of these extensions' status from " Reserved Outbound " in the same way as if the agent had been reserved by the M5000 CC Server. Therefore, no distinction is made between these two types of reservation.

Statistical reports

Both the detailed and consolidated statistics and reports on the agents' overall statuses also take this reservation function into account. No distinction is made between an agent reservation made by an external server and the one made by the M5000 CC Server, except that calls received by the agent when it was reserved by the external server will be saved in the statistics like private calls.

8.3.1.5 VOICE CALL LIFECYCLES

8.3.1.5.1 INCOMING CALLS - SOLUTION WITH IVR

The steps in the life cycle of an incoming voice call with IVR are as follows (see Figure 8.5):

- The caller dials the phone number associated with one of the production Services defined in M5000 CC.
- The PBX transfers the call to a group with Dialogic® or IP resources.
- The M5000 CC Server detects the call thanks to a CSTA and/or VTI/XML event.
- The M5000 CC Server detects the dialled number (the DNIS) and identifies the associated Service. It transmits this information (and other information such as the CLID) to the M5000 CC Media Server.
- The M5000 CC Media Server instantly runs the script associated with the 'Production' version of this Service. The Dialogic® card or IP resource off-hooks, plays the prompt and recovers the DTMF signals.
- All the data is transmitted by the M5000 CC Media Server to the M5000 CC Server (via the DCOM communication protocol), which is responsible for finding the best agent to process the call according to the selection criteria defined in the IVR part of the script (skill(s), language(s), teams, etc.).
- The M5000 CC Server performs the transfer. This may be of three types: blind, monitored or by pool transfer. For a blind transfer, when the appropriate agent has been selected, the M5000 CC Server prompts

the agent's M5000 CC User application to run the User Interface script. In blind transfer, the transfer takes place in three stages: initialization – calling the chosen destination – transfer. In other words, blind transfer is considered to be terminated when the agent's telephone rings; the M5000 CC Media Server can no longer control this call. Monitored transfer involves an additional stage: checking that the agent off-hooks. The M5000 CC Media Server can, therefore, regain control of this call if the agent that has been identified as ready to receive a call is not actually present at his or her workstation. Pool call transfer is explained at section "Pool call distribution", page 196

- The M5000 CC Server transmits to the PBX the order to transfer the call physically to the agent extension selected from the resource that was busy when the IVR part of the script was run.
- The call is transferred physically to the agent extension, which then rings.

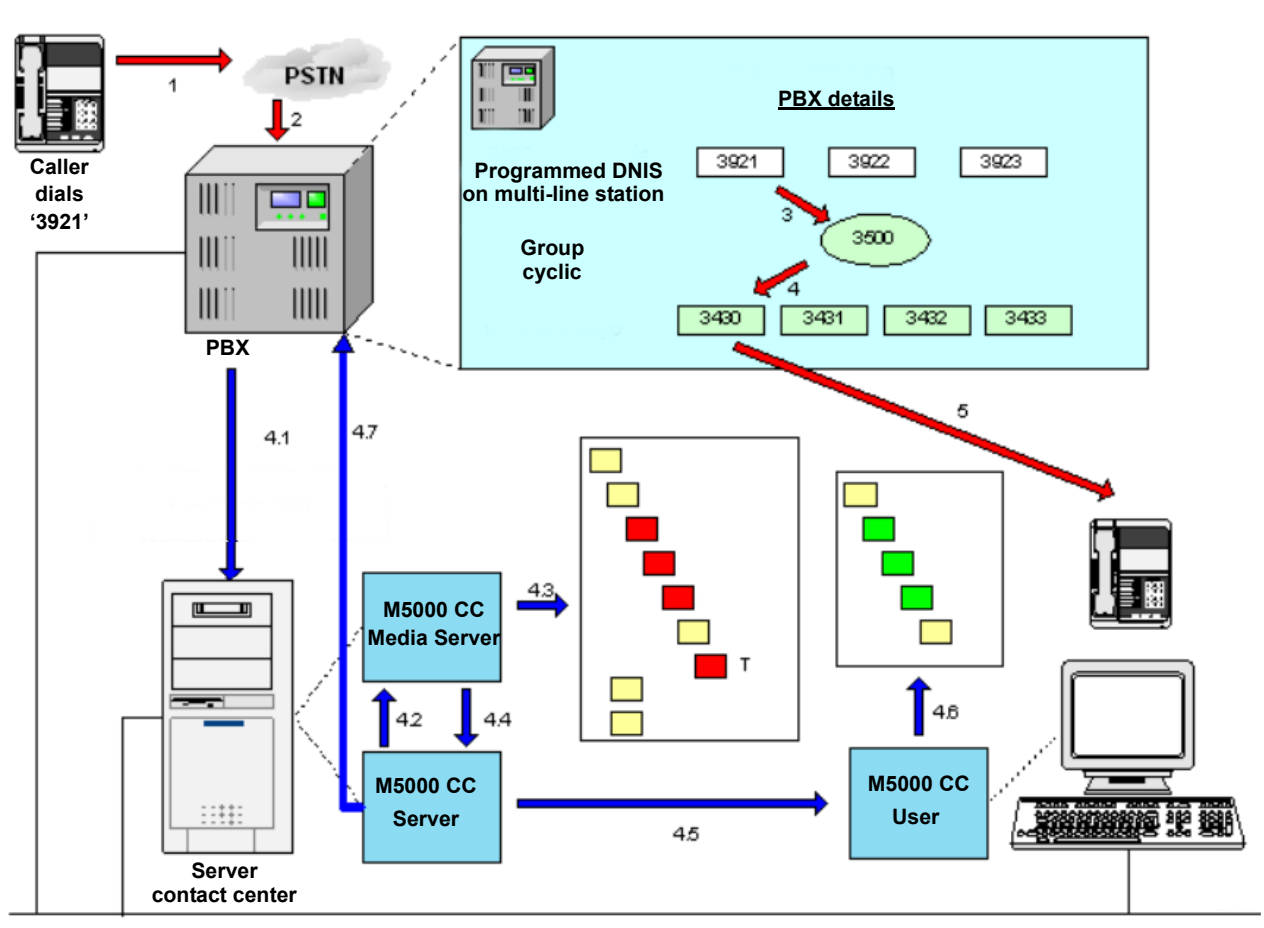


Figure 8.5 LIFE CYCLE OF A VOICE CALL (SOLUTION WITH IVR)

8.3.1.5.2 INCOMING CALLS - SOLUTION WITHOUT IVR

The steps in the lifecycle of an incoming voice call without IVR are as follows (see Figure 8.6):

- The caller dials the phone number associated with one of the production Services defined in M5000 CC.
- The PBX sends the call to an inbound call pit.
- Depending on the prompts provided for in the script, the call is redirected to the message call pit that will then broadcast the said sounds (prompts) to the caller.
- The M5000 CC Server detects the call through a CSTA event.
- The M5000 CC Server detects the dialled number (the DNIS) and identifies the associated Service. It transmits this information (and other information such as the CLID) to the M5000 CC Media Server.
- The M5000 CC Media Server instantly runs the script associated with the 'Production' version of this Service. The sounds will be played by the message call pits meant for this.
- The data is transmitted by the M5000 CC Media Server to the M5000 CC Server (via the DCOM communication protocol), which is responsible for finding the best agent for processing the call according to

the selection criteria provided in the IVR part of the script (skill(s), language(s), teams, etc.).

- The M5000 CC Server performs the transfer. This may be of two types: blind or monitored transfer. For a blind transfer, when the appropriate agent has been selected, the M5000 CC Server prompts the agent's M5000 CC User application to run the User Interface script. In blind transfer, the transfer takes place in three stages: initialization – calling the chosen destination – transfer. In other words, blind transfer is considered to be terminated when the agent's telephone rings; the M5000 CC Media Server can no longer regain control of this call. Monitored transfer involves an additional stage: checking that the agent off-hooks. The M5000 CC Media Server can, therefore, regain control of this call if the agent that has been identified as ready to receive a call is not actually present at his or her workstation.
- The M5000 CC Server transmits to the PBX the order to transfer physically the call to the selected agent extension from the call pit that was busy when the last prompt was broadcast.
- The call is transferred physically to the agent extension, which then rings.

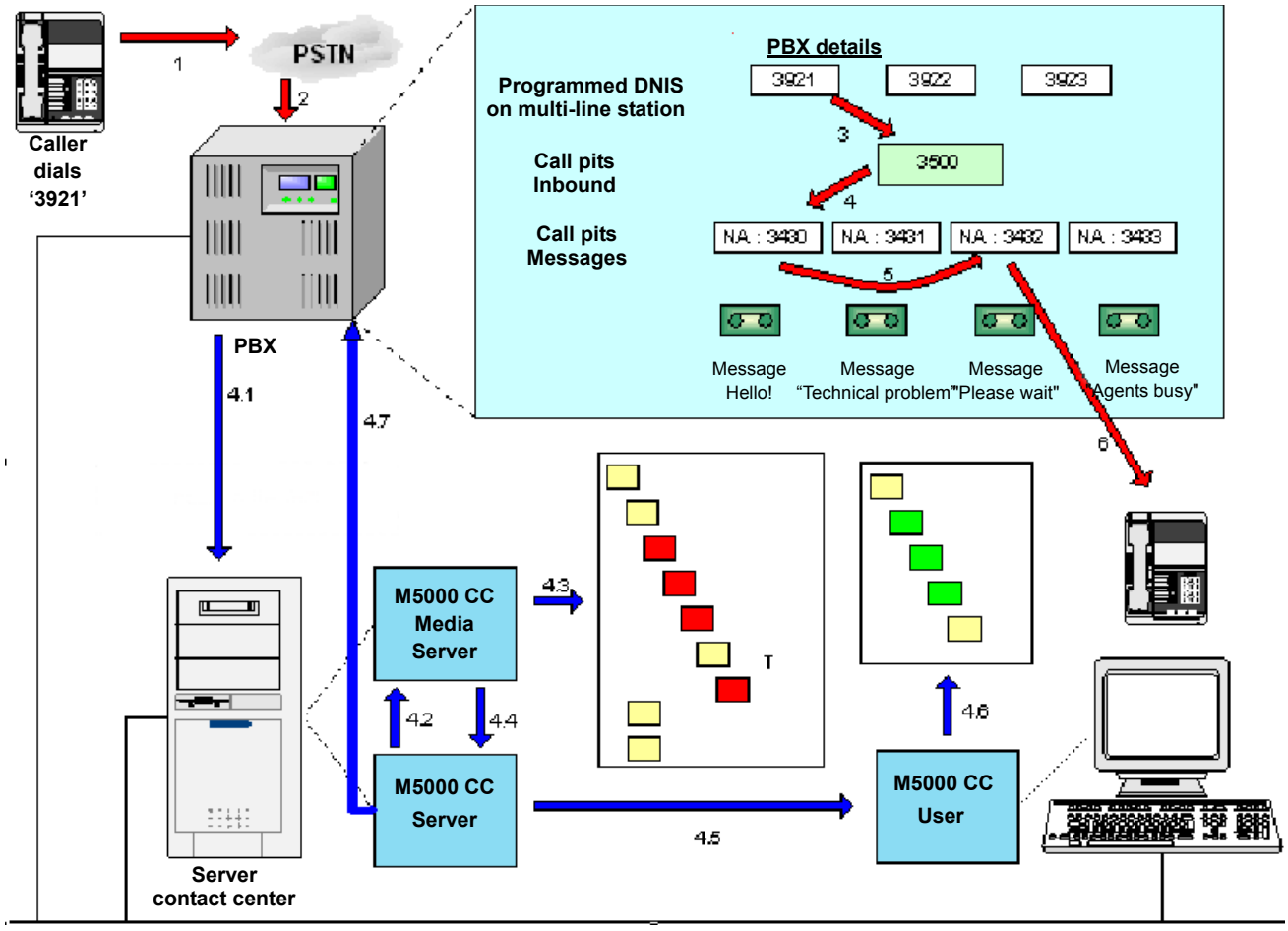


Figure 8.6 LIFE CYCLE OF AN INBOUND CALL WITHOUT IVR

8.3.1.5.3 OUTGOING CALLS

- When an agent assigned to an outgoing Service is free for a certain time, the M5000 CC Server can decide to send him or her an outgoing call. The outgoing call chosen will be the one with the highest priority level.
- When an agent has been selected, the M5000 CC Server prompts the M5000 CC User application to execute the agent script until the "MakeOutboundCall" node.
- When the agent clicks on the "Make Outbound Call" button, the M5000 CC Server makes the outbound call, using the CSTA command.
- When the agent is on line with the client, he asks him questions which appear in the agent script.
- The agent hangs up at the end of the script. Like for inbound calls, the agent can do some work for the call he has just handled (PCP). When he has finished, the agent informs the M5000 CC Server that he is ready to receive other calls.
- At the end of the logical call, the M5000 CC Server saves the information concerning the previous call in the "Statistics" database.

8.3.1.6 POOL CALL DISTRIBUTION

At the script level, it is possible to precise that an incoming call must be distributed to the agent by using pool transfer. In this case, when the script executes this TransferCall node, the server will no more distribute the call directly on the available agent phone. It will simply display the call in the portal application. The agent can decide to handle one of these waiting calls by simply selecting it in its portal application. When an agent selects a waiting call, this call is removed from all agent application that displays it. The server transfers this call on the agent phone and automatically answers it. As for call distributed by the server using push mechanism, the script can define which agents have the possibility to handle the call by précising the skills, language knowledge and team membership that agent must have. Only the agent having the right profile will see the call in their application.

This new call distribution mechanism can be combined with a pushed call distribution: in the script node, it is possible to precise a push timeout after which the server tries to transfer (monitored transfer) the waiting call on an available agent phone. When the server tries to perform a monitored transfer, the call disappears from all agent application but if no agents are available, the waiting call stays visible in agent application.

This combination of these two modes can be improved by the definition of the agent phone characteristics. Indeed, an agent phone can have several extensions (lines) and these extensions can have several types:

- A private extension: it is an extension where the server never distributes professional call.
- A mixed professional extension: it is an extension where the server can push calls (using blind or monitored transfer) or can distributed a pool in the pool selected by an agent
- A push professional extension: it is an extension where the server can only distribute call using a blind or monitored transfer
- A pool professional extension: it is an extension where the server distributes only pool calls selected by an agent

When call distribution is mainly performed using push mechanism, using a pool professional extension allows an agent to always be able to handle important call that are distributed by using pool transfer. In the same way, when call distribution is mainly performed using pool mechanism, a push professional extension allow the server to be able to push important call on agent phone.

When a pool transfer is executed, the server always uses idle pool professional extension before using mixed professional extension. In the same way, when the server executed a blind or monitored transfer, it always uses idle push professional extension before using mixed professional extension.

To notify that there is call waiting in the pool, the portal can display a sound to the agent.

- When an agent is logged in and ready and when the agent has no call on hold or connected on its phone, the portal plays a continuous sound while there is a call waiting in the pool.
- When an agent is logged in and ready, but when the agent is in communication or when it has a call on hold on its phone, the portal plays a short sound every time a call is added in the pool. The agent has the possibility to define the minimum time between two successive short sounds.
- When an agent is logged in but not ready, the portal does not play any sound.

The portal does not play any sound for E mail

Note: The pool distribution mechanism is available only for the M5000 CC Portal application and for application integrating the M5000 CC web service. It is not available in the M5000 CC User application, in the M5000 CC User API and in the M5000 CC ActiveX control.

8.3.1.7 SCRIPT EDITING TOOL FOR THE VOICE MEDIA

The script editing tool was developed on the same basis as the one used to handle e-mails and web sessions: it offers the same features in terms of skill-based routing, fast writing and user-friendliness. Interactive and non-interactive voice response trees (see Section 8.5.4) are available for the M5000 CC Service Manager wishing to develop a special script for voice call processing. Within these trees, the M5000 CC Service Manager can use some nodes (see Section 8.5.5) and variables (see Section 8.5.6) to distribute and process client requests using a powerful and effective method. To establish a first interaction with the caller, the M5000 CC Service Manager also handles the sounds (see Section 8.5.7) played to the client.

Note: Refer to Section 8.5.3 for a detailed description of the script editing tool.

8.3.1.8 REJECT FUNCTION 21

The Reject 21 feature is applicable only in a configuration without IVR.

Reject 21 is a feature that allows you to reject incoming calls if necessary. For example, calls to a Service may be rejected when the current incoming call load becomes too high, or if the current day is a holiday. In this case, the calls are rejected by the PBX itself.

Reject 21 introduces three notions:

- The **Service status**, which is the required Service status (open or closed)
- The **opening/closing status of a call pit in particular** (open, closed, intermediate status)
- The **actual Service status**, expressed in percentage indicating the proportion of call pits associated with this Service which actually have the required status.

To use the Reject 21 feature, it must be possible to associate call pits with the various incoming service types. This association is performed in the M5000 CC Wall Display application.

8.3.1.9 CALL RETURN TO ATTENDANT

The “Call return to attendant” function is only applicable in a configuration without IVR.

This function is used to manage calls returned to the attendant (for example at the end of a too long presentation period). These calls end up in a call pit and can be processed by an M5000 CC service.

There are two possible scenarios:

- First, a call arrives in the system and is transferred to a terminal which, for one reason or the other, returns the call to the attendant. In this case, the call is considered as an “unanswered return”.
- Second possibility: the call is answered at least once by an internal subscriber but is then diverted to a terminal which forwards it to the attendant. In this case, since the call has been picked up at least once, it is then considered as an “answered return".

To handle these call types, an incoming service must be indicated by the administrator as the one to be used by default in case of call return to the attendant (see Sheet U-321)

If you want to specify more than one returning service, you have to associate the service to the “returning” incoming call pit (see Sheet U-321).

Thus, if a call has not been answered by an internet subscriber and the PBX is configured to divert returning calls to the attendant, the call will be sent to the default returning service or to the services associated to the “returning” incoming call pit (only in a solution without IVR).

8.3.1.9.1 SERVICE STATUS

The status of a Service can have two values: **Open** or **Closed**. This notion is defined only for a CSTA without IVR configuration and only for Services associated with at least one incoming call pit.

A closed Service is a Service which no longer handles incoming calls. In fact, any call arriving in one of the call pits associated with this Service will be rejected instantly by the PBX. Only the number of calls rejected will be included in the statistics. Conversely, an open Service is a Service that handles all incoming calls.

The current status of a Service is indicated in the M5000 CC Service Manager status bar.

Note: If the Service uses some DNIS from a call pit with which it is not associated, calls arriving in this call pit are never rejected and are processed by the Service, even when the latter is closed. To use Reject 21 properly, the administrator must check that only the DNISs of the call pits associated with a Service are allocated to this Service.

8.3.1.9.2 OPENING/CLOSING STATUS OF A CALL PIT

When the status of the Service changes, Reject 21 is activated (the PBX diverts the call) or deactivated (calls arrive normally) for each call pit associated with the Service. To activate/deactivate Reject 21, an asynchronous command is sent to the PBX and, consequently, the Service status may not match the status of the call pit itself. For this reason, an opening/closing status must be defined for each call pit.

This status can have any of the following values:

- **Resource open**: Reject 21 is not activated and incoming calls on this call pit will be processed normally.
- **Resource closed**: Reject 21 is not activated and incoming calls on this call pit will be rejected by the PBX.
- **Resource in an intermediate status**: Activating Reject 21 consists in diverting the call pit to itself. If for any reason the call pit is diverted but not to itself, the resource is neither open nor closed; in this case it is considered to be in an intermediate status.
- **Resource in an unknown status**: When the call pit is not supervised, we do not know the status of the call pit, which means that its status is unknown.

The open/closed status of call list can be viewed in the client extension display window in the M5000 CC Server or M5000 CC Administrator application.

8.3.1.9.3 ACTUAL SERVICE STATUS

The actual status of a Service represents the percentage of the call pits associated with the service whose status matches the service status.

For example, let us take a Service associated with 5 call pits and whose status is open. If among these call pits, one has an unknown status, another one an intermediate status, and another a closed status, whereas the status of the two incoming call pits is open, the actual status of the Service will be "40% open".

The actual status of the Service is displayed in the M5000 CC Service Manager status bar. In addition, to obtain detailed information about the various call pit statuses, a pie chart is available in the M5000 CC Service Manager.

8.3.1.10 ASSOCIATED CALL

The functions “Import from associated call” and “Export to associated call” are based on the search for an associated call (associated ICDCall).

Association is based on the following principle:

- An agent is online with a customer (call distributed by M5000 CC).
- This latter makes an enquiry call to a DNIS of a specific Service.
- The call arriving in this Service does not have any information about the call handled by the agent.
- Based on the CLID of the call in this new Service, it is possible to find the ICDCall managed by the calling agent.

Principle used to find the call from the CLID

- The User ID is found based on the CLID.
- All the calls associated with the user is searched for based on the user’s ID.

Single extension

To make the association, the system chooses the call in PCP, if available. Otherwise, the call on hold or in DCP is selected.

Multiple extensions

In this case, the is no longer the notion of PCP. The system selects the active call on the extension corresponding to the received CLID. If no call is active on the extension, any of the calls on hold or in DCP is selected on all the agent’s extensions.

There may be cases where no active call is available on the extension if the agent makes his enquiry call from an extension other than the one on which he or she has received the call. It is, therefore necessary to bear this principle in mind so as to have an optimum function of the system.

The call thus found is referred to as an associated call. Once this associated call is identified, the values for the global variables can be easily retrieved from this call, or can be modified. The Import/Export functions are based on this principle.

Example of export

Let us take a Service in which agents do not have any user application. They only have a telephone. The client wishes to qualify calls according to conversation with the agent. Since the qualification must be backed up in the statistics with information about the corresponding call. In this case, Export to associated call may be used.

Create two services:

- Hotline
- Consultation

Tableau 8.1 EXAMPLE OF TWO SERVICES

HOTLINE SERVICE (CALLED BY THE CUSTOMERS)	CONSULTATION SERVICE (CALLED BY THE AGENTS)
Defining an inbound server and associating a DNIS (range) with it	
Define a global user variable (here, WrapUpCode), which will contain the call's classification code. This variable can be saved in the statistics.	Using an "Assignment*"* *node*, export the classification code to the "WrapUpCode" global variable defined in the Service here.
Note: *The name of the global variable must be identical in the 2 Services.*	

The Consulting service can exist in a solution with or without IVR.

- For an IVR solution: The agent calls the Consulting service using a DNS associated with the Service. Then, via an "EnterDTMF" node the classification code entered by the agent is recovered, then using the "Assignment" node (Export to associated call), the code to the associated call is exported.
- For a solution without IVR: without DTMF collection. The solution consists in creating a Consulting service associated with several DNISs (the number of which depends on the quantity of classification code to be associated with a call). Each DNIS corresponds to a classification code. The DNISs are used as conditions of access to the assignment nodes.

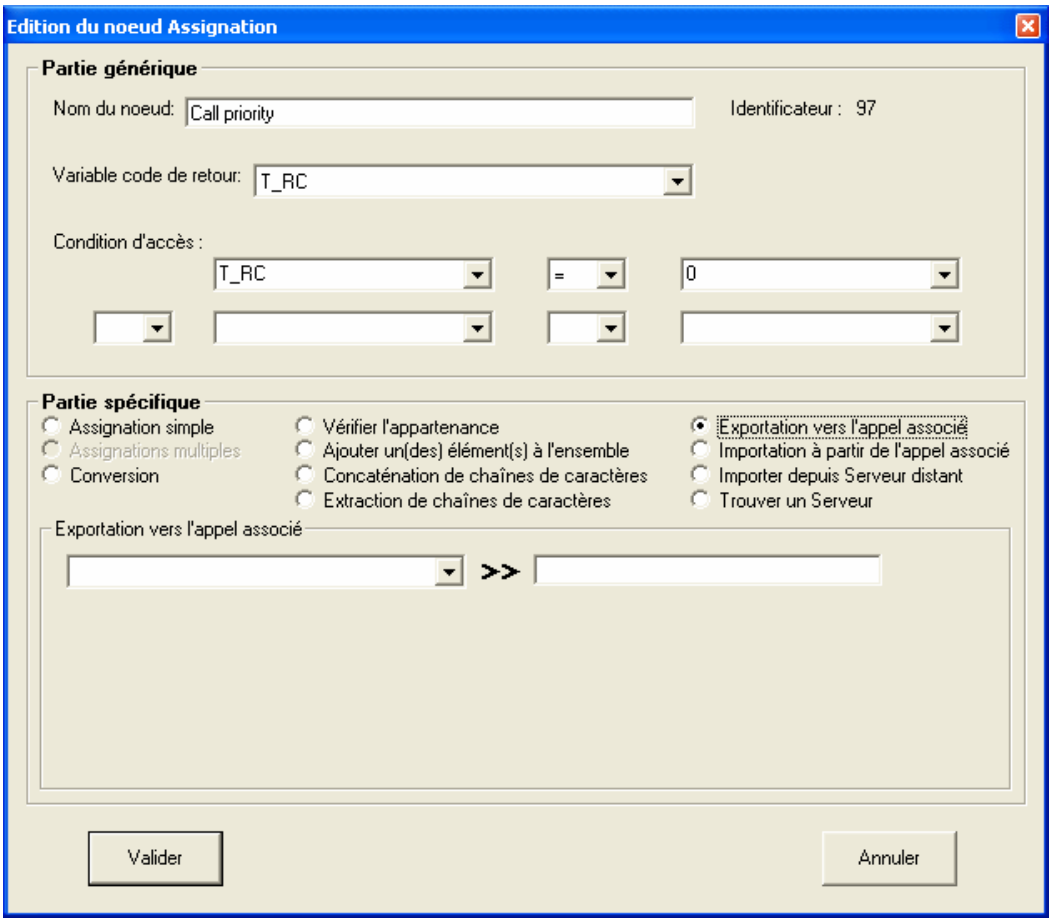


Figure 8.7 EXPORT TO ASSOCIATED CALL

Example of correspondence between the DNIS and call classification codes:

Tableau 8.2 EXAMPLE OF CLASSIFICATION CODES

DNIS (CONSULTATION SERVICE)	CLASSIFICATION CODE
4001	1 (ex: insurance problem)
4002	2 (ex: checkbook problem)
4003	3 (ex: credit card problem)

Example of import

The default service "Conversation Recording" uses the Assignment node (associated call import option) to recover information about the call handled by the agent (Service Id, agent id, CLID, Call Time) (see Section 13.4.5).

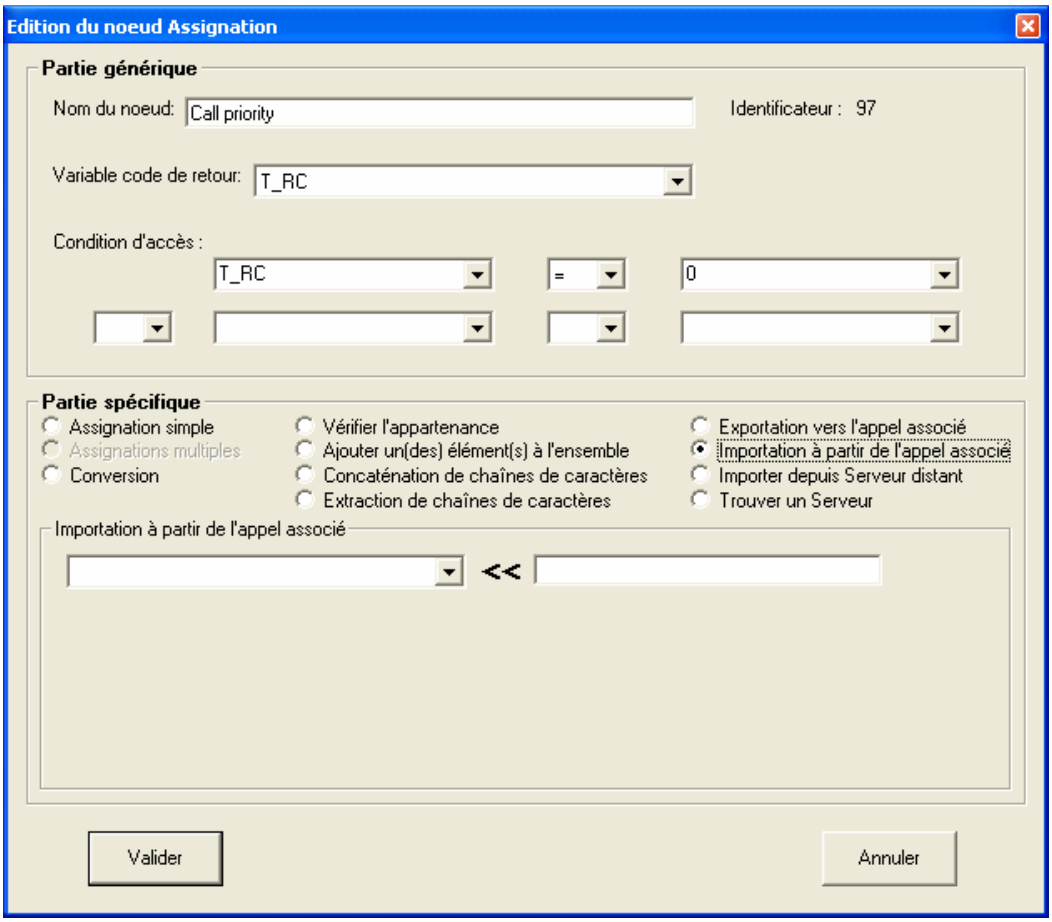


Figure 8.8 IMPORT FROM ASSOCIATED CALL

8.3.1.11 SETTING UP A 3-WAY CONFERENCE

A conference can be set up between a caller and two agents (three-way conference). This feature is based on the notion of agent transfer with enquiry call. In fact, the only difference between transfer with enquiry and a conference call lies in the enquiry call termination mode. The system offers a choice between a transfer termination mode and a conference termination mode.

Using agent conference mode also enables the agent initiating the conference call to maintain or not maintain script management (if the script transfer option is selected). Thanks to this notion, agents can choose which of the two must manage the script. This possibility is also offered for agent transfers with enquiry call.

Agent conference can be used:

- In the agent application (by running a "TransferAgentCall" node when the incoming call manages a script, or by pressing the **[Transfer call]** button of the M5000 CC User application (see Sheet U-500) if the call does not manage a script)
- Through the M5000 CC User API (by running the "TerminateTransfer" method of the "AgoraCall" object with the conference option).

8.3.1.12 USER ACTIVEX CONTROLCALL BACK

A call may be added to a list of outgoing calls from an incoming script (“Call Back" function), using a "FunctionCall" node (see Section 13.2.4.10.4).

8.3.1.13 SIMPLE ROUTING WIZARD

The 'SimpleRout' wizard is a program that helps Service managers to create incoming Service scripts.

8.3.1.14 SUPERVISION OF MITEL 5000 CONTACT CENTER ACTIVITY

The voice feature leads to specific reports (see Section 12.2) and specific real-time statuses, available in the M5000 CC Service Manager application. A comprehensive selection of properties can be displayed in the applications' info bar in order to supervise in real-time the activity of the contact centre and a wide range of variables can be used to create customized reports.

In the configuration without IVR, incoming calls can be rejected if necessary. For example, calls to a Service may be rejected when the current incoming call load becomes too high, or if the current day is a holiday. In this case, the calls are rejected by the PBX itself. This feature is called Reject 21.

8.3.1.15 VOICE CALLS SEEN BY THE AGENT

The agent has a user-friendly call window (see Sheet U-501) he can use for all typical telephone operations (pick-up, hang-up, switching the call to "On-hold" and resume it, transfer the call) such as managing its statuses ("Login/logout", "PCP", "Not Ready"). However the agent statuses can be managed using the preset scripts (see § 8.5.10) if you do not have the M5000 CC User application. In the latter case, a classification code can also be allocated to your calls using the associated call (see § 8.3.1.10).

Thanks to the M5000 CC User API and User ActiveX Control, it is now possible to integrate the features of the M5000 CC User application into an external application.

The M5000 CC User application can be used, whether a script is installed or not. Used without script, the M5000 CC User application enables agents to manage their statuses and perform typical telephone operations. However, the M5000 CC User application, reduced to a toolbar, can be very handy to broadcast information to the agents.

The UI (User Interface) script (see § 13.2.5) enables you to define, preset, direct the call's processing. The agent can remain free or be obliged to follow the script. It all depends on how the script is written. If included in the script, the agent can transfer the call to one of his colleagues or set up a conference call between the caller, another agent and himself (see Section 8.3.1.11). The latter feature is also available through the M5000 CC User API.

The agent can also decide to record his own conversation (see § 8.4.10.4.2), and this very easily using a button included to this effect in his application. This feature is also available through the M5000 CC User API.

8.3.1.16 MULTI-EXTENSION AGENTS

Mitel 5000 Contact Center offers agents the possibility to work with multi-line terminals (hereinafter referred to as multi-extension telephones). The main principles of this feature are:

8.3.1.16.1 CONFIGURING

The administrator declares some telephones with several extensions, some of which can be reserved for personal calls.

The maximum number of extensions that can be defined per telephone is 6.

Synchronisation with Active Directory allows only one extension to be imported per telephone, but it is possible to manually add other extensions to the telephones imported from Active Directory. These additional extensions will not be deleted during future synchronisations with Active Directory.

8.3.1.16.2 STATUS AND ACTIVITY OF MULTI-EXTENSION AGENT

When the agent connects to the M5000 CC Server and specifies a multi-extension telephone, his or her connection status (connected/not connected) and activity (ready/not ready) are the same for all the telephone's professional extensions.

To increase his or her productivity, an agent using a terminal comprising several professional extensions cannot switch to the PCP activity. Moreover, the idle time between two calls will be deleted from this configuration.

8.3.1.16.3 MULTI-EXTENSION AGENT AVAILABILITY

When will an agent connected to a telephone made up of several extensions be considered as available by the server for the distribution of a new call? The answer depends on the type of Service:

- For an incoming Service, it is the service manager that determines how this availability is decided upon. The

service manager must choose one of the proposed algorithms.

- For an outgoing service, an agent is only considered available if all his or her professional and personal extensions are free.

This notion of availability is not only taken into account in the distribution of calls (transfer from the media server to the first agent, and agent to agent transfer).

8.3.1.16.4 PRIORITY BETWEEN AGENTS

If several agents (with the required skills, languages and teams) are available for call distribution, to which agent will the call be first presented?

- First, the call will be presented to the agent with the least busy extensions. (Whose status is not “free”).
- Then in case of equality, the call will be presented to the agent that best meets the criteria defined in the TransferCall node.
- In case of equality here as well:
  - If all the extensions of these agents are free, the agent with the longest idle time will be chosen.
  - If these agents are already handling at least one call, the agent to whom a call has not been presented for the longest time will be chosen.

8.3.1.16.5 CONFIGURING THE PBX

All the extensions defined on the agents’ telephones must be declared in a PBX group, including personal extensions.

8.3.1.17 PNIA

The PNIA (Inter-Armed Forces Numbering Plan) allows several PBX multi-sites to be connected together on a "unified network" on which each subscriber has a unique phone number comprising 10 digits (hereinafter referred to as *long number*). In addition to this long number, each subscriber has an internal, 6-digit number (hereinafter called *short number*) which is only unique inside a multi-site on which it is located.

Only the long numbers are visible to M5000 CC users: in client applications, scripts, statistics, etc. Short numbers are only used inside the PBX and in some protocols used by M5000 CC to communicate with the PBX: they are never displayed to users.

If your PBX network is using the inter-armed forces numbering plan, you must configure your M5000 CC to convert short numbers to long numbers and vice-versa, where necessary. Once configured, M5000 CC will import the subscriber number translation rules from the management centre handling the PBX multi-site to which M5000 CC connects. This import can be performed manually at any time, and automatic synchronisation is also possible. The result of this import is stored locally in the M5000 CC file structure, to enable M5000 CC to translate the numbers even if the management centre is not reachable.

Please see Sheets U-350 and U-351 for more information on how to configure M5000 CC in a PNIA environment.

Constraints:

The following constraints apply to the PNIA configuration of M5000 CC:

- An M5000 CC Server can only connect to PBXs belonging to the same multi-site (MOVACS network) to supervise and control agent extensions, call pits, IVR resources and virtual sets: all these resources controlled by M5000 CC must belong to the same multi-site.
- An M5000 CC Server can only import number translation rules from one management centre.
- Since users are not supposed to know the short numbers (internal, 6-digit numbers), if external directories are accessed by M5000 CC, these directories are supposed to contain long numbers only (with 10 digits). M5000 CC will never translate short numbers from external directories to long numbers.

8.3.1.18 FAQVOICE MEDIA

How do I associate a dictionary with a preset voice in the “Babel” voice synthesis engine (Text-to-Speech)?

To define a personal glossary for the Babel voice synthesis engine, just use Lexicon Editor from Babel.

In this case:

- Select a preset voice.
- Press the dictionaries management button.
- Define a new dictionary.
- Modify the dictionary to define its own glossary (example: "#" pronounced "cardinal" with a French voice).

Note: If several dictionaries are defined for the same voice, you can define an order of priority their use.

How do I manage a transfer failure? (see § 13.2.2.7.3).

8.3.2 USING THE E-MAIL AND FAX MEDIA

8.3.2.1 OVERVIEW

M5000 CC introduces the notion of Intelligent mail (e-mail, fax and SMS) distribution (IED). This function routes incoming mails intelligently to the agents working in the contact center according to their skills, language, and the team they belong to.

All basic actions which can be performed on an mail are managed by the M5000 CC using a mail script: the system itself or the agents of the contact center are able to reply to, transfer, move, copy or delete the mails.

8.3.2.2 ARCHITECTURE AND COMPONENTS USED BY THE E-MAIL AND FAX MEDIA

Note: The use of the Fax is applicable only when the "Faxination" fax server option is installed.

The following features or components are used by the E-mail and fax media in Mitel 5000 Contact Center (see Figure 8.9):

- The **e-mail and fax server** is a PC equipped with 2 basic applications:
  - the message server (**Microsoft Exchange**, **IBM / Lotus Domino**) which manages the e-mail boxes used in the contact centre
  - a software solution used to convert fax to e-mail (**Faxination**).
- The Mitel 5000 Contact Center server includes 2 applications:
  - the **M5000 CC Server** (like for voice calls) which maintains the M5000 CC File Structure and searches for the best agent(s) to process the e-mail.
  - the **e-mail manager** which serves as intermediary between the M5000 CC Server and Exchange message server when their interconnection is based on Windows profiles. Each profile (defined on the M5000 CC PC and in the M5000 CC Administrator) is associated with an e-mail Manager instance. E-mail Manager instances are run automatically when the M5000 CC Server is started. Therefore, if no profile has been defined on the e-mail server client PC, no e-mail Manager instance is started by the M5000 CC Server, but if a profile is added to the M5000 CC Administrator, a new E-mail Manager instance is started automatically by the M5000 CC Server. If an e-mail Manager instance stops accidentally, the M5000 CC Server will try to restart it. Like any other client, the e-mail Manager instances are connected to the M5000 CC Server, but they run as background tasks,
  - the **M5000 CC Media Server** must be running since it executes the "server" part of the e-mail script (i.e. the "e-mail Server" trees),
- The M5000 CC client applications:
  - With the **M5000 CC Administrator**application, you can:
    - the evaluation and distribution of human resources (users, Service managers and agents) and physical resources (Services, profiles, inbound e-mail reception boxes, wall displays)
    - global management of the system (statistics, e- mail options, archives, backup, night mode, broadcasts, service mode, …),
  - With the **M5000 CC Service Manager**application, you can:
    - use resources received from the administrator (allocating agents to the Service, managing the status of the inbound e-mail boxes)
    - create languages, skills, and agent teams required for the Service,
    - evaluate the language and skill levels for each agent
    - create scripts
    - a specific menu is dedicated to Service activity supervision (in real time and in batch mode),
  - the **M5000 CC User** application is the application designed for the agents. It allows them to manage, via their PC, their logins / logouts, statuses and the e-mails they receive.
  - the **M5000 CC Wall Display** application is the application that manages the colors used on the banner display defined by the administrator and whose content is specified by the Service manager,
  - the **Statistics Builder** application is an application client of the M5000 CC Server which runs in the background. Its main roles are duplicating statistics tables, compressing databases, and deleting old statistics.

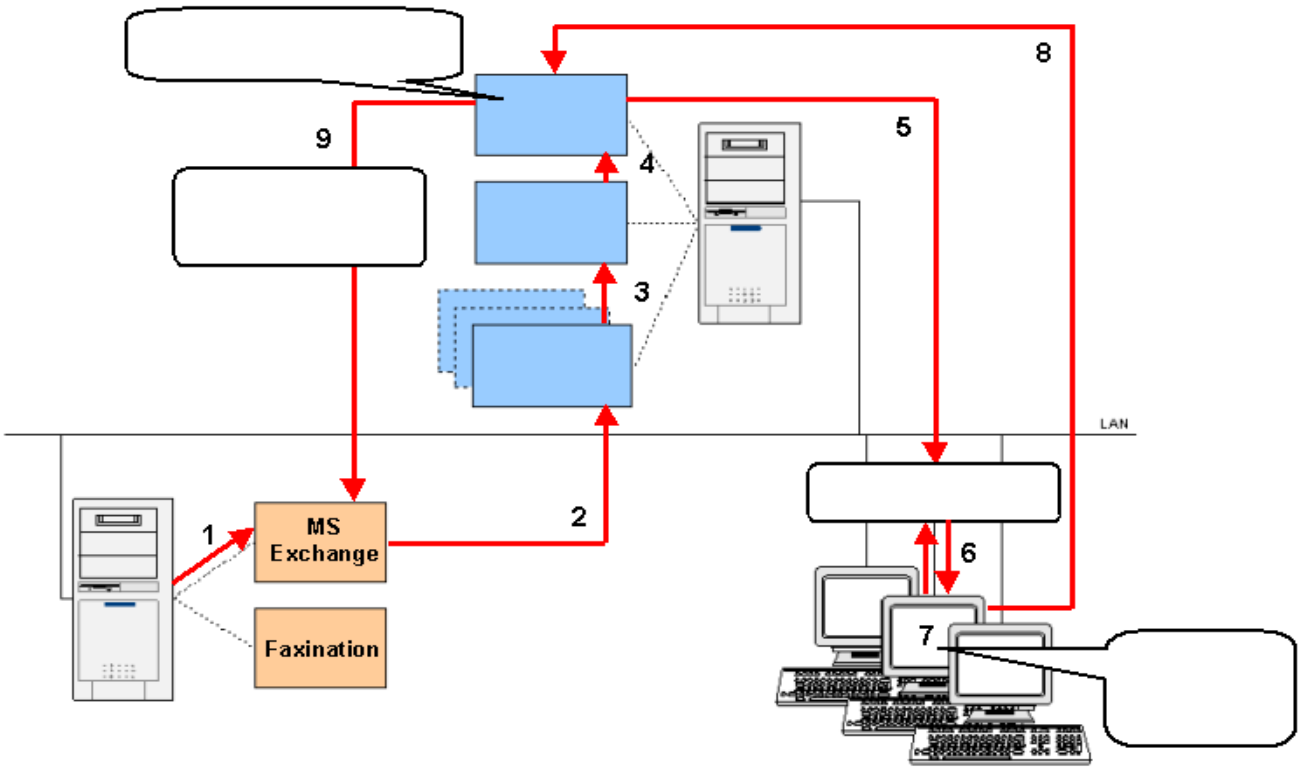


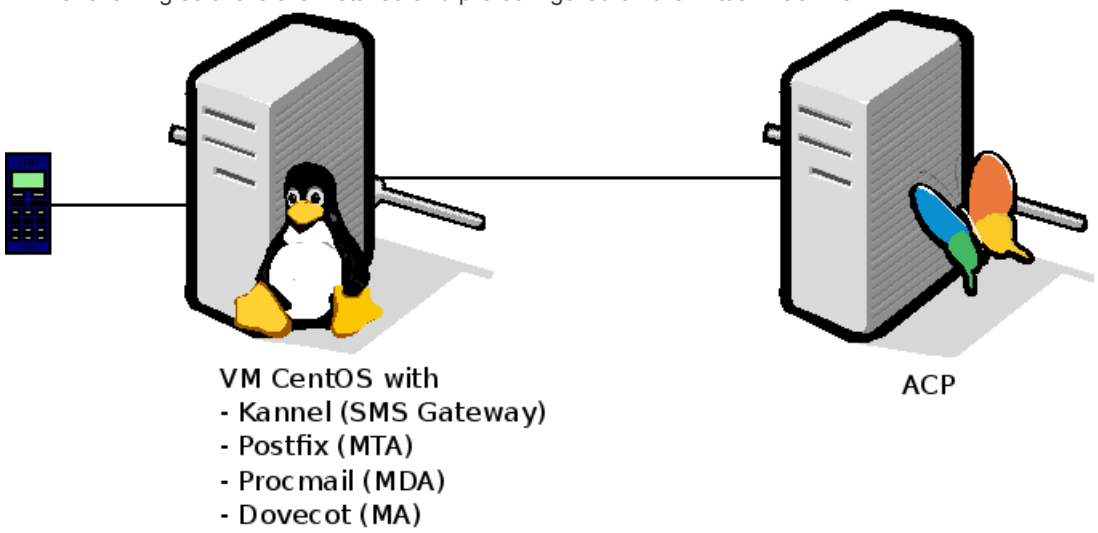
Figure 8.9 ARCHITECTURE AND COMPONENTS USED BY THE E-MAIL AND FAX MEDIA

8.3.2.3 SMS MEDIA

8.3.2.3.1 ARCHITECTURE

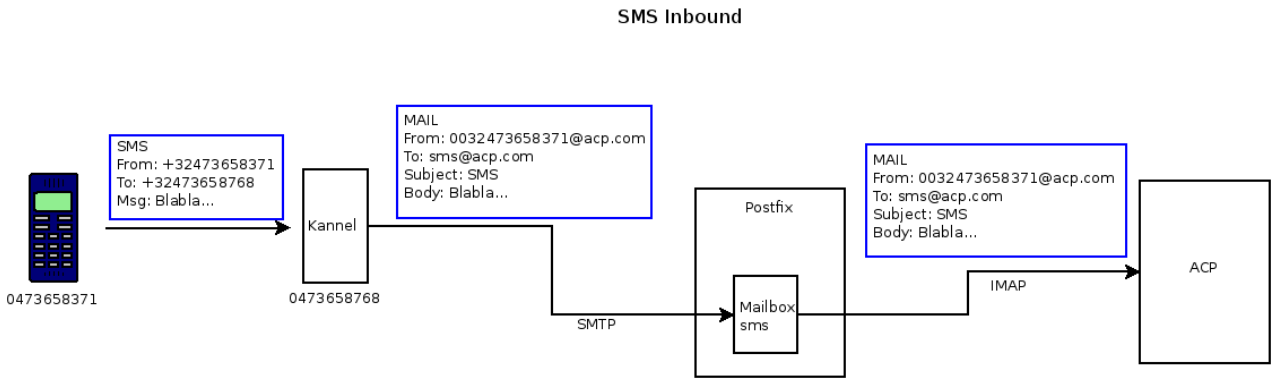
The working of incoming SMS treatment is based on open source softwares provided in a pre configured virtual machine (see …). The incoming SMS are transformed in e-mail and stored in a mail server. M5000 CC accesses this mail server through the IMAP protocol. In the context of an incoming SMS, when M5000 CC wants to send an SMS (for answering or transferring the incoming SMS), M5000 CC uses the SMTP protocol to send an e-mail to the mail server. This mail server is in charge to transform this mail into a SMS sending.

The following software are installed and pre configured on the virtual machine



- Kannel: a SMS Gateway: this gateway can in particular manage GSM modem in order to send and receive SMS.
- Postfix: it is a mail transfer agent (MTA) that routes and delivers electronic mail. This MTA will store the SMS transformed into e-mail locally. The MailDir directory structure is used to stored the e-mail (SMS). Postfix supports SMTP.
- Dovecot: it is an IMAP Server that supports MailDir. It allows to M5000 CC to access the e-mails (SMS) from Postfix server.
- ProcMail: a mail delivery agent that is used when M5000 CC send an SMS. It is in charge to manage e-mail send by M5000 CC to Postfix server and to transform it into a request to Kannel SMS gateway in order to send an SMS.

The next figure shows how an incoming SMS is treated:

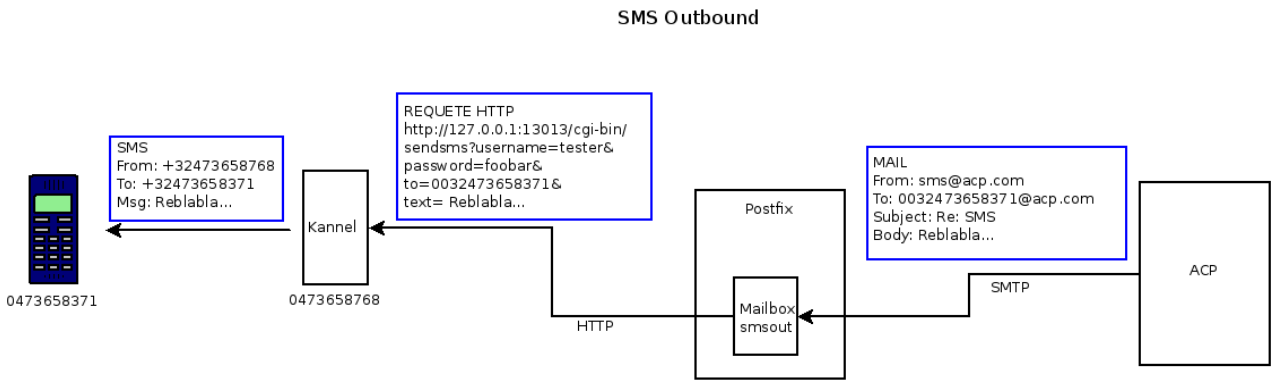


- Kannel manage a GSM modem. When an incoming SMS arrives, Kannel executes a script that is in charge to transform this SMS into an e-mail and to send it to Postfix through the SMTP protocol. An SMS transformed into an e-mail are the following characteristics :
  - The SMS sender phone number is used to build the sender e-mail address. The @acp.com suffix is simply added. For example, the 0033612345678@acp.com sender e-mail address is used for an incoming SMS from 0033612345678.
  - The destination e-mail address correspond to the mail box where the e-mail will be stored: sms@acp.com.
  - The SMS content is written in the e-mail body

- The e-mail subject is not relevant.

- The postfix server takes in charge this incoming e-mail and stores it locally in a mailbox (Maildir directory structure)
- Frequently, the M5000 CC checks for new incoming e-mail by using the IMAP protocol. Dovecot IMAP server is used to allows M5000 CC to access e-mail stored into MailDir directory structure

The next figure shows how a SMS send in response or in transfer of an incoming SMS is treated.



- M5000 CC sends a SMS in a e-mail form to the Postfix mail server via the SMTP protocol. The e-mail has the following characteristics:

  - The e-mail destination address is the SMS destination phone number to which the@acp.com suffix is added (e.g. 0033612345678@acp.com)

  - The SMS content is the e-mail body

  - The e-mail subject does not matter

  - The e-mail sender is defined in M5000 CC standard profile and is SMS@acp.com

- When the e-mail arrives at Postfix server, ProcMail is used to process this mail. Procmail is in charge to contact the Kannel SMS Gateway through the http protocol in order to ask him to send an SMS
- When Kannel receives an http request, it is in charge to send a SMS based on the http request data.

8.3.2.3.2 M5000 CC ARCHITECTURE

To allow M5000 CC to process incoming SMS, a standard e-mail profile is defined. It allows M5000 CC to connect to the mail server through the IMAP + SMTP protocols. As for incoming e-mail, the definition of the service that will process incoming sms is based on the mail box to which the SMS arrives. At service level, we define first the profile that is used for incoming e-mails (fax) and we define the profile that is used for incoming SMS. A mail profile can not be used simultaneously to process e mail and SMS.

Then, we define the mail box(es) from the SMS profile in which SMS arrives. These mail boxes are different from the mailbox when the incoming mails arrives. Every mail that arrives in an incoming mail box from a SMS profile is considered by M5000 CC as a SMS. Once the service is associated to the incoming mail (SMS), the M5000 CC can start the script and process the SMS like an e-mail.

The treatment of SMS (e mail) by M5000 CC is slightly different:

A suffix is added to the SMS sender phone number to transform it into a valid e-mail address: when M5000 CC receives the SMS, it removes this suffix and retains only the phone number (at script and user interface). In the same way, to respond to a SMS (or forward it), we need only to use the phone number. The M5000 CC adds automatically the suffix before sending the mail through SMTP.

8.3.2.4 PROCESSING AND LIFECYCLE OF E-MAILS AND FAXES

The subsequent events and actions in the lifecycle of an e-mail are summarized in the following diagram (see Figure 8.9 and Figure 8.10) and in Tableau 8.3 :

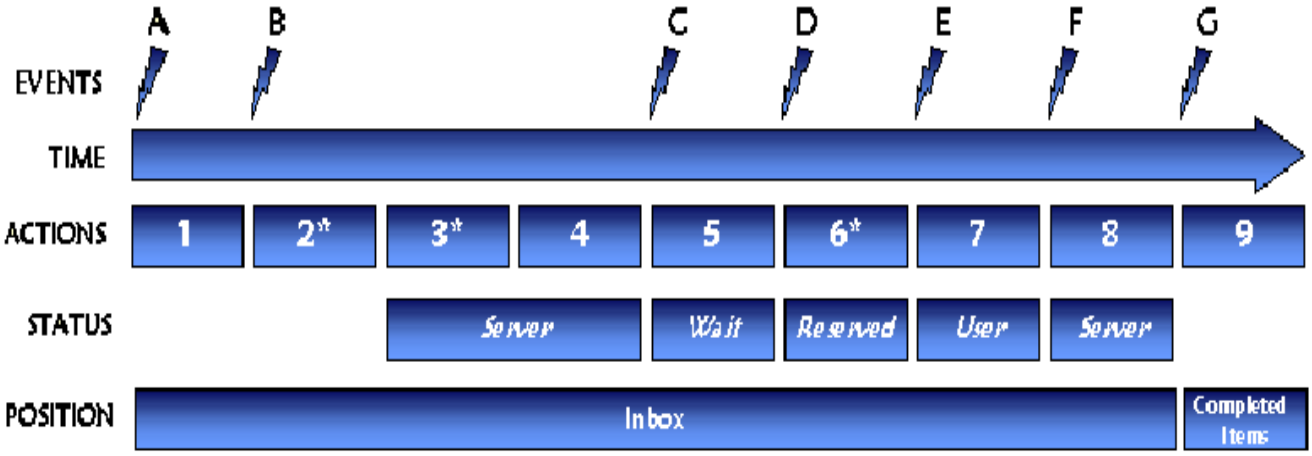


Figure 8.10 E-MAIL LIFECYCLE

Note: Actions marked with an asterisk are typically very short. The action numbers are also given in Figure 8.9.

Tableau 8.3 E-MAIL LIFECYCLE

EVENTS	ACTIONS
A : E-mail arrival	**1 :** The message server leaves the e-mail in the Inbox.
B : Initiating e-mail processing	**2 :** The M5000 CC Server or e-mail manager opens the e-mail, extracts the attachments and saves them in a temporary directory.
	3 : The M5000 CC Server identifies the service and version then prompts the M5000 CC Media Server to execute the corresponding scripts (according to the Inbox defined in the M5000 CC Administrator application). It is also at this moment that the run is created.
	4 : The M5000 CC Media Server executes the e-mail Server part of the script, excluding the "DistributeEmail" node.
C : Thee script reaches a "DistributeEmail" node (see § 13.2.7.2)	**5 :** The e-mail is presented to the agents via the pool.
D : An agent selects the e-mail from the Pool	**6 :** The User “run” begins. The e-mail leaves the pool because only one agent can access a given e-mail at a time (exclusive access). This action is very short (typically less than 1 second).
E : The User run starts successfully.	**7 :** The M5000 CC User application runs the User script
F : End of User script	**8 :** The M5000 CC Media Serverexecutes the rest of the e-mail Server script if another treatment was planned.
G : End of script	**9 :** The e-mail is moved to the "Completed Items" directory, and the attachments are deleted. At this time, there is no longer any “run” in the system and the statistics are saved.

Position of the e-mail in the message server:

- When the e-mail is in the Inbox, its status is first "unread" and no action is triggered in the M5000 CCat this time.
- The Inboxes are checked for new e-mails at regular intervals (defined via the administrator application). Any e-mail read remains in the Inbox and its status changes to “read” (unless a "MoveEmail" node (see Section 13.2.7.7) or "DeleteEmail" (see Section 13.2.7.5) has been met).
- At the end of the script, the e-mail is moved to the 'Completed Items' folder (except if a MoveEmail or DeleteEmail was met previously).

Possible e-mail statuses in M5000 CC:

- **Server**: status of an e-mail during the execution of the e-mail Server part of the script (not including the DistributeEmail node)
- **Wait** : status of an e-mail present in the agents' pool (this period can be relatively long and depends on the global timeout)
- **Reserved**: status of an e-mail when it is selected by an agent in the pool (this period is usually very short: less than a second).
- **User**: status of an e-mail when it leaves the pool and the e-mail User part of the script starts.

8.3.2.5 SCRIPT EDITING TOOL FOR THE E-MAIL MEDIA

The scripting tool is developed on the same basis as the one used in voice calls and web sessions handling: it offers the same features in skill-based routing, fast writing and user-friendliness. The e-mail Server tree and e-mail User tree (see § 8.5.4.1) are available to the Service manager who wishes to develop a script specific to e-mail handling. Inside these trees, the Service manager can use e-mail nodes (see Section 13.2.7) and e-mail variables (see Section 13.3.1) to distribute and process client requests efficiently.

Note: Refer to Section 8.5.3 for a detailed description of the script editing tool.

8.3.2.6 SUPERVISION OF THE ACTIVITY MITEL 5000 CONTACT CENTER

The e-mail feature leads to specific reports (see Section 12.2) and specific real-time statuses, available in the M5000 CC Service Manager application.

It is possible to display a complete series of e-mails (see Sheet U-483) in the applications' information bar M5000 CC Administrator, M5000 CC Service Manager, M5000 CC User and M5000 CC Wall Display) and on the wall display in order to supervise in real-time the activity of the contact centre and a useful set of predefined e-mail variables is available for creating customized reports.

8.3.2.7 E-MAILS SEEN BY THE AGENT

The agent can handle incoming e-mails through a user-friendly messaging window (see Sheet U-502) used to reply to customer requests without using an additional e-mail management solution (MS Outlook, Lotus Notes, etc.). However, integration with an e-mail management software solution is possible via the M5000 CC User API or User ActiveX Control. The message window becomes active once an agent selects an e-mail from the pool (see Sheet U-520): this is a window dedicated to e-mail management and which is common to all agents, but the agents only see e-mails that match their skills, languages and team.

8.3.2.8 FAQ E-MAILS AND FAX

8.3.2.8.1 HOW DOES M5000 CC MANAGE E-MAIL ADDRESSES?

How does M5000 CC manage e-mail addresses?: refer to Section 13.2.7.3.2.

8.3.2.8.2 ABOUT FAXINATION

This paragraph presents information on the "Faxination" software. Other information is available on the Faxination website: www.faxination.com.

Note: This information is an extract from the following website: www.faxination.com/products/fax4exch.asp

Send faxes as easily as you send e-mails.

Faxination is the leading commercially available fax solution for Microsoft Exchange. It is the first and only fax server on the market designed specifically for Microsoft Exchange. Unequalled integration - guarantees the profitability of your investment in Exchange. Faxination requires no separate fax client software.

It simply adds fax features to Outlook, enabling you to send and receive faxes just like e-mails. (...) Incoming faxes are received automatically in your own mailbox - saving valuable time and ensuring greater confidentiality. Moreover, Faxination is extremely user-friendly and does not require expensive and time-consuming training.

Faxination's native integration with Microsoft Exchange has another important advantage: the solution is

extremely easy to implement (server installation only!), deploy and maintain.

Faxination is extremely scalable and can service small to medium sized businesses as well as global corporations with 10-thousands of users and numerous offices located around the world. Faxination supports a broad range of hardware, all mainstream languages and is optimized for fault tolerant and clustered servers scenario's.

A long-lasting solution

Faxination is a product designed on a modular and open basis. It is fully adaptable to your future needs. It can be easily used with other applications and media.

8.3.3 USING THE WEB MEDIA

8.3.3.1 OVERVIEW

Within the framework of web session processing, the Mitel 5000 Contact Center has the following features:

- URL redirection via the "BrowseToURL" node (see § 13.2.6.4),
- interaction with Voice media (see § 8.3.3.3),
- database management:

  All the information entered through web pages can be stored in the company's internal database. The information contained in these databases can be displayed in the web pages. This function, therefore, reduces considerably the time spent in search of information. It is also possible to modify dynamically at the end of processing the data contained in these databases (e.g. change of client e-mail address or creation of a new client).

8.3.3.2 ARCHITECTURE AND COMPONENTS USED BY THE VOICE MEDIA

The following features or components are used by the Web media in Mitel 5000 Contact Center (see Figure 8.11):

- the company's **web site** will contain the Web pages on which customers can find and/or enter data.

  On this site a client object of the M5000 CC WebCall Service component is integrated into the web page. This web service will allow a call to be set up with M5000 CC Media Server. Thanks to M5000 CC WebCall Service, M5000 CC Media Server knows at any given time the page the customer is consulting and, based on the customer’s actions and the processing envisaged in the web script, the customer will be redirected to a specific page on the site. If voice media interaction is chosen (via an association and a synchronization; see Section 8.3.3.3), the customer browsing through the site can communicate with a contact centre agent by phone, and the data entered on the website will be recovered and displayed (if allowed by the user interface script) on the agent’s monitor. Likewise, based on the data entered during the conversation with the agent, it will be possible to redirect the customer to a specific page on the website.
- The **web server** is an architectural element that is not necessarily linked to the enterprise LAN if the latter is using an ISP that hosts the site’s web pages.
- The **proxy server** is an optional (though recommended) component of this architecture. It is used to manage the firewalls installed on the client side and server side.
- The main functions of the **M5000 CC Server** are **M5000 CC File Structure** management and searching for the best agent to process the call.
- The **M5000 CC Media Server** runs the IVR part of the scripts.
- The M5000 CC client applications (see those of the voice media; see Section 8.3.1.2).

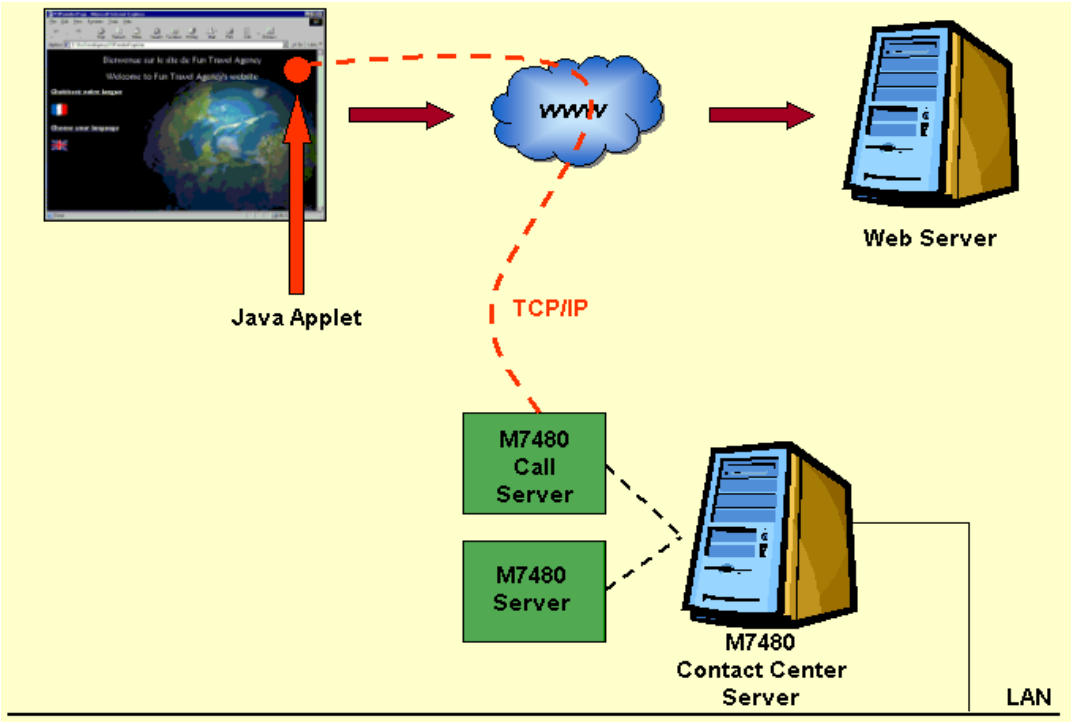


Figure 8.11 ARCHITECTURE USED BY THE WEB MEDIA

8.3.3.3 WEB - VOICE INTERACTION

Web – voice interaction is performed using two concepts:

- Association
- Synchronization

An association of sessions leads to the sharing of global variables and some properties of each session; the result is a unique call. It is performed using an "Association" node [Associate with Web] (see Figure 8.12 and Section 13.2.4.11).

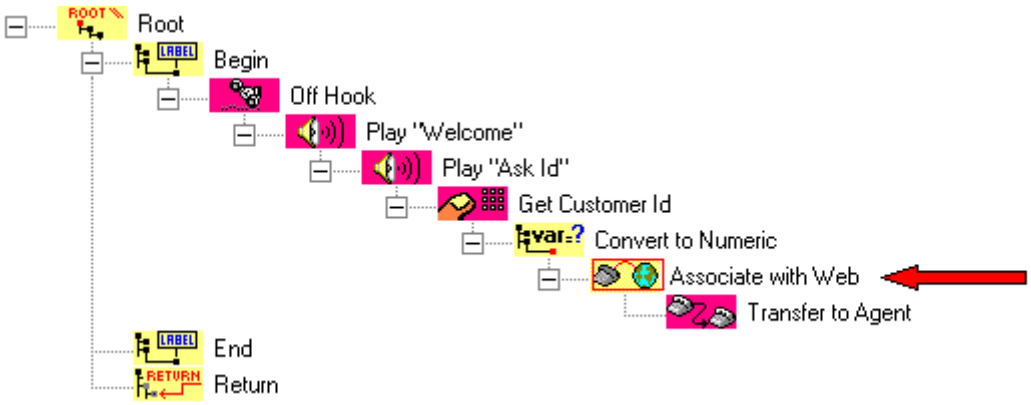


Figure 8.12 "ASSOCIATION" NODE

A synchronization between two sessions of the same call (two associated sessions) is an interruption of the execution of the active run of the second session, followed by the execution of the node of the tree which is specified in the Synchronization node [Synchronize Web for redirection] of the first session active run (see Figure 8.13and Section 13.2.4.13).

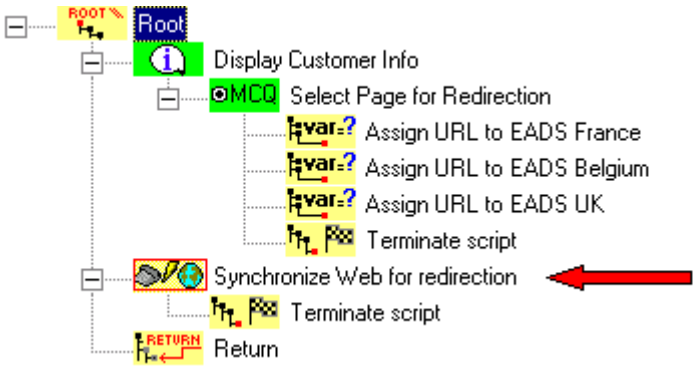


Figure 8.13 "SYNCHRONIZATION" NODE

8.3.3.4 SCRIPT EDITING TOOL FOR THE WEB MEDIA

The script editing tool is developed on the same basis as the one used for voice call and e-mail processing.

The nodes of the 'WebNodes' module are used on web trees (incoming Services only). They allow interactions between the system and the clients on the web (see Section 13.2.6).

8.3.4 CALLS & E-MAILS SECTION

8.3.4.1 OVERVIEW

Two media distribution mechanism exist in M5000 CC:

- A push distribution mechanism: this mechanism is only used for voice calls. With this distribution mechanism, the call is only displayed in the portal when an agent is reserved and when the call is presented on the agent phone (ringing). The agent can have up to 6 calls presented on its portal with this mechanism.
- A pool distribution mechanism: this mechanism is used for voice calls and for mails (E-mails, fax and SMS) media. A call (mail) is presented during the waiting phase to all agents that are capable to manage the call (mail). Once the call (mail) is picking up by an agent, it disappears from portal for all agents. It then reappears on the portal for the agent that picks up the call (mail).

Due to the pool distribution mechanism, there are a lot of calls that can be displayed on portal. It makes the management of calls by agent difficult:

- The calls and e mails that the agent currently process are lost among other calls
- It is difficult for agent to select the call to pick up among the waiting calls

In order to ease the call management by agent, a new mechanism is introduced: the administrator has the possibilities to define several sections in the calls and E-mails portal application. In the portal, each section will be displayed and when a call (mails) is displayed, it is displayed under its section. The next picture shows the portal with four defined section

One section is defined as the default section: all calls (mail) that are managed by the agent are displayed under this section. It includes the calls that are pushed by the server before the agent answers.

One section is defined as the default section for pool: it is the section where call distributed by pool and mail distributed are displayed by default if no section is selected in script or if the section selected by the script is deleted by the administrator.

The script has the possibilities to define the section in which a call is displayed:

- For call, when the distributed by pool mode is selected in transfer node, it is possible to select the section in which the call will be presented in portal. If no section is selected, the call will be presented in the default section for pool

In the portal, each section displays in addition to its name, the number of calls that are currently distributed under this section. Furthermore, when an agent clicks on a section, it selects the most priority waiting call:

- If a professional call is pushed on its phone, it selects this pushed call. If several calls are pushed at the same time, it selects the call having the highest priority first and then the call having the longest waiting time.
- Then, it selects a call among the call that are distributed by pool: first, the call with the highest priority, then the call with the longest waiting time.

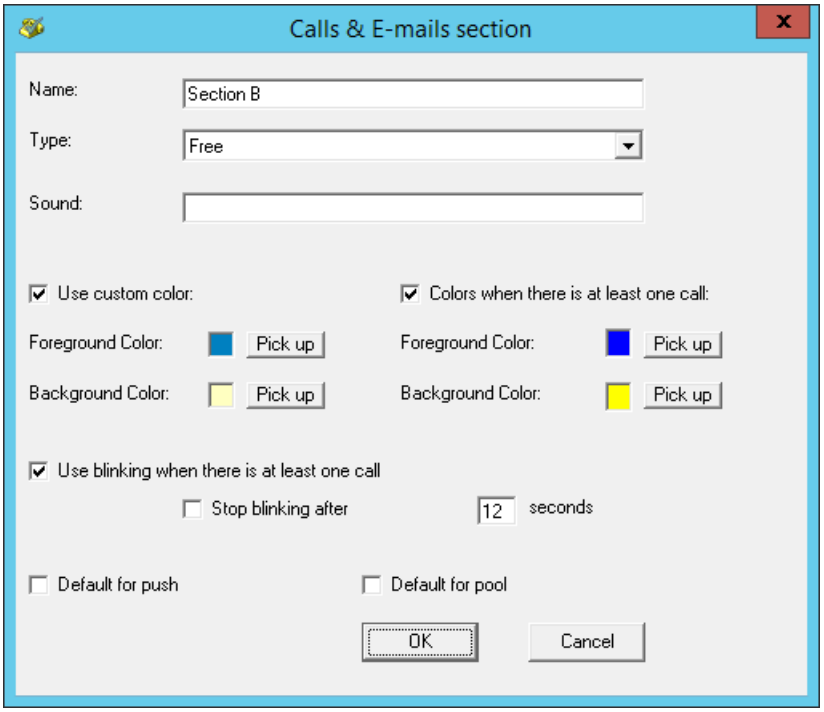
When defining a section, the administrator has the possibilities to select among three section type:

- Open section: in this section the calls are displayed under the section. This section type is the only possible for the default section.
- Closed section: in this section, the calls are not displayed and the agent can only pick up call by clicking on the section.
- Free section: in this section, a command button allows the agent to open/close the section. When the section is open, the section is displayed like an open section. When the section is closed, the section is displayed like a closed section.

The '**CallOrEMailSection**' intrinsic variable contains the section name to which call is associated

8.3.4.2 DISPLAY OPTIONS

The properties dialog box of the section allows to configure colors and blink options:

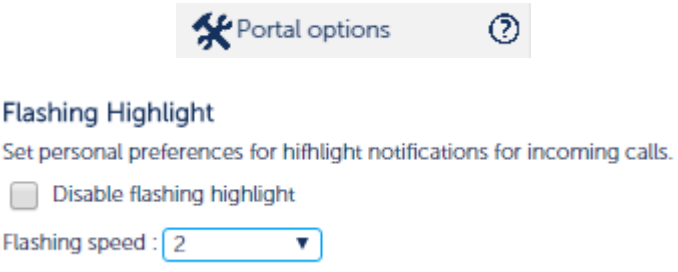


You can configure the colors (background + text) display of the section title bar.

In addition, you can configure a color change or a blinking of the title bar of the section. This applies when the section contains at least one call and that the section is in the reduced display mode.

When the blink option is checked, the administrator may request to stop blinking after a configurable number of seconds.

The blink is produced by reversing the background colors and text periodically. The blink frequency reflects the choice of the agent defined in the '**Portal Options**':



8.3.4.3 SOUND

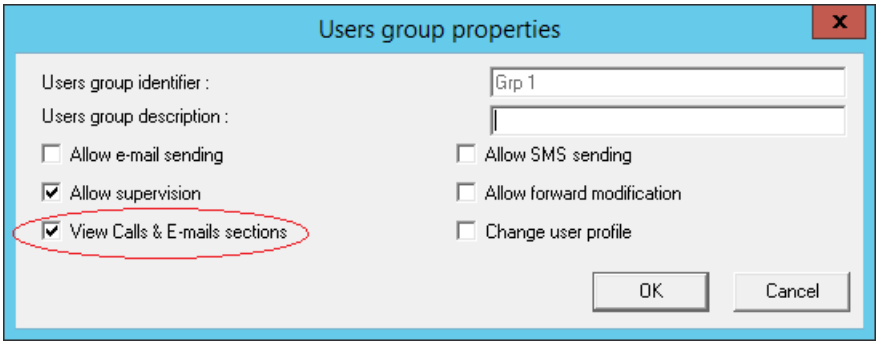
The administrator can define a sound for the section: this sound will be used by the portal when a call is distributed by pool on this section. For that it must indicate the name of an audio file to be placed in the directory '**%ProgramFiles (x86)%M5000 CC\Portal\Components\audio**'

On the portal, the agent will have the possibilities to select the section for which he wants sound to be displayed. If calls are distributed for several sections for which the agent has allowed to play sound, the portal

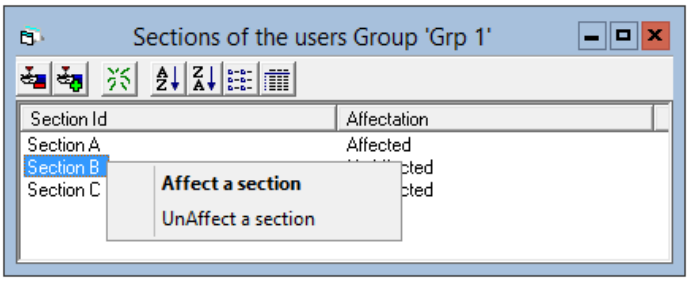
will use the sound associated to the first of these sections.

8.3.4.4 ENABLING THE FEATURE

For a user to view the sections in the WEB app '**Calls & Emails**', it must first give him the right by checking the corresponding option in the properties window of a group of users who owns this user. Otherwise, the WEB application will have the classic view (without section):



Then each section must be assigned to a user group for it to be visible to users who belong to this group, with the exception of sections "Default for push" and "Default to pool" assigned by default all users and can not be unassigned.



However, if an incoming call is assigned to a section in which an agent does not have access, but for which he has the skills, then this call will still be displayed for this agent in the '**Default for pool**' section.

8.3.5 USING THE MULTIMEDIA NODES

8.3.5.1 OVERVIEW

Multimedia nodes is composed of:

- Send E-Mail: a specific node to send e-mail
- Send SMS: a specific node to send SMS

All multimedia nodes can be executed in any script tree. If you want to send an E-Mail when M5000 CC manages a call, you can do it.

Note: User application cannot execute those nodes in attended mode. This mode only works in the Portal

8.3.5.1.1 SEND E-MAIL

The sending of an e-mail can be done thanks to the Send E-Mail (13.2.8.2) node or by giving the user the right to send an e-mail (U-327)

The e-mail message is composed of

- Subject
- To
- Cc
- Bcc
- Priority
- Attachments
- Contents

Note: E-mails sent are in HTML format

8.3.5.1.2 SEND SMS

The sending of a SMS can be done thanks to the Send SMS node(13.2.8.3) or by giving the user the right to send an e-mail (U-327)

The SMS message is composed of

- To
- Contents

Note: Long SMS are supported (> 160 chars)

8.3.6 GENERAL AGENTS MANAGEMENT

Agents are managed in the following two applications:

- The M5000 CC Administrator application
- The M5000 CC Service Manager application.

To become a service "agent", a user must first be created in the M5000 CC Administrator application then assigned to a Service to become an "agent" of this service. An agent is also added to a Service or deleted in the M5000 CC Administrator application.

Users selected by the Administrator to work in the Service have to be assigned to a particular Service version by the Service in the M5000 CC Service Manager application (see Sheet U-434). Assignment or removal is performed in real-time; assigned agents are managed instantly by the system.

In reality, the Service manager runs a group of agents available for a given Service. If an agent is working in many Services at the same time, a Service manager can temporarily remove the agent from one of the Services he/she manages, in order to balance the load between agents.

The service or team manager or team supervisor can record an agent’s telephone conversation with the M5000 CC Service Manager application (see Sheet U-434).

8.3.7 OVERVIEW OF SUPERVISION TOOLS

M5000 CC offers a a wide range of supervision tools, which, if used together, optimize Mitel 5000 Contact Center supervision Effective supervision enables you to quickly focus on certain difficulties or weaknesses so as to react within the shortest lead times.

8.3.7.1 SUPERVISION LEVELS

Several supervision levels are available in M5000 CC, which can be translated in terms of application as follows:

- M5000 CC Administrator application: the administrator is in charge of supervising the system and general information for all Services.
- M5000 CC Service Manager three levels of supervision exist:
  - **Service Manager:** in charge of the script, filters, definition of skills, languages and teams, and the configuration of the supervision of his Service. He or she will have access to the menus and options of the M5000 CC Service Manager application.
  - the **team manager**: has access to only a part of the M5000 CC Service Manager application. He will have to manage the agents in his team(s). He will have access to all the data viewing part.
  - the **team supervisor**: has access to only a part of the M5000 CC Service Manager application. He has no management rights for the agents assigned to his team. He can only view the real-time statuses and the reports about his team(s).

8.3.7.2 REAL-TIME SUPERVISION

8.3.7.2.1 GENERAL

The M5000 CC provides for a real-time supervision tool through real-time statuses (see § 8.3.7.2.2), which contain histograms and other pie charts used for graphic display of the contact center activity. The real-time statuses also include properties of statuses which can be displayed in information bars of the various client applications as well as on a wall display (see Section 8.4.11), with management of the various types of thresholded data (see Section 8.3.7.7). Information on the load of the IVR ports (Voice with IVR solution) are also available in real-time.

Note: *After the introduction of conference type IP resources, real-time statuses and reports associated with the "IVR port load" and "IVR saturation periods" do not differentiate between IVR resources and Conference IVR.*
Therefore, if a media server is using IP and conference IP type resources, the data evaluated for the reports and real-time status will take account of the amount of data received on all the IVR resources (IP and Conf. IP).
There is no distinction between these two types of resources.

A window for viewing agent extensions is also included (see Sheet U-470), with three different display modes. The supervisor can fully configure this window and thus choose the display mode for the information that suits him or her most.

In the CSTA solution without IVR, the Reject 21 feature is used to reject incoming calls if necessary. In this case, the calls are rejected by the PBX itself.

Custom counter type dynamic variables (see Section 8.3.7.2.3) are used to monitor the number of calls via the script, hence in real-time.

Thanks to the information exchanged with real-time statuses, thresholded data can be signalled via display, warning or alarm when the threshold set is exceeded (see Section 8.3.7.7).

8.3.7.2.2 OVERVIEW OF REAL-TIME STATUSES

Real-time statuses are useful for controlling the system and checking if some configuration changes need to be brought.

The following table lists the most useful functions and windows for real-time supervision, according to each Mitel 5000 Contact Center application:

Tableau 8.4 WINDOWS AND APPLICATIONS CONCERNED BY REAL-TIME STATUS PRESENTATION

APPLICATION	WINDOWS OR SHEETS CONCERNED
M5000 CC Server	• Agent Extensions window (see Sheet U-20) • Customer Extensions window (see Sheet U-21)

Tableau 8.4 WINDOWS AND APPLICATIONS CONCERNED BY REAL-TIME STATUS PRESENTATION

APPLICATION	WINDOWS OR SHEETS CONCERNED
M5000 CC Media Server	• Configuration of histograms (see Sheet U-130) • Media Server Status Window (see Sheet U-120) • IVR port load histograms (see Sheet U-130)
M5000 CC Administrator	• Configuration of histograms (see Sheet U-349) • IVR port load histograms (see Sheet U-360) • Information bar management (see Sheet U-346)
M5000 CC Service Manager	• Definition of a filter (see Sheet U-443) • Configuration of histograms and pie charts (see Sheet U-484) • Information bar management (see Sheet U-483) • Configuration of the agent status display window (including agent current day statuses) (see Sheet U-470) • Agent status histograms and pie chart (see Sheet U-470) • Call status histogram and pie chart (see Sheet U-471) • Extension status histograms and pie chart (see Sheet U-473) • E-mail status histogram and pie chart (see Sheet U-472) • Web session status histogram and pie chart (see Sheet U-474) • Quality of Service histogram and pie chart (voice calls, see Sheet U-475 and e-mail, see Sheet U-476) • Wait time histogram (voice calls) (see Sheet U-477) • E-mail processing time histogram (see Sheet U-478) • Service status pie chart (see Sheet U-479)
M5000 CC User	• Display of current day agent statuses (see Sheet U-500) • Information bar management (see Sheet U-540)
Wall displays through the "M5000 CC Service Manager" application	• Physical display (see Sheet U-483) • Information bar management (see Sheet U-483)

8.3.7.2.3 CUSTOMIZED COUNTERS

Customized counters are used to supervise the number of calls through the script. These correspond to a new type of global variables ("Custom Counter") with a value which must be numerical.

Upon each addition of a user variable of this type (e.g. a variable called "Alarm"), four numeric intrinsic variables (see appendix in § 13.3) are created automatically. The creation and deletion of these specific intrinsic variables are hence completely dynamic. Their name is constituted by the concatenation of:

- "ServiceCurrent", the name of the user variable and "Calls" (e.g. "ServiceCurrentAlarmeCalls"),
- "ServiceFlow", the name of the user variable and "Calls" (e.g. "ServiceFlowAlarmCalls"),
- "ServiceDayAccumulated", the name of the user variable and "Calls" (e.g. "ServiceDayAccumulatedAlarmCalls"),
- "ServiceHourAccumulated", the name of the user variable and "Calls" (e.g. "ServiceHourAccumulatedAlarmCalls"),

Several real-time statuses (see § 8.3.7.2.2) specific to the Service are also available based on these intrinsic variables:

- the "Number of calls meeting the criterion (name of the user variable)",
- the "Number of changes meeting the criterion (name of the user variable)",
- the "Number of calls meeting the criterion (name of the user variable) over the day",
- the "Number of calls meeting the criterion (name of the user variable) over the hour",

These real-time statuses are available thanks to the management of the display properties defined within a Service.

Note: Customized counters can be used both in inbound and outbound services.

8.3.7.3 DEFERRED SUPERVISION

A deferred analysis (see Sheet U-200) can also be indispensable for proper operation of the call centre: preset statistical reports (see appendix in chapter 13) are used to evaluate needs precisely. However, as the information meant for statistical reports is contained in the database "LongTermStatistics.mdb" whose table

content is communicated to you, you can create your own reports (see Sheet U-210) and thus customize your statistics.

M5000 CC offers the possibility to export the statistics to other databases (see Sheet U-320).

8.3.7.4 FILTERS

Whether the information comes from a real-time analysis (real-time status) or a deferred analysis (preset statistical reports), filters (see Sheet U-404) can be applied to calls (or e-mails) and/or agents. The filters hence can be used to create subassemblies, categories, and therefore increase the accuracy of the analysis. The notion of permissions (see Sheet U-443, ***{permissions}*** tab) linked to the filters is used to guarantee a certain level of security.

8.3.7.5 SUPERVISING AGENTS

Regarding agent supervision, M5000 CC provides for real-time allocation to the Service (or "deallocation") (see Sheet U-434) as well as a very user-friendly language proficiency management (see Sheet U-436) and agent skills (see Sheet U-437). This management is also performed in real-time. In a configuration with IVR, the Service manager, and the team manager or supervisor can record the agent's conversation (see Sheet U-434). Any person in the contact center with a set programmed beforehand with the supervision rights (programming in the PBX) can listen to an agent's conversation.

8.3.7.6 QUALITY OF SERVICE

Finally, a crucial notion in terms of supervision: Quality of service This exists for "voice calls" and "e-mails" and represents the time considered reasonable before a request is processed by an agent (see-Sheet U-417). Of course, this notion is subjective, and can be configured by a Service manager. Quality of Service is observed both in real-time as differed.

8.3.7.7 SIGNALLING THRESHOLDED DATA

Thanks to the information exchanged with real-time statuses the system can evaluate an activation condition on the basis of a predefined criterion.

Visual signalling:

M5000 CC manages three types of visual activations with real-time statuses:

- Display threshold:

  When the threshold is exceeded, the system displays the corresponding data in the status bar of the various client applications.

- Warning threshold:

  When this threshold is exceeded, the system displays the corresponding data, with a warning signal. An orange spot  appears in the status bar of the various client applications. On the wall display this information can be displayed in a particular configurable color (for example, orange, see Sheet U-620).

- Alarm activation threshold:

  This threshold has the highest level of importance. When this threshold is exceeded, the system displays the corresponding data and an alarm is signalled. A red spot  appears in the status bar of the various client applications and the different pie charts in the M5000 CC Service Manager application start to flash (agent statuses, call statuses, extension statuses, e-mail statuses, web session statuses, Quality of service of voice calls and Quality of service of e-mails : see Sheets U-470 to U-476). On the wall display this information can be displayed in a particular configurable color (for example, red, see Sheet U-620).

  At the beginning and end of each alarm activation period, the M5000 CC Service Manager application can display these changes in the alarm view window.

  At the end of each alarm activation period, the M5000 CC Server saves the characteristics of the alarm in the statistics. These are used in the new "Alarms (details)" report (see Section 12.2.3.30).

The thresholds are defined in the M5000 CC Service Manager application by a service manager or a team manager or supervisor (see Sheet U-483).

Note: *The thresholds are used with real-time statuses of Services and their associated filters.*

- *The data displayed from **remote servers** is also managed in this way, but the criterion used is not that defined on the remote sever but that defined locally. Remote server alarms are not saved locally.*

Audio alarm:

It is possible to generate an audio alarm when the alarm activation threshold is exceeded. The audio warning is

available only in the M5000 CC Service Manager application ("beep" on PC where the application is installed) and on an "Alpha™" wall display. On an "Activox" wall display the value displayed flashes. These differences are due to technical specifications.

The audio signal is configured in the M5000 CC Service Manager application (see Sheet U-484) globally for the Service and can be activated individually for each thresholded status (see Sheet U-483).

8.3.8 SYSTEM MANAGEMENT

8.3.8.1 DONGLE AND KEY CODE

8.3.8.1.1 SOFTWARE KEY CODE

A software key code is used to limit the use of an application.

A physical key (or *dongle*) which can be connected to the USB port of the Mitel 5000 Contact CenterServer PC allows the software to be activated. There are two dongle types:

- A standard dongle (see Section 8.3.8.1.2)
- A demonstration dongle (see Section 8.3.8.1.3).

Note: In this mode, the system cannot work without a dongle.

A software mode (or dongle less) without dongle allows the software to be activated. There are three types:

- A standard licence (see Section 8.3.8.1.2)
- A evaluation licence (see Section 8.3.8.1.3).
- A renewable licence (see Section 8.3.8.1.3).

8.3.8.1.2 DEFINITION OF LICENCES

Tableau 8.5 DEFINITION OF LICENCES

FUNCTION	DESCRIPTION
Product version	M5000 CC Server LC4097851B04
Agents connected simultaneously	Number of M5000 CC User applications that can be simultaneously connected to the M5000 CC Server
Number of IVR channels	Number of analogue resources that can receive calls (checked when the M5000 CC Media Server starts)
Incoming call agents	Maximum number of agents managing at least one incoming call at the same time. (At most one incoming call agent licence is used by an agent, no matter the number of calls this latter is managing).
Outgoing call agents	Maximum number of outgoing calls managed simultaneously by agents
Routing script agents	Maximum number of IVR scripts running (for incoming calls) at any given time
CTI agents	Maximum number of current User scripts (for incoming or outgoing calls) at any given time.
Simultaneous Text-To-Speech accesses	Maximum number of simultaneous accesses to the Text-To-Speech function
Simultaneous conference accesses	Maximum number of simultaneous accesses to the Conference Bridge function (checked when the M5000 CC Media Server starts)
Multimedia agents	Maximum number of multimedia agents managed simultaneously by M5000 CC
Simultaneous directory accesses	Maximum number of simultaneous accesses to the directory function (see Section 4.16.4)
Compatible product version	Compatibility with the current M5000 CC version
Failure tolerance	Unlocking the failure tolerance function

When the number of requests exceeds the number of licenses (no matter the type of license), a log message is added in the “Server log-on messages” window and the log file of the M5000 CC Server application.

Note: Only one “Multimedia agents” licence is used by the agent. Therefore, a multimedia agent can

handle several web-session related e-mails or calls, using only one licence.

Note: Simultaneous Text-To-Speech accesses: if several M5000 CC Media Servers are defined, it is possible to distribute Text-To-Speech licences in a customised manner between the different M5000 CC Media Servers in this latter's properties definition window.

8.3.8.1.3 DEMONSTRATION DONGLE (DONGLE), EVALUATION LICENCE AND RENEWABLE LICENCE

The demonstration dongle, evaluation licence and renewable licence are used to limit the period during which the system can be used. For instance, if a client wants to rent a product for a limited period of time, the system will be delivered to him or her with a demonstration dongle, evaluation licence or renewable licence.

The evaluation licence will activate all the functions until a fixed date. The renewable licence will activate specified functions until a fixed date. As from this date the server will deactivate all the licences. The demonstration dongle activates all the functions without activation key during an evaluation period. This evaluation period is expressed in hours and will be incremented by 1 day for each hour the M5000 CC Server is used.

7 days before the end of the evaluation period, a log message will be displayed, and an alarm activated to alert the administrator. The warning system will be activated every one hour on the last evaluation day.

With renewable licence in dongle less licensing, the system will try to retrieve automatically the licence from server licence. If this fails, log messages will be display like other licence type.

8.3.8.1.4 ACTIVATING, CHECKING, AND CHANGING THE DONGLE

To activate, check or modify the dongle, the operator must have access to the "Key code" window, accessible via two applications:

- For verification only, via the M5000 CC Server application (see Sheet U-22)
- For verification, activation or modification, via the M5000 CC Administrator application (see Sheet U-330)

The Administrator window is exactly the same as that of the M5000 CC Server application, except that it is possible to add a key. It allows the administrator to check or modify the key code currently being used. The administrator can also activate the tracking tool and define the key code from his or her application.

Administrators can use their own applications to display all the information available in the M5000 CC Server and M5000 CC Media Server. This way, they have an instant overview of important information available in these applications.

8.3.8.2 CONTROLLING THE M5000 CC SERVER AND M5000 CC MEDIA SERVER APPLICATIONS REMOTELY

With remote control software, you can connect PCs together in different ways:

- With a modem in a remote control session (WAN).
- Through a remote network (LAN).

What can I do on the host PC during a remote control session?

- The remote PC enables you to operate the host PC as if the remote user were in front of the host PC. He or she can use the PC files and programs and thus the M5000 CC Server and M5000 CC Media Server applications remotely.

Security:

- You can restrict access to the host PC drives, define connection names and passwords, and select data encryption.

8.3.8.3 MAKING SYSTEM BACKUPS

The M5000 CC Administrator application allows you to save files or directories, which can be selected from the system, to a configurable destination (drive and directory) (see Sheet U-311).

This operation can be performed only in Maintenance mode (see Section 8.3.8.4).

8.3.8.4 MAINTENANCE MODE

8.3.8.4.1 STANDARD STATISTICS DATABASE

Usually, the M5000 CC Server application has an exclusive write access to the database where system data is stored. However, this inhibits other operations, such as database compression, backup, etc. This is why the system may sometimes be switched to a special mode during which the M5000 CC Server releases the database access rights: this is the maintenance mode.

System restrictions in maintenance mode:

In maintenance mode, new records can be added, but each operation that implies a data modification is

disallowed:

- Administrators cannot change user passwords.
- It is possible to change all the managers of a service.
- Service managers cannot recompile scripts.

On the other hand, call data operations are always possible so long as new entries are not made in the database. This is why the agents can continue processing calls during maintenance periods.

Operations performed during maintenance periods:

It is possible to carry out two major operations while the system is in maintenance mode.

- Backup: the files associated with each version of each Service are copied to a different location (see Sheet U-311).
- Night procedure: the databases are compressed and old records are deleted from the statistics tables (see Sheet U-312, ***{Night mode}***tab).

Periods of time during which maintenance mode is enabled:

The administrator can define a daily interval of maintenance mode: it is the night mode (see Sheet U-312, ***{Night mode}*** tab). Its primary objective is to run the night procedure, but it is also possible to program during this period any type of data processing which must have access to the database (automatic backup, etc.).

Note: Since the exact duration of the night procedure is not known in advance, this operation only has to **begin** during the night mode. If the night procedure lasts longer than the night mode, the night mode end time will be the night procedure end time.

If an administrator performs a backup of the system outside the time interval of the night mode, the maintenance mode will automatically be enabled (which can lead to difficulties for other administrators or Service managers, due to the system restrictions described above).

8.3.8.4.2 EXTERNAL STATISTICS DATABASE

The maintenance mode still occurs; only the night procedure won't take place, even if you can still define it in the M5000 CC Administrator application. The other elements cited for the standard statistical database remain valid.

8.3.9 WIZARD

8.3.9.1 SIMPLE ROUTING WIZARD

The "SimpleRout" wizard is a program that helps service managers to create voice scripts for incoming services. The result is either an "Interactive Voice Response" tree or a "Non interactive voice response"' tree (see examples in Sheet U-460) used to perform basic tasks upon execution:

- Determining the CLID group (list of calling numbers) to which the client belongs
- Selecting a language according to the DNIS dialled by a client, and according to his or her CLID group
- Playing back various voice messages according to CLID group
- Making one or two attempts to transfer to a service agent, according to CLID group
- Using opening hours and holidays (only for *Voice Server without IVR tree)* defined for the CLID group
- Updating a list of nuisance call numbers
- Detecting nuisance calls according to this list and playing back an appropriate dissuasion message

Refer to Sheet U-460 for how to create and execute a "SimpleRout" wizard.

Note: The "SimpleRout" wizard generates a tree (called Routing) which can be later edited by a service manager. However, if the wizard is run again after the tree has been edited manually, all changes are lost: the last tree generated overwrites the previous one. An error message appears if you want to run the wizard a second time.

The "SimpleRout" wizard will also enable the service manager to define up to three basic elements (caller number, caller name, etc.), based on a proposed list, and which will be displayed in the agent applications during call presentation.

8.4 DETAILED DESCRIPTION OF COMPONENTS MITEL 5000 CONTACT CENTER

8.4.1 DESCRIPTION OF THE APPLICATION M5000 CC SERVER

The M5000 CC Server application is the application that must be started first. The M5000 CC Server application is the core of the system. If you try to close it, no call, e-mail or web session will be handled by the agents because they will be disconnected. The M5000 CC Server application closes the Statistics Builder application, (see Section 8.4.2) before stopping. If this latter is busy, the M5000 CC Server application waits for 30 seconds and then shuts down.

Refer to Sheet U-0 in Chapter 10 for the presentation of the M5000 CC Server application main window and its menus.

8.4.2 DESCRIPTION OF THE APPLICATION STATISTICS BUILDER

8.4.2.1 OVERVIEW OF THE STATISTICS BUILDER APPLICATION

The Statistics Builder application is automatically started with the M5000 CC Server application. Like any other client, it connects to the M5000 CC Server. It can be seen in the **'Connected Components'** window of the M5000 CC Server. Depending on the configuration defined by the administrator (see Sheet U-312, ***{Statistics}***tab), it starts in standard mode or in external replication mode (or both simultaneously or none of the two) (see definitions in the glossary Section 1.4). If at least one type of replication is chosen, a short message appears in the **"Server connection messages"** window, indicating the operating mode of the Statistics Builder application (standard or external).

If the Statistics Builder application stops accidentally, the M5000 CC Server tries to start it again.

8.4.2.2 ROLES OF THE STATISTICS BUILDER APPLICATION IN STANDARD REPLICATION

8.4.2.2.1 STATISTICS TABLES REPLICATION

The different applications do not access the statistics in the same tables. The M5000 CC Server accesses the statistics in a circular database (StatBuffer.CST) so as to work on a stable system. Client applications do not have access to this database. This is why the Statistics Builder application copies the circular statistics database into the "LongTermStatistics.mdb" (see Chapter 12 in appendix for a detailed description of the tables). This copying of records is done every 15 seconds, except during night mode in which no record is copied.

- **Standard statistics database:**

  If the administrator wishes to use the standard database, all the new "StatBuffer.cst" recordings will be replicated every 15 seconds in the "LongTermStatistics.mdb" database (see Section 12.3.3) used to consolidate the statistics available in the M5000 CC File Structure.

  Standard replication gives access to 56 preset statistical reports (28 in French, and 28 in English) (see Section 12.2).

For an administrator to be able to select the standard standard statistical database, refer to Sheet U-312.

8.4.2.2.2 NIGHT PROCEDURE IN STANDARD REPLICATION MODE

The Statistics Builder application removes the old records (defined by the administrator in the "Archives", see Sheet U-312, ***{Archiving}*** tab) and compresses the "LongTermStatistics.mdb" and "StatRecycler.cst" databases.

8.4.2.3 ROLES OF THE STATISTICS BUILDER APPLICATION IN EXTERNAL REPLICATION

8.4.2.3.1 STATISTICAL TABLE REPLICATION

The different applications do not access the statistics in the same tables. The M5000 CC Server accesses the statistics in a circular database (StatBuffer.CST) so as to work on a stable system. Client applications do not have access to this database. This is why the Statistics Builder application copies the circular statistical database into the external database defined by the user. Only the fields selected by the administrator will be copied into this external database. This copying of records is done every 15seconds, except during night mode in which no record is copied.

8.4.2.3.2 NIGHT PROCEDURE IN EXTERNAL REPLICATION MODE

In external replication mode (see Section 9.3.3), archiving of external database is not activated by default and have to be selected in ***{Archiving}*** tab ("Enable archive on External Replication").

Procedure "sp_DeleteOldRecords" has to be defined in the external database to be able to delete old records (for SQL database, this SP is already defined by default in the LongTermStatistics database).

FAQ "How to manage statistics replication errors?", regardless of the replication mode selected (see Section 11.5).

8.4.2.4 ROLES OF THE STATISTICS BUILDER APPLICATION IN THE EXTERNAL REPLICATION OF CONSOLIDATED DATA

When the type of replication chosen is external, the administrator may wish to replicate this consolidated data into an external database (external replication of the consolidated data, see Sheet U-312, ***{Statistics}*** tab).

The principle used is similar to that used for external replication of detailed data. But there is a major difference with external replication of detailed data.

In fact, a record of a consolidated table can be replicated several times. This involves adapting stored procedures accordingly (edit mode).

8.4.2.4.1 REPLICATING CONSOLIDATED TABLES

The Statistics Builder application replicates consolidated tables from the "LongTermStatistics.mdb" database. Only certain statistical tables in the "LongTermStatistics.mdb" base (see detailed description of these tables appended to Chapter 12.3.1.3). Only the fields selected by the administrator will be copied into this external database.

It is the administrator who sets:

- The duration of consolidation (see Sheet U-312, ***{Archiving}*** tab)
- The triggering of the external replication process (see Sheet U-312, "Options" in the ***{Statistics}*** tab): depending on the level of accuracy, this may be per quarter of an hour, per hour, per half-day and per day.
- The maximum throughput (see Sheet U-312, "Options" in the ***{Statistics}***tab): this copying of records may take place every 15 seconds, except in night mode where no record is copied.

8.4.2.4.2 NIGHT PROCEDURE FOR CONSOLIDATED DATA

The Statistics Builder application removes the old records (defined by the administrator in the "Archives", see Sheet U-312, ***{Archiving}*** tab) and compresses the "LongTermStatistics.mdb" and "StatRecycler.cst" databases.

8.4.3 DESCRIPTION OF THE APPLICATION M5000 CC MEDIA SERVER

The purpose of this application is to receive inbound calls corresponding to the DNIS (Dialed Number Identification Service: Number which was dialled to establish a phone call) defined in the M5000 CC Administrator application.

Refer to Sheet U-100 in Chapter 10 for the presentation of the M5000 CC Media Server application main window and its menus.

8.4.4 DESCRIPTION OF THE APPLICATION M5000 CC DIRECTORY SERVER

8.4.4.1 DIRECTORIES

Users connected to the M5000 CC Server through a thin application (for example, via M5000 CC (see SheetU-942)) can use a set of directories.

More precisely, each user can:

- Consult a directory: a user can consult a set of directories for which he or she has consultation rights.
- Obtain the contact record associated with the call: a user can automatically obtain detailed data about the caller or called party.
  - M5000 CC supports pictures in the following directories:
    - LDAP
    - Microsoft Exchange (2000/2003/2007 with SP)
    - Microsoft Exchange 2010
    - SQL (OLE DB)
    - SQL (ODBC)
    - XML
    - MiVoice 5000 (internal/external)
  - The following directories will not support pictures
    - Microsoft Exchange 5.5
    - Microsoft Exchange 2007 (without SP)
    - NeXspan (internal/external)
    - Domino
- Supervise a set of extensions: a directory user can supervise the extension status of contacts he or she has

obtained with a directory request. In particular, the user can see the extensions used and those that are not. Update is done in real time. To benefit from this, the "Supervision groups" function must be configured (see Section 4.16.2).

Moreover, the call-related data managed in the system is completed with name resolution (surname and first name). More precisely:

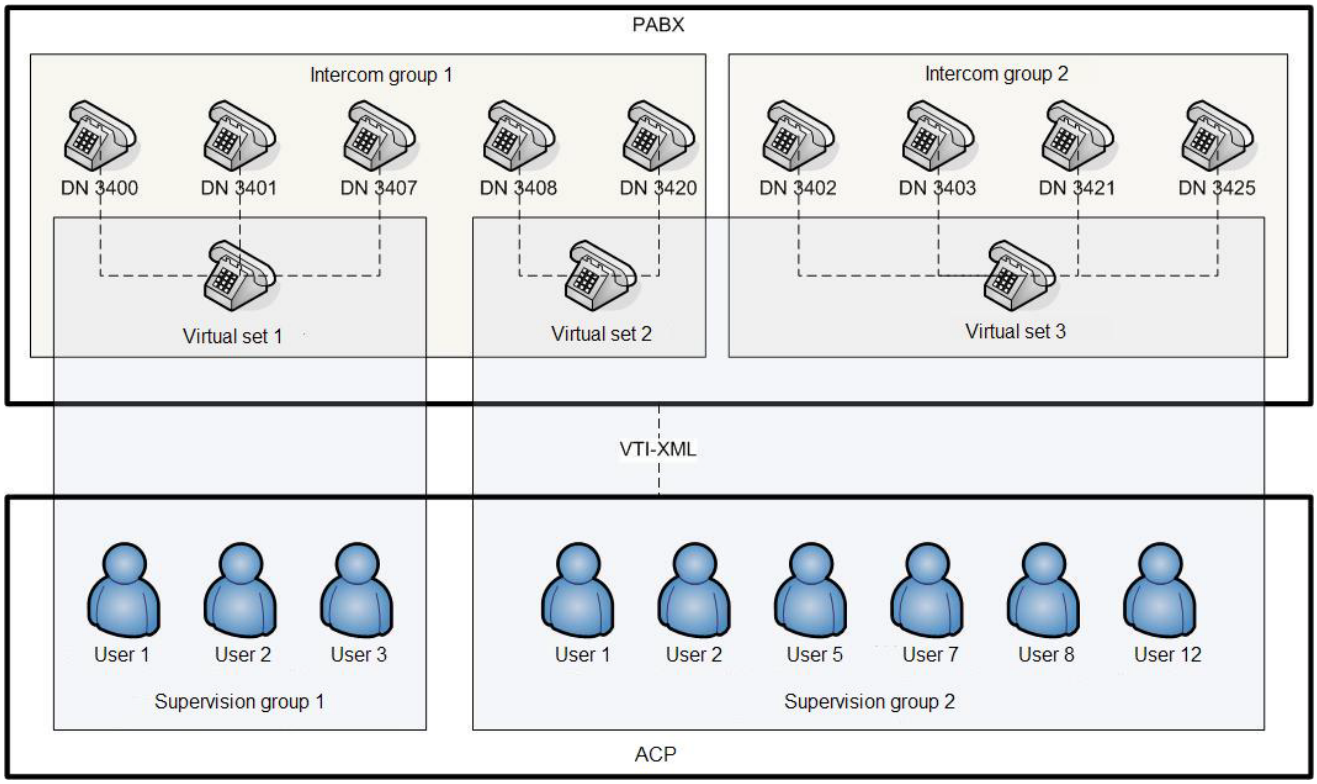
- New variables (see Section 13.3.1.1) are available in the scripts that indicate the surname (CallerLastName), first name (CallerFirstName) or both (CallerDisplayName) of the caller number associated with the call.
- The detailed call statistics (see Section 12.3) are also enhanced with new data.
  - RemotePartyFirstName and RemotePartyLastName
  - CallerFirstName and CallerLastName
- The reports that display the caller number (see Section 12.3) are enhanced with the display of this latter's full name.

8.4.4.2 SUPERVISION GROUPS

The "Supervision groups" function is used to supervise any extension associated with a set of virtual sets.

A supervision group contains one or more virtual sets, as well as one or more users:

- A virtual group can supervise up to 64 extensions and can be declared in one or more supervision groups.
- A user can be declared in one or more supervision groups.



This function can be used by each directory user to view the extension status resulting from a directory request, if it belongs to a supervision group and if the extensions are supervised in this group.

8.4.5 DESCRIPTION OF THE SERVICE M5000 CC REPORT SERVER

The M5000 CC Report Server has no graphical interface. It is an executable that runs in service mode and which is responsible for executing all requests concerning statistical reports; in other words it is responsible for creating reports. The statistical reports are available on a website managed by a web server and the M5000 CC Report Server. Therefore, the windows used by the consulting party are not those of the M5000 CC Report Server but those of the browser used to browse the site.

The following three components are essential for generating, consulting, and editing reports:

- The M5000 CC Report Server
- The web server
- The thin client browser.

This function offers several advantages when managing Mitel 5000 Contact Center statistics, namely:

- Viewing statistical reports remotely (see Section 8.4.5.1)
- Printing reports in real time (see Section 8.4.5.2)
- Automatic and scheduled printing of reports (see Section 8.4.5.3).

8.4.5.1 REMOTE VIEW

With the web reporting service it is possible to view statistical reports via a web browser from any PC connected to the internet or to an intranet, provided the site is published on a web server.

To log on to the Reporting web service, select immediate or scheduled report printing, and select a report among those proposed, see Sheet U-200.

8.4.5.1.1 WEB REPORTING SERVICE ARCHITECTURE

The M5000 CC reporting function is presented as a COM component (called web reporting service). This web reporting service is a DLL (called WebServices.dll) located on a web server and whose methods can be accessed via the internet through an ASP page. Client applications (called Clients Reporting) communicate with the web service by running ASP pages which call the methods of the WebServices (see Figure 8.14).

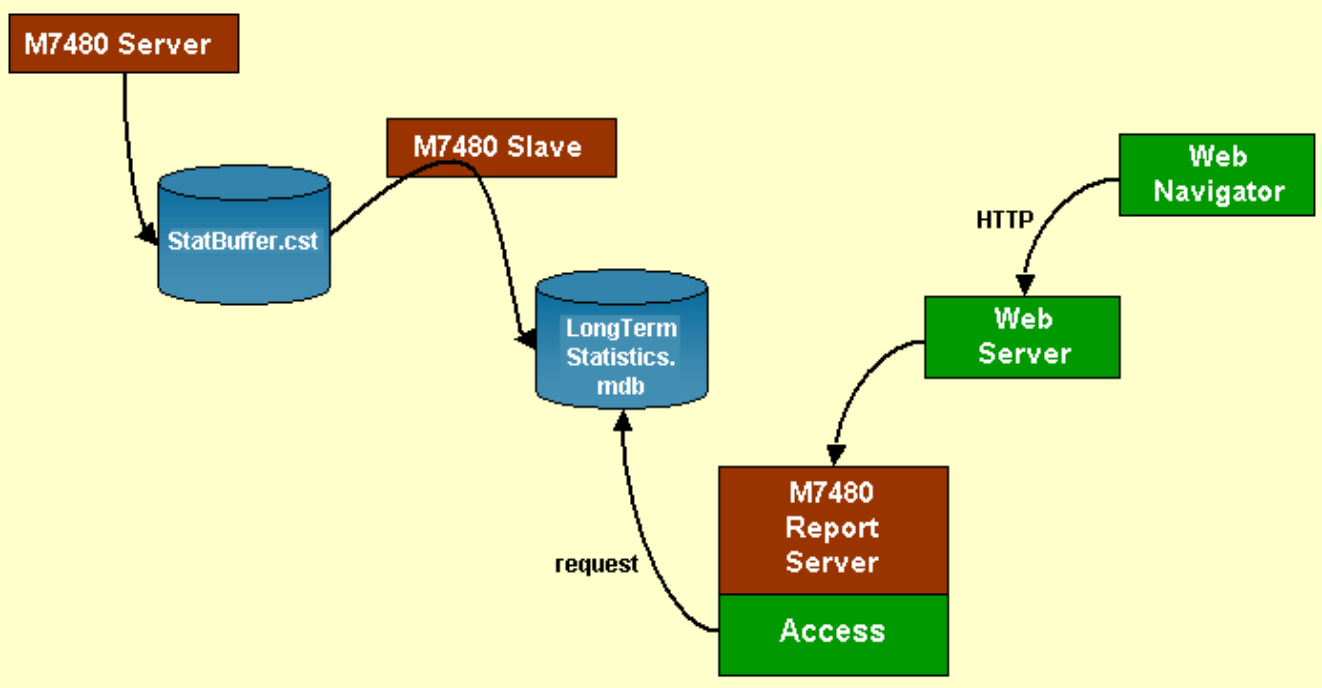


Figure 8.14 ARCHITECTURE OF THE WEB REPORTING SERVICE

8.4.5.1.2 'LONGTERMREPORTING.MDB' DATABASE

The "LongTermReporting.mdb" database contains all the data required to create statistical reports. The 'LongTermReporting.mdb' database is installed at the same time as the M5000 CC Report Server component. The 'LongTermReporting.mdb' database is composed mainly of preset standard tables and statistical reports (in French and English) (see the appendix to Chapter 12).

8.4.5.2 IMMEDIATE REPORT PRINTING

To select and configure instant report printing (period, date, format, destination...) refer to Sheet U-202.

8.4.5.3 AUTOMATIC AND SCHEDULED REPORT PRINTING

With the web reporting service report printing can also be automatic or scheduled according to a chosen frequency. Each user can add, modify or delete automatic schedules. These are, however, user-specific. A user can only delete printing sessions that he or she has defined. A schedule will be automatically deleted by the M5000 CC system in the following circumstances:

- When the Service to which the schedule applies is deleted
- When the user who defined the schedule is deleted
- When the user who defined the schedule loses his team manager, team supervisor or manager rights for the Service concerned.

To schedule automatic printing, refer to Sheet U-203.

8.4.6 DESCRIPTION OF M5000 CC WEBCALL SERVICE

This web service is used to create web media calls from a web browser. It is described in a separate document, available on the M5000 CC installation DVD.

8.4.7 DESCRIPTION OF THE M5000 CC E-MAIL MANAGER APPLICATION

Note: The content of this section only applies to the e-mail manager application if an Exchange-type profile defines the interconnection between M5000 CC and the message server. If this interconnection is based on a Standard-type profile, this section remains valid, but the corresponding operations are performed directly by the M5000 CC Server and not by an e-mail management application.

8.4.7.1 E-MAIL PROCESSING

The e-mail Manager checks for new e-mails in the Inbox folder of the defined inbound mailboxe(s) of the profile. If a new e-mail has arrived, the e-mail Manager informs the Server, in order to start a script to process this new e-mail. The e-mail Manager application performs all actions relating to the execution of the script's different e-mail nodes.

The role of the e-mail manager is to interact with MS Exchange Server to process the "ReplyEmail" (see § 13.2.7.3), "ForwardEmail" (see § 13.2.7.4), "CopyEmail" (see § 13.2.7.6), "MoveEmail" (see § 13.2.7.7) and "DeleteEmail" (see § 13.2.7.5) nodes and also to store the e-mails in the right folder.

Only a limited number of e-mails can be handled. One license is for processing of one e-mail at a time. If no license is available, the e-mail waits in the Inbox until a license is released.

8.4.7.2 CREATING FOLDERS

When the e-mail Manager starts, two new folders are created in each inbound mailbox:

- the Completed Items folder used to store already processed e-mails
- the Not Handled Items folder used to store problematic e-mails (with no sender, no recipient, etc.)

During e-mail processing, folders are created per Service (with subfolders for "Beta" and "Production" versions) in the "Completed Items" folder (see Figure 8.15). Each e-mail handled by the M5000 CC is moved to the corresponding Service and version folder of its inbound mailbox. This action is performed only if the e-mail is not moved or deleted by the script.

Figure 8.15 E-MAIL DIRECTORY TREE

8.4.7.3 DELETING OLD E-MAILS

During the night procedure, the e-mail Manager purges old e-mails from the Completed Items folder of inbound mailboxes. These are deleted when the number of days since their reception is higher than the number of days defined in the M5000 CC Administrator application (see Sheet U-312).

8.4.8 DESCRIPTION OF THE APPLICATION M5000 CC ADMINISTRATOR

8.4.8.1 ROLE OF THE ADMINISTRATOR

The administrator plays two important roles in Mitel 5000 Contact Center:

- Creating and managing system components
- Defining system properties.

The main role of the M5000 CC Administrator application is to allocate human and physical resources to the different Services of the company, and manage the system parameters.

The administrator is responsible for the general management a company: defining user access rights, assigning external phone numbers (DNIS) to the different Services, assigning users to the Services, etc. The management of each Service (execution steps, on-line monitoring, ...) is performed by the M5000 CC Service Manager application.

Refer to Sheet U-300 in chapter 10 for the presentation of the main window of the M5000 CC Administrator application and its menus, as well as the general tasks of an administrator.

8.4.8.2 CREATING AND MANAGING SYSTEM COMPONENTS

The administrator defines and manages (adds, modifies and deletes some components on) the Mitel 5000 Contact Center database - the resources enabling it to work:

- Users (see Section 8.4.8.2.1)
- Telephones, extensions and groups of message call pits (see Section 8.4.8.2.2)
- Wall displays (see Sheet U-340).

The administrator creates services (see Section 8.4.8.2.3) and assigns DNIS ranges to them. Once the services are created, he manages the allocation of resources (assigns the resources to or removes them from the Services). In so doing, he gives the Service managers the means to run their Service (see Sheet U-321).

To do this effectively, the administrator can display Service statuses (see Sheet U-348). He will then be able to control and manage the resources allocation in the contact center.Mitel 5000 Contact Center

In a CSTA configuration, he must define CSTA links (see Sheet U-329).

8.4.8.2.1 DEFINITION OF USERS

'Users' are persons. When a new user is entered in the system by an administrator, he or she receives an identifier (unique for the whole system) and a password. This data gives him or her access to the M5000 CC User application. The administrator can also grant an "**administrator**" privilege to a user: this user then has full access rights for the M5000 CC Administrator application.

A further data item is collected when the user is created: his name, unique in the system. An alias number can also be associated with a user: during the identification phase, the user can use this number instead of his identifier. If the agent is not an administrator, this number can be used to connect via a telephone.

When a user is assigned to a Service, he becomes an agent of this Service. The administrator can also define him as a Service manager. In this case, he can then configure the Service (allocate an agent, define the skills, the language and manage the teams,...).

Refer to the following procedures for adding or removing users (see Sheet U-302):

- Users,
- Agents,
- Service managers.

8.4.8.2.2 DEFINING TELEPHONES, EXTENSIONS AND GROUPS OF MESSAGE CALL PITS

Phone management:

Phones, which correspond to actual phones. The phone is defined as public (available for all users) or private (available for only one user, defined as a supplementary property of the phone). Each telephone receives a set of extensions (see Sheet U-325). The administrator can also define "Message call pits" telephones which will be used to play messages for the caller via the PBX. This set configuration will be used in a solution without IVR.

Note: The telephone is usually defined during the installation phase. Please call your support contact if you encounter any problems with phone definitions.

To add/remove a private or public phone and message call pit, refer to Sheet U-302.

Extension management:

To add/remove an extension for a phone, refer to Sheet U-302.

Managing call pits (solution without IVR only)

For performance reasons, it may be useful to add several extensions playing back the same message to the same group. Calls will then be distributed cyclically to the different extensions in the group.

To add/remove a call pit group, refer to Sheet U-302.

To assign an extension to a message call pit group, refer to Sheet U-302.

8.4.8.2.3 DEFINITION OF SERVICES

A “Service” corresponds to a particular category of calls treated in the same way. Upon creation, a Service receives two main properties from the administrator: the Service identifier and type of Service:

- Incoming (see general information in Section 8.3.1.4.1) or
- Outgoing (see general information in Section 8.3.1.4.2).

Incoming services:

To manage incoming services, refer to the Sheet U-302 :

- Adding/Removing incoming Services
- Associating DNIS ranges with incoming Services (voice)
- Assigning a profile (e-mail)
- Associating inbound call pits with the service (CSTA configuration - solution without IVR only).

Outgoing services:

To add/remove an outgoing service, refer to Sheet U-302.

8.4.8.3 DEFINING SYSTEM PROPERTIES

The administrator must configure the entire system (see Sheets U-303 and U-312). the administrator is also in charge of system maintenance. He or she must configure night mode, during which system maintenance takes place, define night mode and night procedure start and end time, and define the number of records kept in StatBuffer (it must be large enough to hold the information during the night procedure so no statistics are lost). Consequently, he/she must define the buffers size. Another task is to set the maximum number of recordable agents according to the number of resources available in the system.

For information about the administrator's system parameters management tasks, refer to the Sheet U-303 and the various tabs in the **'Properties'** window of the system (see Sheet U-312).

8.4.8.4 LIMITATION OF ADMINISTRATOR CONNECTIONS

To avoid conflicts, and given the importance of an administrator's roles (which consists in creating, managing and defining system properties), **only one administrator can be connected** to the M5000 CC File Structure

at a time (see Sheet U-310).

Note: You can easily check this information in the permanent "**Connected components**" window of the M5000 CC Server application.

Using different UserIDs:

If you try to connect to the M5000 CC Administrator application whereas somebody else is already connected to it using a different UserID, the following error message is displayed: "Another administrator is already connected": You must wait for the first administrator to log off before you can log on to this application.

Using the same UserID:

If you try to connect to the M5000 CC Administrator application with the UserID used to connect to another M5000 CC Administrator application, the following message box is displayed "You are already connected to the M5000 CC Administrator application": You then have to choose between cutting or maintaining the current connection to the application.

8.4.9 DESCRIPTION OF THE APPLICATION M5000 CC SERVICE MANAGER

8.4.9.1 PRESENTATION

The M5000 CC Service Manager application has three different forms, depending on the profile of the person connecting to it:

- The Service manager in the real sense of it
- The team manager
- The team supervisor.

Refer to Sheet U-400 in Chapter 10 for the presentation of the M5000 CC Service Manager application main window and its menus, as well as the general tasks of a service manager, team manager or team supervisor.

8.4.9.2 SERVICE MANAGER

The Service manager is in charge of the management of a Service. He has received this privilege from the administrator who gave him an identifier and a unique password upon creation. Service management is possible after performing the basic operations (see Sheet U-401).

Service management involves two main tasks:

- configuring the service (see § 8.4.9.2.1)
- monitoring the service (see § 8.4.9.2.2).

These roles are inter-dependent ; in that configuration changes have to be supervised and trouble detected through supervision may induce configuration modifications or adaptations.

The Service manager manages an entire Service: agents and their skills or language levels, scripts, filter definition, etc.

However, certain Service manager functions are available only when authorized by the administrator (see Chapter 11). In particular, depending on the options selected by the Administrator, a Service manager can:

- **Create a user**: the Service manager can create a new user and automatically assign the user to his Service without using the Administrator application.
- **Delete a user**: the Service manager can delete a user from the system if the following conditions are met:
  - the user to be deletedbelongs only to the Services (for production and beta versions only) managed by the Service manager concerned.
  - for each production or beta Service not managed by the Service manager, the latter is manager of all the teams to which the agent is assigned.
- **Modify a user**: the team manager can modify the properties of a system user if the same conditions as those required for deletion are met.
- **Add an agent to or delete an agent from his Service** : the team manager can select the agents for his Service without using the Administrator application. He can thus add agents defined in the system (by an administrator, Service manager or team manager) to his Service and remove them from his Service.

Depending on the rights granted by the administrator, Service managers will have some or all of these options.

8.4.9.2.1 SERVICE CONFIGURATION

The M5000 CC Service Manager can handle only one version of one Service at a time. The service and its version must be explicitly open. The name of the opened Service and the number of the opened version appear in the status bar in the lower part of the application window.

Service configuration consists of the following actions (see Sheet U-402):

- Managing the Service versions
- Defining the properties common to inbound and outbound Services
- Defining the properties related to inbound Services
- Defining the properties related to outbound Services.

8.4.9.2.2 SERVICE SUPERVISION

Service supervision consists of the following actions:

- Analyzing filtered information (see Sheet U-404)
- Analysis of unfiltered information.

8.4.9.2.3 Specifying agent rights

Via his application the Service manager can indicate, for each team, which agents are to be team managers or

team supervisors and which agents are to have no particular rights in the team. The "**Rights**" column in the view team agents screen gives the supervision level of each member of the team.

By default, agents have no rights in any team

8.4.9.2.4 Creating and deleting a user in the Service Manager application

A Service manager can create a new user if that user does not already exist. The Service manager must enter the following information when creating a user:

- The agent's identifier: this ID must be unique
- The agent's name
- The password to be used by the agent (with confirmation request)
- The agent's alias: this alias must also be unique
- The possibility to register the agent: the manager can indicate whether the agent can be recorded or not
- The agent's initial status (Ready or Not Ready)

The new agent created will not be an administrator: this value can be changed only in the Administrator application.

A Service manager can create a new user in the agent display window, by clicking the **[Create a new user]** button. The window for defining a new user opens. If any data is filled in incorrectly, a message appears (for example, "The ID already exists", "The alias cannot be empty", etc.). The new agent is added to the Service version concerned (the one to which the Service Manager application is connected).

To delete a user from the system, the Service manager selects the agent in the agent display window and clicks the **[Delete this user]** button. A message requesting confirmation of the deletion appears. If the manager confirms the deletion, the user selected will be deleted from the system, provided that:

- The user in questionbelongs only to the Services (for production and beta versions only) managed by the Service manager connected.
- Or, for each production or beta Service not managed by the Service manager, the latter is manager of all the teams to which the agent is assigned.

If neither of these two conditions is met, a message indicates that the user cannot be deleted.

Finally, the Service manager can change certain user properties such as password, initial status, etc. The same conditions must be met to delete a user as those required to modify a user. The Service manager makes the modifications in the agent display window, by clicking the **[Properties]** button.

8.4.9.2.5 Modifying agents of a Service or a team

A Service manager can add a new agent to his Service in the agent display window, by clicking the **[Add a new agent]** button. An agent selection window opens for the manager to select an agent from the list. The list of agents is filled in depending on the rights of the Service manager (see Chapter 11). The agent selected is added to the Service version concerned (the one to which the Service Manager application is connected).

To delete an agent from the Service, the Service manager selects the agent in the agent display window and clicks the **[Remove the agent from Service]** button.

8.4.9.3 Team MANAGER

The team manager is in charge of supervising one or more teams defined in one or more versions of service(s). He receives this Service manager privilege once he has been defined as being agent for a service. Team supervision is possible after having performed certain basic operations (see Sheet U-401).

The team manager can manage only a single version of a Service at a time. The service and its version must be explicitly open. The name of the opened Service and the number of the opened version appear in the status bar in the lower end of the application window M5000 CC Service Manager.

Team managers have limited rights over the agents in at least one of their teams. More precisely, a team manager can:

- change the language level of the agents in his team, but cannot create or remove a language (see Sheet U-436).
- change the skill level of the agents in his team, but cannot create or remove a skill (see Sheet U-437).
- remove an agent from his team (see Sheet U-434).
- Display all real-time statuses (pie charts, histograms and display properties). He can also modify the list of

passing filter display properties (see Sheet U-470).

- Edit reports concerning his team or members of his team.

Other options are available to the team manager, but only if the Service manager concerned has selected certain additional options (see Chapter 11). The team manager can, if authorized:

- **Create a user**: the team manager can create a new user and automatically assign the user to his team (and thus to the corresponding Service version).
- **Delete a user**: the team manager can delete a user from the system if the following conditions are met:
  - the user to be deletedbelongs only to teams (for production and beta versions only) managed by the Service manager concerned
  - for each team not managed (for the production or beta versions only) by this team manager, the latter is Service manager for the team in question.
- **Modify a user**: the team manager can modify the properties of a system user if the same conditions as those required for deletion are met.
- **Add a Service agent to the team**: the team manager can display the full list of agents in the Service and assign one of the agents to his team.
- **Add an agent to or delete an agent from his team**: the team manager can select the agents for his team even if they are not currently part of the Service. He can thus add agents defined in the system (by an administrator, Service manager or team manager) to his Service and remove them from his Service.

Depending on the rights granted by each Service manager, team managers will have some or all of these options.

8.4.9.3.1 Creating and deleting a user in the Service Manager application

A team manager can create a new user if that user does not already exist. The team manager must enter the following information when creating a user:

- The agent’s identifier: this ID must be unique
- The agent's name
- The password to be used by the agent (with confirmation request)
- The agent's alias: this alias must also be unique
- The possibility to register the agent: the manager can indicate whether the agent can be recorded or not
- The agent's initial status (Ready or Not Ready)

The new agent created will not be an administrator: this value can be changed only in the Administrator application.

A team manager can create a new user in the agent display window, by clicking the **[Create a new user]** button. The window for defining a new user opens. If any data is filled in incorrectly, a message appears (for example, "The ID already exists", "The alias cannot be empty", etc.). The team manager must then indicate to which team(s) he wishes to add the new Service agent. A list of all the teams managed by him in the Service appears, and he can then select one or more teams. The new agent is added to the Service version concerned (the one to which the Service Manager application is connected) and to each of the teams selected in the list.

A team manager can also create a new user in the team display window, by selecting the team and clicking the **[Create a new user]** button. The new agent is added to the Service version concerned (the one to which the Service Manager application is connected) and to the team selected.

To delete a user from the system, the team manager selects the agent in the agent display window and clicks the **[Delete this user]** button. He can also delete a user via the team display window, by selecting the team concerned and selecting the agent to be deleted. He then clicks the **[Delete this user]** button.

A message requesting confirmation of the deletion appears. If the manager confirms the deletion, the user selected will be deleted from the system, provided that:

- He or shebelongs only to teams managed (for production or beta versions only) by the team manager requesting the deletion
- Orif for each team not managed (for the production or beta versions only) by this team manager, the latter is Service manager for the team in question.

If neither of these two conditions is met, a message indicates that the user cannot be deleted.

Finally, the team manager can change certain user properties such as password, initial status, etc. The same conditions must be met to delete a user as those required to modify a user. The Service manager makes the modifications in the agent display window, by clicking the **[Properties]** button. He can also delete user data via

the team display window, by selecting the team concerned and selecting the user to be modified. He then clicks the **[Properties]** button.

8.4.9.3.2 Modifying agents of a Service or a team

A team manager can add a new agent to his team in two ways:

- Via the agent display window, by clicking the **[Add a new agent]** button. An agent selection window opens for the manager to select an agent from the list. This list of agents is filled in according to the rights of the current Service manager (see Chapter 11). The team manager must then indicate to which team(s) he wishes to add the new Service agent. A list of all the teams managed by him in the Service appears, and he can then select one or more teams. The agent selected is added to the Service version concerned (the one to which the Service Manager application is connected) and to the teams selected
- Via the team display window, by selecting the team concerned and clicking the **[Add a new agent]** button. Again an agent selection window opens for the manager to select an agent from the list. This list of agents is filled in depending on the rights of the current Service manager (see Chapter11). The agent selected is added to the Service version concerned (the one to which the Service Manager application is connected) and to the team selected.

To delete an agent from the Service, the team manager selects the agent in the agent display window and clicks the **[Remove the agent from Service]** button. He or she can also delete an agent via the team display window, by selecting the team concerned and selecting the agent to be deleted. He then clicks the **[Remove the agent from Service]** button.

Nota :
- *These actions can be performed only on agents and teams which can be managed by the team supervisor.*
- *At least one team must be defined in which at least one agent must have been distributed.*

8.4.9.4 Team supervisor

A team supervisor's options are limited. He or she can neither modify nor view the list of agents in his team. He or she can only:

- Display all real-time statuses (pie charts, histograms and display properties).
- Edit reports concerning his team or members of his team.

8.4.10 DESCRIPTION OF THE APPLICATION M5000 CC USER

Note: The M5000 CC User application is accessible in "fat client mode" (locally) or "thin client mod" (via M5000 CC). Application user sheets are grouped together in the series of sheets U-500 for the “fat” client, and in the series of sheets U-900 for the “thin” client.
The button icons described in this section are for fat clients. If necessary, refer to the M5000 CC Portal sheets for their thin client equivalents.

8.4.10.1 OVERVIEW

The M5000 CC User application enables agents to carry out some voice call and e-mail processing operations. There are two operation types

- Agent status management
- Interaction with the client (by phone or e-mail).

The M5000 CC User application has menus and a tool bar (see Sheet U-500) which is very practical for agents, if you do not use any agent script, provided you have a license for this application. If the agent is using a telephone terminal with several extensions, the main window comprises an extension panel used to select the line used.

Refer to Sheet U-500 in Chapter 10 for the presentation of the M5000 CC User application main window and its menus.

Using preset scripts

If you do not have the M5000 CC User application, you can still perform certain operations using preset scripts, accessible via the telephone. Agents can thus:

- Connect to the M5000 CC Server
- Change to "PCP" (see Section 8.4.10.6.2)
- Manage their "Ready" / "Not Ready" statuses (only with IVR) (see Section 8.4.10.6.1)
- Record their conversation
- Classify their calls thanks to the associated call (see Section 8.3.1.10).

8.4.10.2 HOW THE M5000 CC USER APPLICATION WORKS

The M5000 CC User application comprises:

- A main window (see Sheet U-500) common to voice and e-mail calls
- A call window (see Sheet U-501) or
- A message window (see Sheet U-502).

The M5000 CC User application guides agents during their communication with customers and enables them to manage their statuses. The conversation follows a set of successive steps called a tree (part of a script). The Service manager defines a script for each version of Service (see definition in Section 1.4). The script is executed by the user through the User Interface. A basic part of a tree is known as node. Some nodes carry out some operations without informing the agent about it, like making a request in a database, whereas others generate interactions between the agent and the system.

Each call is managed by the M5000 CC Server application. An agent can receive a call (for inbound Services) or be selected to call a client (for outbound Services), if he is not on line with a client and his status is "Ready" (see definitions in § 1.4).

8.4.10.3 BASIC OPERATIONS

- Starting the M5000 CC User application: Before processing client requests (voice calls, e-mails, and fax), the agent must start the application, log on to the M5000 CC Serverand identify himself (see Sheet U-510). Then, he must log onto his application (see Section 8.4.10.6) to process e-mails and be logged on and ready to receive calls. Of course, this supposes that the M5000 CC Server application is started.
- Printing data on the agent's extensions (see Sheet U-511)
- Reducing your application to a basic tool bar (see Sheet U-500)
- Deciding whether or not to display statuses in the information bar of your application (see Sheet U-540)
- View the agent's statuses for the current day (see Sheet U-500)
- Quitting the application (see Sheet U-500)

8.4.10.4 OPERATIONS LINKED WITH VOICE CALLS

- "If the agent is using a multi-line terminal, he or she can select, on the extensions panel, the line used for telephony operations (answering a call, ending a call, keeping a call on hold, resuming a call on hold,

transferring a call, recording a conversation and stopping conversation recording).

- The agent can answer the call and end it directly through the application, using appropriate buttons (see Sheet U-500).
- In the same way, he or she can put the call "On hold" and resume it using the buttons available in this application (see Sheet U-500).
- When managed in the script, the agent can forward the call to another agent (see § 8.4.10.4.1), and this, without any loss of information. When the agent must interrupt the conversation for any reason, he can forward the call and the customer sheet of the customer associated with one of his colleagues.
- The agent can also set up a three-way conference (see § 8.3.1.11), i.e. set up communication between the caller, another agent, and himself.
- If the agent has any doubt concerning the nature of a call, or if for any reason, he must keep a physical trace of the call, he can start recording his own conversation (see § 8.4.10.4.2).

Note: All these features are available through the M5000 CC User API.

8.4.10.4.1 TRANSFERRING THE CALL TO ANOTHER AGENT

The 'Transfer call' button  on the toolbar of the M5000 CC User application is available in the following cases:

- If there is an AgentTransferCall node in the UI script
- If the option ***[Transfer immediately]*** is not ticked in the specific part of the “AgentTransferCall node”.
- If the agent cancels the script whereas the call still exists.
- While asynchronous functions are running.

If the button is activated, the agent can transfer the call at any time during while the script is running.

8.4.10.4.2 RECORDING THE AGENT'S CONVERSATION

An agent may decide to record his or her conversation. The recording request is made directly thanks to a button in the tool bar of the M5000 CC User interface or by calling up a specific "InitiateRecording" method available in the M5000 CC User API. Considering its working principle, conversation recording requires the use of IVR resources.

This feature should not be confused with recording agents upon decision of the service manager/team supervisor (see Recording an agent's telephone conversation). In this case, the agent is recorded automatically, and the recording is sent by e-mail to a Service manager.

Conversation recording is only available for incoming calls. (It is not possible to record outgoing calls.)

Operating principle

Recording a conversation involves placing the call on conference with an analog resource. This operation will be performed by calling the DNIS number of the preset "Conversation Recording" service using an IVR type script.

To use the "Start recording" button  in the M5000 CC User interface toolbar or the specific "InitiateRecording" method of the M5000 CC User API, the DNIS of the "Conversation Recording" service must be defined in the ***{Recording}*** tab of the M5000 CC Administrator application properties. The agent can also programme a key on his or her phone to make the consultation call to the Recording service DNIS.

Once the user application is started, it checks whether or not the "Agent recording" function is available. the function will be considered as available if:

- The recording DNIS defined in the Administrator application corresponds to a DNIS of a Beta or Production service.
- The " /NORECORD " command line is not added to the application start icon (not available with the Portal).

So, if no recording DNIS is configured or if the associated Service does not contain any production or beta version, the recording buttons will always be activated.

The Record button can also be disabled by adding the " /NORECORD " command line to the User application shortcut (not available with the portal).

The default IVR script of the preset "Conversation Recording" service includes call pick-up, conference set up, and conversation recording.

The recordings will be:

- Backed up in a general directory specified by the user (some sub-directories are automatically created for

each agent)

- Sent by e-mail

The "Conversation Recording" Service must be modified by the user to configure the e-mail address to use and/or the record backup directory. Modification merely consists in updating the content of the global variables (see " Conversation Recording " detail).

8.4.10.5 E-MAIL-RELATED OPERATIONS

The e-mail management windows seen by the agent are described in Sheet U-502.

The agent will be able to take 4 specific actions related to e-mails:

- replying to e-mails
- forwarding e-mails
- copying e-mails
- moving e-mails

8.4.10.6 MANAGING STATUSES

The structure and organization of the M5000 CC requires that an agent should log on (see Sheet U-510) when he starts his work and that he logs out only when his work is completed. Between these two moments, the agent must manage his statuses:

- "Ready" / "Not Ready" (see § 8.4.10.6.1)
- "PCP(Post-Call Processing) (see Section 8.4.10.6.2).

8.4.10.6.1 THE "READY" / "NOT READY" STATUS

To receive calls, the agent must be logged on, ready and have at least one extension available. The principle of the M5000 CC dictates that the agents log on when they start working, and log off when their work is over. This means that the agents must play with their statuses to inform the M5000 CC Server whether or not they are available to pick up or make calls. Typically, during the lunch break, the agents do not log off, but shift into the "Not Ready" status. In the same way, an agent who would leave to participate in a meeting would also be seen as "Not Ready" by the M5000 CC Server, but always present in the contact center.

The administrator can define the initial activity of his/her agents during their creation, which facilitates the management of the agent's status, as the latter is not required to choose the appropriate start activity manually after logging on. Ten activity codes are used to distinguish between the various "Not Ready" statuses, and the administrator can assign a label to them, which facilitates agent supervision.

The Service manager can define the duration of the "Not Ready" status. The Service manager and team supervisor can easily supervise the agents' "Not Ready" status in real-time using the display properties, pie and bar charts (see Sheet U-470 available for this, as well as for viewing the agents' statuses (see Sheet U-470). Supervising the "Not Ready" status of the agents in deferred mode is also possible using the agents' status statistical reports (details) (see Section 12.2.3.16) and global status (details (see Section 12.2.3.18).

8.4.10.6.2 THE "PCP" STATUS (POST-CALL PROCESSING)

In order to understand well the notion of "PCP", the physical call must be distinguished from the logical call:

- physical call: for inbound calls, the physical call starts when the CSTA is informed of the presence of the call in an IVR resource / inbound call pits. For outgoing calls, the physical call starts when the agent makes the call (upon the execution of the "MakeOutboundCall" node).
- **Logical call**: this is the physical call + the "PCP".

Table9:

PHYSICAL CALL	PCP
LOGICAL CALL	

After a physical call has ended, an agent might have some actions to perform. For example, he may need another application to calculate results or to manage information produced in the call, or write a letter, a fax or an e-mail. This work phase is called Post Call Processing or "Agent PCP " (french abbreviation PCP). This status is closely linked to the call: indeed, this means associating the call and the 'PCP' made for this call. This is why the agent must identify himself as "PCP" before terminating the physical call.

The Service manager and team supervisor can easily analyze the durations of "PCP" achieved for each call using statistical reports on the "PCP" (agents' status and activities (details) (see Section 12.2.3.16) and agents' overall status (details) (see Section 12.2.3.18)). They can also supervise in real time the agents in 'PCP' using the display properties, in the bar chart and pie chart (see Sheet U-470), available for this and for viewing the agents statuses (see Sheet U-470).

Activity codes can be assigned for 'PCP' via the script, which is useful for distinguishing the tasks the agent must perform.

To increase his or her productivity, an agent using a workstation comprising several professional extensions cannot switch to the PCP activity.

8.4.11 DESCRIPTION OF THE APPLICATION M5000 CC WALL DISPLAY

8.4.11.1 OVERVIEW OF THE M5000 CC WALL DISPLAY APPLICATION

The M5000 CC Wall Display application is used to manage and control the physical wall displays through its various menus (see Sheet U-600). Two types of physical wall display are supported by the Mitel 5000 Contact Center (see § 8.4.11.2).

Every 5 seconds, the M5000 CC Wall Display application gets, from the M5000 CC Server, information broadcasts about the contact center activity and statuses. According to the wall displays configuration made by the administrator (which Service is displayed on which type of wall display) and the statuses to display defined by the Service manager, the application will send the needed information to the physical wall display.

Every user can start the M5000 CC Wall Display application. If no wall display type is specified in the command line argument, the application will propose all the display types available at start-up (see changing or configuring the argument in § 11.11).

If the M5000 CC Wall Display application is not started, no contact center information can be shown on the physical wall displays!

Configuring the parameters required for the operation of a wall display requires using two other applications (M5000 CC Administrator and M5000 CC Service Manager), in addition to the M5000 CC Wall Display application.

To display some information on an Mitel 5000 Contact Center wall display:

- In the **M5000 CC Administrator** application:
  - First configure the wall display. Do not forget to choose the Services for which you want to display some information.
- In the **M5000 CC Service Manager** application:
  - Select the properties to display and choose whether these properties must be displayed on:
    - The information bar of the M5000 CC Wall Display application
    - On the wall display, or
    - On both.
  - You can also display filtered information only or filtered information and general information about the Service.

- The Service manager/team manager can also broadcast "programmed" or "immediate" personal messages to agents in the service(s)/team(s) (see Sheet U-433).

Refer to Sheet U-600 in Chapter 10 for the presentation of the M5000 CC Wall Display application main window and its menus.

8.4.11.2 PRESENTATION OF PHYSICAL WALL DISPLAYS

Two types of physical wall display are supported by the Mitel 5000 Contact Center:

- Alpha™ 4120C or Alpha™ 4160C color wall displays
- Activox.

8.4.11.2.1 ALPHA™ COLOR MODELS

Figure 8.16 FRONT VIEW OF AN ALPHA™ WALL DISPLAY

Alpha™ color wall displays are provided with 2 serial communication ports for computer interfacing and networking:

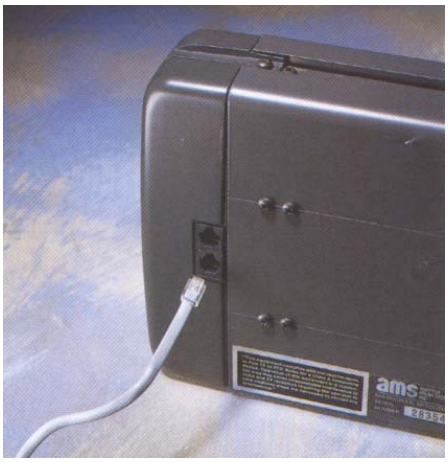


Figure 8.17 REAR VIEW OF AN ALPHA™ WALL DISPLAY

Tableau 8.1 SPECIFICATIONS OF ALPHA™ WALL DISPLAYS

CHARACTERISTICS	MODEL 4120C	MODEL 4160C
Case dimensions	102 x 20 x 13	132 x 20 x 13
Weight of display	8.9 kg	11.8 kg
Display dimensions	91.4 x 12.2 cm	122 x 12.2 cm
Display array	120 x 16	160 x 16
Characters displayed in Two-Line format	40 minimum	52 minimum
Characters displayed in One-Line format	12 typical	14 typical

Tableau 8.1 SPECIFICATIONS OF ALPHA™ WALL DISPLAYS

Display memory	28000 characters	27500 characters
Pixel size (diameter)	0.5 cm	
Pixel (LED) color	Each point can be red, green, or amber; three "rainbow" effects are available	
Serial Computer interface	RS232 and RS485 (multi-drop networking for up to 255 displays)	
Serial Computer interface	230 VAC / 50 Hz power supply	

8.4.11.2.2 ACTIVOX MODEL

Figure 8.18 FRONT VIEW OF AN ACTIVOX WALL DISPLAY

Tableau 8.2 SPECIFICATIONS OF ACTIVOX WALL DISPLAYS

MODEL	MODEL	CHARACTERS PER LINE	DIMENSIONS (MM)
ACT 16/2-2L	2	16	1100x230x70

For more information, go to Activeo's website: www.activeo.fr.

8.4.11.2.3 CONFIGURING ACT SWITCHES

Two dip switches are accessible for programming the serial link and panel address.

Tableau 8.3 COMMUNICATION PARAMETERS

SW1	ON	OFF	COMMENT
1	X		1 stop bit
		X	2 stop bits
2	X		Even
		X	Odd
3	X		7 bits
		X	8 bits
4	X		Validated parity
		X	Cancelled parity
5			Not used
6	X		Default communication speed: 9600 bauds
7		X	
8	X		

Tableau 8.4 MODIFYING THE COMMUNICATION SPEED

SW1			
56	57	58	Baud rate
-	-	-	1200
-	-	ON	600
-	ON	-	1200
-	ON	ON	2400
ON	-	-	4800
ON	-	ON	9600
ON	ON	-	19200
ON	ON	ON	19200

Tableau 8.5 PROGRAMMING THE PANEL'S SERIAL ADDRESS

SW2						
Decimal address	51 (high order)	52	53	54	55	56 (low order)
1	-	-	-	-	-	ON
2	-	-	-	-	ON	-
3	-	-	-	-	ON	ON
4	-	-	-	ON	-	-
5	-	-	-	ON	-	ON
6	-	-	-	ON	ON	-
7	-	-	-	ON	ON	ON
8	-	-	ON	-	-	-
9	-	-	ON	-	-	ON
10	-	-	ON	-	ON	-

8.4.12 DESCRIPTION OF THE INTERFACE M5000 CC USER API

8.4.12.1 OVERVIEW

The M5000 CC User API interface allows the client to use some of the M5000 CC Server functions in their own application.

The M5000 CC User API is an ActiveX DLL associated with the M5000 CC Server.

To connect to the M5000 CC Server, the external application uses the same parameters as the M5000 CC User application (path of the versions.cfg, user identifier, password and phone identifier). For the license, this component has the same behavior as the M5000 CC User application. The maximum number of connected components (M5000 CC User or M5000 CC User API) is limited by the locking key (see § 8.3.8.1.2): "Number of M5000 CC User Applications". If the maximum number is exceeded, an error is raised and the connection is lost.

The external application which will use the M5000 CC User API interface must have two references:

- To the M5000 CC User API application,
- To the M5000 CC Server.

8.4.12.2 FEATURES

8.4.12.2.1 CONNECTION

The M5000 CC User API enables an agent to log on to the M5000 CC Server. The Cookies_USR_Session object (see Section 14.1.11) must be created by the calling application and its Connect method has to be called. Once connected, the "User" object (see Section 14.1.29) enables you to manage the connection: change the connection status, the activity.

8.4.12.2.2 VOICE CALLS

Call management

The 'AgoraCalls' collection (see Section 14.1.6) is used to manage voice calls handled by the agent: accessing information about the call, changing the status of the call, associating a call with a web session, making an outgoing call.

Global variables

All global variables (intrinsic or user) within the context of an inbound or outbound call, are available in read and write via the "AgoraCall" object (see Section 14.1.5).

Transfer to an agent

The M5000 CC User API offers the possibility to make a transfer to a particular agent or a member of the Service. In the case of transfer to another member of the Service, an agent can be selected from a list of agents with the skills required for this call. This selection can also be made automatically by the M5000 CC Server based on certain criteria used to identify the best agent available. All the criteria used to make a selection are defined in the "AgentTransferRequirements" object (see Section 14.1.4).

Regardless of the type of transfer (to a particular agent or member of the service), the "PrepareAgentsListForTransfer" function defined in "AgoraCall" (see Section 14.1.5) must be called before initiating the transfer itself. This method returns as return data the agent or list of agents available for the transfer.

Setting up a conference

The M5000 CC User API can also be used to set up a conference call with a particular agent or member of the Service. This feature is based fully on the protocol used for transferring to an agent. The only difference lies in the method with which the enquiry call set up with the agent is ended ("TerminateTransfer" method in the "AgoraCall" object, see Section 14.1.5). It is at that moment that you must choose between a typical transfer or a conference (termination in conference mode can be validated only when the status of the enquiry call is Connected ("ConsultationConnected" event on the "AgoraCall" object). When the conference is set up, the M5000 CC User API can no longer perform transfers or conferences to another agent. When a conference participant leaves the conference, a "ConferenceMembershispHasChanged" event is raised on the "AgoraCall" object (end of conference).

8.4.12.2.3 E-MAILS

Pool display

The "PoolElements" collection (see § 14.1.22contains one item per e-mail of the pool that is presented to the agent. The application makes it possible to retrieve one e-mail from the pool with the AskElement method.

E-mail management

Each e-mail successfully collected from the pool generates the creation of one item in the "AgoraEmails"

collection (see § 14.1.8). This collection contains one item for each e-mail handled by the agent: it allows access to information about the e-mail, and enables you to forward it.

8.4.12.2.4 ERROR MANAGEMENT

A number of errors can be generated following an invalid call with methods offered by the M5000 CC User API. Most of the time, these error messages specify the origin of the error and their full description. Therefore, we strongly recommend including a management system for these potential errors to the client application using the M5000 CC User API.

8.4.12.2.5 REAL-TIME STATUSES

The M5000 CC User API presents the real-time statuses sent by the M5000 CC Server to the client applications. The external application has access to the following information:

- The real-time statuses concern a specific service. The agent connected must be assigned to this service to read this information.
- The real-time statuses of a Service filtered by a filter from this Service. In this case, the agent must not be assigned only to this Service, but must also have the user rights (see Sheet U-443) for the specified filter.

Note: When an agent is granted the right to view the filtered information, he must log off and log on to have access to it.

The service manager is the one who indicates which statuses can be viewed (see Sheet U-483) and by which application(s): M5000 CC Service Manager, M5000 CC User and/or M5000 CC Wall Display. Hence, all the statuses presented to the external application (which uses the API) depend not only on the permissions allocated to an agent, but also the display choice made by the Service manager.

For each real-time status presented, the following properties are available:

- Status identifier.
- Status value.
- The prefix used for this status on the level of display properties (defined by the Service manager).
- The suffix used for this status on the level of display properties (defined by the Service manager).
- Display threshold.
- Warning threshold.
- Activation threshold.
- Direction used by the alarm criterion (ascending/descending).
- Relative property used by the alarm criterion.
- Audio alert.
- Customized counter identifier.
- Associated customized counter type.
- Type of alarm currently in progress.
- Start time of the on-going alarm.

8.4.12.3 OBJECT MODELS

When the M5000 CC User API is connected, the "Agent", "AgoraCall", ... to "User" objects are available; Refer to the appendix in § 14.1 for details on their properties, methods, and events.

All the methods return an error code if they cannot be executed properly.

8.4.13 DESCRIPTION OF THE INTERFACE OUTBOUND CALL LIST API

8.4.13.1 OVERVIEW

The Outbound call list API interface is an ActiveX DLL associated with the M5000 CC Server. This interface allows the client to use some of the M5000 CC Server functions in their own application.

This M5000 CC makes it possible to access and manage the outbound calls list: log on to the M5000 CC Server, log onto a Service (or log off), open and close a Service, add and remove calls in the outbound calls lists, and supervise their contents. A multi-Services-oriented M5000 CC and a single DLL can connect to the M5000 CC Server at a time.

To connect to the M5000 CC Server, the external application uses the same parameters as the M5000 CC User application (path of the versions.cfg, user identifier, password and phone identifier).

8.4.13.2 FEATURES

Note: Refer to the appendix in the § 8.4.13 for the detailed description (properties/methods/events) of the objects and collections of the Outbound call list API.

8.4.13.2.1 CONNECTION

The Outbound call list API enables an agent to log on to the M5000 CC Server. It is the calling application which creates the "DiallistAPI" object by invoking the "Connect" method. This object also enables refreshing the 'Services' collection and receiving their connection status. Once connected, the 'Services' collection is created automatically, hence providing access to all the outbound Services defined in the M5000 CC.

8.4.13.2.2 MANAGEMENT OF THE SERVICE

The 'Service' object is used for access to each outbound Service. This object enables logging on to a Service (or logging off), opening and closing a 'Beta' or 'Production' Service, receiving the status of the Service and finding the path of the outbound calls list.

8.4.13.2.3 MANAGEMENT OF THE OUTBOUND CALLS LIST.

The "Diallist" object is accessible by the "Service" object. It is used to manage the outbound calls list even if the Service is open. Using this object, you can add, remove, and read call lists in outbound calls lists in 'Beta' and 'Production'. To read calls, the call identifier is used, which justifies adding an 'Ids' object, corresponding to a local snapshot of the call identifiers defined in the outbound calls lists in 'Beta' and 'Production'.

8.4.13.3 OBJECT MODELS

When the Outbound call list API is connected, the "DiallistAPI", "Services", "Service", "Diallist" and "Ids" objects are available. Refer to the appendix in § 8.4.13 for details on their properties, methods, and events.

All the methods return an error code if they cannot be executed properly.

8.4.14 DESCRIPTION OF THE INTERFACE USER ACTIVEX CONTROL

The User ActiveX Control interface allows connecting an agent to the M5000 CC Server through the Cookies User API.

ActiveX controls, called OLE controls, are standard user interfaces used for easy assembly of forms and dialogue boxes.

It is an ActiveX control which can be inserted into any client application (a tool bar per client application maximum).

Seen from an operator, the User ActiveX Control interface appears as a tool bar containing buttons with various M5000 CC User application features (see Sheet U-700).

The use of the User ActiveX Control interface and the modifications of its properties are described in the Sheet U-700.

The entire M5000 CC User API interface is accessible via the UserActiveXControl.Session object (see Sheet U-700).

8.4.15 DESCRIPTION OF THE M5000 CC FILE STRUCTURE

8.4.15.1 OVERVIEW OF THE M5000 CC FILE STRUCTURE

All the data used by the M5000 CC is saved on the hard disk of the PC hosting the M5000 CC Server. The root directory of this M5000 CC File Structure is named **"M5000 CC"**.

This M5000 CC File Structure is composed of seven sub-directories:

- The **"Attachments"** subdirectory (which is only visible when the e-mail Manager is started) temporarily contains the various e-mail attachments processed by the system. This directory is managed by the system and the user should not be able to access it.
- The **'Prompts'** directory contains the pre-recorded “Wave” files. These latter contain system sounds in various languages (by default: Dutch, English, French, German and Spanish) (see Section 8.4.15.2).
- The **"Published Files"** subdirectory is a directory used by the system to contain data accessible to other network (possibility to associate this directory to an HTTP access). It's composed with the following subdirectories.
  - The "**Attachments**" subdirectory temporarily contains the various e-mail attachments processed by the Portal
  - The "**Pictures**" subdirectory temporarily contains the pictures associated to contacts
  - The "**Recording**" subdirectory temporarily contains the various recordings processed by the system

  All these directories are managed by the system and the user should not be able to access it
- The **'ReplicationDB'** directory contains the configuration database(s) for the external replication of statistics. These databases contain the association between "M5000 CC" fields and external database fields (see Section 8.4.15.3).
- The **'Services'** directory contains one sub-directory per Service. Each directory specific to a Service includes two sub-directories (see Section 8.4.15.4).
- The **'Statistics'** sub-directory contains the statistical files generated when calls are received (Inbound Services) or made (Outbound Services) (see Section 8.4.15.5).
- The **'Versions'** sub-directory contains all the definitions used by the M5000 CC Server (specific parameters for telephony and for the various applications, e.g. “ActivationKeys”). This is the directory that contains the Versions.cfg and Agora1.cfg files. It also contains an OutboundDialList.cfg file that is used to read a property (see Section 8.4.15.6).

To be able to connect to the M5000 CC Server, a user must specify the Versions.cfg file path with which he or she is going to work. This path is located in the "Versions" directory.

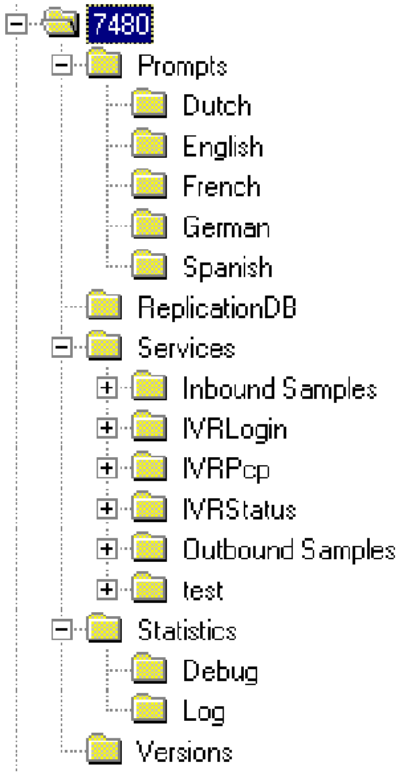


Figure 8.19 M5000 CC FILE STRUCTURE TREE

8.4.15.2 DESCRIPTION OF THE "PROMPTS" SUB-DIRECTORY

Five languages are pre-defined in the system:

- Dutch
- English
- French
- German
- Spanish

For each of the languages, the pre-recorded system “sounds” (i.e. prompts) are saved in their corresponding sub-directories.

A new sub-directory will be added for each new language defined as a “new pre-defined language” in the M5000 CC Service Manager application.

The prompts recorded in these sub-directories are available for each Service. If a prompt is modified, the modifications will be effective for all the Services using this prompt.

Note: These prompts must be recorded in the “CCITT µ-Law 8 kHz; 8 Bit ;Mono” format in order to be able to be broadcast by the script nodes.

8.4.15.3 DESCRIPTION OF THE "REPLICATIONDB" SUBDIRECTORY

This directory contains the configuration database(s) for the external replication of statistics. These databases contain the association between the “M5000 CC” fields and the fields of the external database (Access or Oracle).

8.4.15.4 DESCRIPTION OF THE "SERVICES" SUBDIRECTORY

The **Services** directory contains one sub-directory per Service. Each Service directory is then divided into sub-directories:

- For each inbound Service, there are:
  - The **Projects** directory containing all the scripts
  - The **Sounds** directory containing the .wav and specific Service segment files
- For each outbound Service, there are:

- The **Projects** directory containing all the scripts
- The **OutboundDialListBeta.cfg** database
- The **OutboundDialListProduction.cfg** database

8.4.15.4.1 DESCRIPTION OF THE "PROJECTS" FOLDER

The files contained in the **“Projects”** directory contain the data for the Service (e.g. , variables, nodes, etc.). They are designated 1_0.ide, 1_1.ide,...,2_0.ide,... where the first digit identifies the Service version number. The second digit is incremented each time the script is saved.

Note: The maximum number of “ide” files saved per Service version is 20. Beyond that, the oldest “ide” file will be overwritten each time a new file is saved.

8.4.15.4.2 DESCRIPTION OF THE "SOUNDS" FOLDER

The sound files (user voice messages and segments) are added to their corresponding sub-directories (Dutch, English, French, German, Spanish, etc.) when a new language is defined for a Service.

For any script compilation resulting from the modification of sounds, a new segment file is generated.

The **E-Mail Messages** sub-directory is used to store either messages recorded by the caller (by means of the RecordVoiceMessage node), or the agent recordings when these files cannot be sent by e-mail (for example, in case of network problem).

8.4.15.5 DESCRIPTION OF THE "STATISTICS" SUBDIRECTORY

The following databases contain the results of the different calls:

- **" StatBuffer.cst"** is an intermediate database. It is used during calls and its content is copied using the Statistics Builder application in "LongTermStatistics.mdb".
- The **"LongTermReporting.mdb"** database contains all the data required to create statistical reports. The 'LongTermReporting.mdb' database is installed at the same time as the M5000 CC Report Server component. The "LongTermReporting.mdb" database is composed mainly of tables and predefined standard statistical reports.

8.4.15.6 DESCRIPTION OF THE "VERSIONS" SUB-DIRECTORY

The "Versions" databases contain the information used by M5000 CC to carry out telephony operations, connect M5000 CC to the telephone exchange, manage the various M5000 CC applications, etc.:

- **“ActivationKeys.cfg”** contains the key corresponding to the protection unit.
- **"AGORA1.cfg"** contains all the data used by the various M5000 CC applications: Services, Skills, Teams, Languages, Agents, Service Manager, Phones, Extensions, etc.
- **"Versions.cfg"** contains two tables:
  - CONFIGURATION where the version of the M5000 CC used is saved (e.g.: 7.0.7),
  - VERSIONS containing the information used by the system as a whole (e.g.: the size of the “StatBuffer.cst” buffers).

  The “Versions.cfg” file must be selected by the client applications in order to connect to the M5000 CC Server.
- The **“OutboundDialList.cfg”** database is only used for reading a property.

8.5 SCRIPTS

This paragraph presents the advanced features of Mitel 5000 Contact Center and concerns the "Developers" profiles using the M5000 CC Service Manager application.

8.5.1 OVERVIEW OF SCRIPTS

A script is a Service-version-specific item (see definition in Section 1.4). It defines the way a call is handled in a Service (see Section 8.2.4.3).

There is one (and only one) script for each version. The script contains trees, global variables, local variables, arguments and sounds belonging to the version of the Service.

This paragraph presents the scripts as follows:

- Preliminary design steps (see Section 8.5.2)
- Script management (see Section 8.5.3)
- Overview of the Trees (see Section 8.5.4)
- Overview of the Nodes (see Section 8.5.5)
- Overview of the Variables (see Section 8.5.6)
- Sound management (see Section 8.5.7)
- Overview of Pre-set scripts (see Section 8.5.10)
- Example of scripts (see full sample scripts appended to Section 13.5).

8.5.2 PRELIMINARY SCRIPT DESIGN STEPS

Before setting to script design, it is advised to elaborate a primary outline with the different steps of the call handling.

Example of a script design model for a call arriving in the Mitel 5000 Contact Center (IVR part):

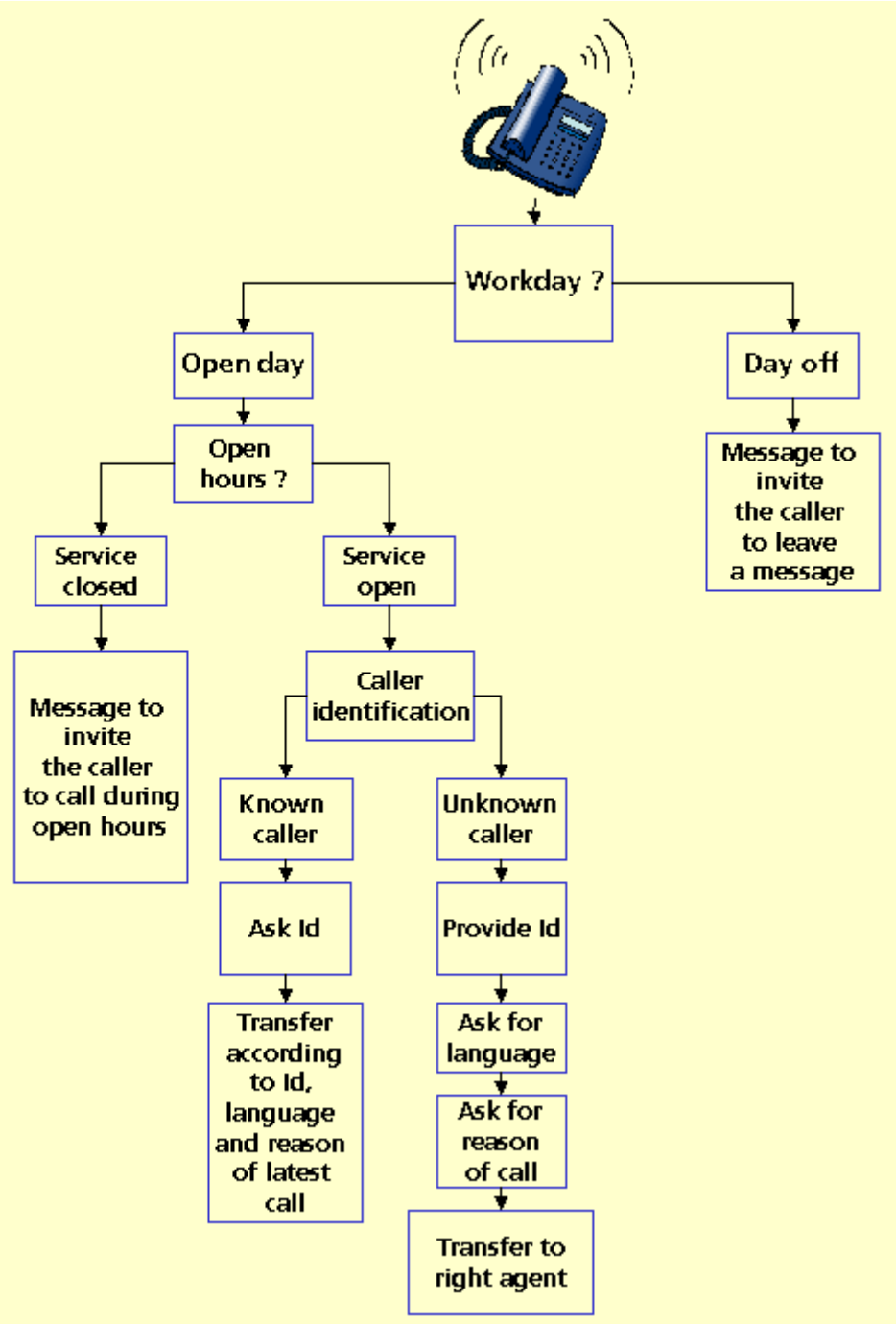


Figure 8.20 SAMPLE SCRIPT DESIGN MODEL FOR INBOUND CALLS

- Check whether or not the call arrives on a workday (on an internal calendar or database for instance)
- Check whether the Service is open or closed by checking the call arrival time
- Identify the caller thanks to his CLID (caller telephone number) which is registered in a database if he is already a client of the company. If he or she is a new client, provide an automatic ID through a database.
- Welcome the caller by playing voice messages (if the Service is closed: welcome him and ask him to call back later; if the Service is open: welcome him and ask him to wait for an agent to be available, to select a language or particular Service...),
- Identify the reason for the call (via DTMF codes or via a specific request in a database)
- According to the reply, transfer the call to an appropriate agent,
- Once the client is transferred to an agent, the latest can retrieve the client's data collected during the IVR

part. He can also ask the client other questions in order to handle his request (record or modify an order,...);

- During the conversation between the caller and the agent, database interaction is still possible;
- The end of the conversation corresponds with the end of the physical call (onhook), but the agent can perform some post call processing relating to this call (time spent in PCP is part of the logical call).

8.5.3 SCRIPT MANAGEMENT

Scripts are managed using the M5000 CC Service Manager application.

To manage the script for a given Service version, the Service manager must follow the successive steps described in the Sheet (see Sheet U-405).

8.5.4 OVERVIEW OF THE TREES

A tree is an item on a script describing the processes through which a call must pass. It is composed of a hierarchical set of nodes (see Section 8.5.5). The nodes are executed in a specific order.

- There are 3 categories of trees (see Section 8.5.4.1).
- The execution of a tree (see Section 8.5.4.2) follows a set of precise rules.
- The basic components of trees are nodes. Relations between nodes (see Section 8.5.5.4) are well-defined on a tree. The names of the main parts of a tree are deduced from the following relations:
  - root nodes (first node of a tree) and leaves (node without children),
  - branches (one node, its children and the children of its children...) and section of a tree (branch located immediately below the root).
- Local variables (see Section 8.5.6.3.2) can be defined for each tree.
- A calling tree can send arguments (see Section 8.5.6.3.1) to a called tree.
- Trees can communicate with each other using global variables (see Section 8.5.6.4).

8.5.4.1 CATEGORIES OF TREE

There are 3 categories of trees: Voice, e-mail and Web, containing six different trees (***{Media and application}*** fields in the **"Properties of the tree"** window):

- Voice category
  - Voice User,
  - Interactive Voice Response
  - Voice server without IVR
- E-mail category
  - E-mail server
  - E-mail user
- Web category
  - Web Server

8.5.4.1.1 VOICE MEDIA

Interactive voice response trees (incoming Services)

The M5000 CC Media Server executes IVR trees when a call arrives in an incoming Service. IVR trees can contain nodes from the following additional modules:

- System nodes module
- Database Management nodes module
- Interactive Voice Response nodes module (including telephone features like playing or recording a message, listening to the DTMF code, transferring a call, etc.).
- Multimedia nodes module

Voice Server without IVR trees (incoming Services)

The M5000 CC Media Server executes a Voice Server without IVR tree when a call arrives in an inbound Service when the M5000 CC is used without any IVR resources. Contrary to the M5000 CC with IVR, there is no need to have any IVR scripting license to execute a Voice Server without IVR tree. Voice Server without IVR

trees can contain nodes from the following add-on modules:

- System nodes module
- Database Management nodes module
- Interactive Voice Response nodes module (PlayVoiceMessage, TransferCall, SendUDP and GetUDP).
- Multimedia nodes module

Nota :
- *In a same Service version, a voice server with IVR tree and a voice server without IVR tree can be defined as start trees. According to the DNIS called, the M5000 CC Media Server runs one of the two start trees, without any interaction possible between them:*
- *If the call is transferred to an IVR resource, the M5000 CC Media Server runs the voice server with IVR as start tree.*
- *If the call is transferred to a call pit, the M5000 CC Media Server runs the voice server without IVR as start tree.*

User Interface trees (inbound and outbound Services)

The 'User Interface' trees are run by the M5000 CC User applications. These trees define the information and questions which appear on the agent's screen during a call.

'User Interface' trees can contain nodes from the following Add-on modules:

- System nodes module
- Database Management nodes module
- User Interface nodes module (including features like asking multiple-choice questions, entering an address, etc.).
- Outbound nodes for outbound Services.
- Multimedia nodes module

Note: When the IVR tree of an inbound Service script contains a TransferCall node, it is mandatory to define a UI start tree, otherwise the script won't compile.

8.5.4.1.2 E-MAIL MEDIA

E-mail Server tree

The M5000 CC Media Server runs the "e-mail Server" trees when an e-mail arrives in an incoming Service (see definition in Section 1.4). The "e-mail server" trees contain nodes from the following additional modules:

- System nodes module
- Database Management nodes module
- "E-mail" nodes module ("DistributeEmail", "ReplyToEmail", "SendEmail", "DeleteEmail", "MoveEmail").
- Multimedia nodes module

E-mail User Tree

The M5000 CC User applications execute e-mail User trees. These trees define the information that appears on the agent's screen while an e-mail is being processed. The e-mail user' trees can contain nodes from the following add-on modules:

- System nodes module
- Database Management nodes module,
- "E-mail" node module ("ReplyToEmail", "SendEmail", "DeleteEmail", "CopyEmail", "MoveEmail").
- Multimedia nodes module

8.5.4.1.3 WEB MEDIA

There are two types of Web trees: Main trees and Sub trees. This property has to be fixed upon tree creation and can not be changed. A script can include several sub-trees for one main tree which must be unique. The Start tree existing property is independent of this new property. It can be allocated to a main Web tree or a Web subtree, regardless of their use.

The M5000 CC Media Server runs the web start trees when a Web session arrives in an incoming Service (see definition in Section 1.4).

Main web trees (inbound Services)

Main web trees can contain nodes from the following add-on modules:

- System nodes module
- Database Management nodes module
- "Web" node ("EnterData", "SendData" and "BrowseToURL").
- Multimedia nodes module

Main web trees are the only trees that can have one (and only one) GetData node.

Sub web trees (inbound Services)

Web subtrees can contain nodes from the following add-on modules:

- System nodes module
- Database Management nodes module
- "Web" node ("SendData" and "BrowseToURL").
- Multimedia nodes module

8.5.4.2 RUNNING A TREE

8.5.4.2.1 VOICE

General execution rules

Tree execution always starts at the "Root" node (see detailed description of the nodes in appendix to § 13.2).

Each time a node is executed, the system evaluates the access conditions of its children (beginning with the first child, then the second and so on). The first child node with an access condition evaluated to True is the next one to be executed.

When a node is a leaf or has no children whose access condition is evaluated to True, the execution passes to the next section of the tree. The first node of the next section with a valid access condition is the next one to be executed. Since the last section of a tree contains only one node with a True access condition (Return node), the execution can always be continued.

System nodes affecting execution

- The GoTo node redirects execution flow to any node of the current tree. The destination node is executed whatever the value of its access condition.
- The End node (not to be confused with the Label node named "End" in an IVR tree) immediately terminates execution of the current script (even if it's not the starting tree).
- The ExecuteTRee node redirects execution flow to the root node of another tree of the same type (IVR or UI tree).
- The Return node terminates execution of the current tree. If the tree is not the starting tree (i.e. it was called by another tree using a GoSub node), the execution returns to the node following the corresponding GoSub node in the calling tree.

Voice Server with IVR trees

When a new call is handled by the M5000 CC Media Server, an instance of the IVR starting tree is associated to the call.

In a Call Server tree, two sections are predefined, composed of one 'Label' node each: the "Begin" section and the "End" section.

- These two sections have a True access condition.
- They cannot be edited (neither their name nor their access condition can be changed).
- The Begin node is always the first node in the first section: you cannot add a node between the Root and Begin nodes.

- At the end of a physical call (either after successful completion of the transfer node or because the caller hung up somewhere else on the tree), execution automatically changes to the End node.

Voice Server without IVR trees

When M5000 CC is used without IVR resources, new calls are also handled by the Media server and a start tree instance of the type Voice Server without IVR is associated with the call.

A "Begin" section and an "End" section are preset on a server tree without IVR. They are identical to those of an IVR tree.

- These two sections have a True access condition.
- They cannot be edited (neither their name nor their access condition can be changed).
- The Begin node is always the first node in the first section: you cannot add a node between the Root and Begin nodes.
- At the end of a physical call (either after successful completion of the transfer node or because the caller hung up somewhere else on the tree), execution automatically changes to the End node.

User-interface trees

When the "CallTransfer" node of the Media Server tree is executed, the User Interface starting tree is launched in the User application of the agent to whom the call is transferred.

At each agent's tree execution, there is an implicit transaction (Begin transaction at the very beginning of the tree execution).

This allows doing following actions:

- When cancelling a tree execution, the transaction will be rolled-back. The cancel action can be done by the system or by the agent:
  - By the system: when the presentation timeout is exceeded, the tree execution is canceled and all actions already made on databases are cancelled (transaction rollback), so that the call can be presented to another agent.
  - By the attendant: when the agent pushes on the ***[Cancel]*** button to cancel an agent's script execution, all actions already made on databases are cancelled (transaction rollback).
- When stopping a tree execution, the transaction will be committed. All actions made by the tree execution are saved. The stop action can be done by the system or by the agent:
  - By the system: when the tree execution is finished, the transaction is saved (all changes made on databases are saved).
  - By the attendant: when the agent pushes on the ***[Stop]*** button, the transaction is saved until the node where the execution was stopped.
- When the tree execution is resumed to a previous node, the transaction is rolled-back and all changes in databases are cancelled. The information about the answers are kept.

Constraints: When executing User Interface trees containing DataManager nodes working on Microsoft Access databases, each transaction locks the databases' tables. So multiple simultaneous access to the database is not available unless the transaction is finished (committed or rolled-back).

Note: When the Voice Server with IVR tree or the Voice Server without IVR tree of an inbound Service script contains a TransferCall node, it is mandatory to define a UI start tree, otherwise the script won't compile.

8.5.4.2.2 E-MAIL

System nodes affecting execution

- The GoTo node redirects execution flow to any node of the current tree. The destination node is executed whatever the value of its access condition.
- The End node (not to be confused with the Label node named "End" in an IVR tree) immediately terminates execution of the current script (even if it's not the starting tree).
- The ExecuteTRee node redirects execution flow to the root node of another tree of the same type (IVR or UI tree).
- The Return node terminates execution of the current tree. If the tree is not the starting tree (i.e. it was called by another tree using a GoSub node), the execution returns to the node following the corresponding GoSub node in the calling tree.

E-mail Server tree

In an "e-mail Server tree", there is only one predefined section composing a "Root" node and a "Return" node.

- This section has a True access condition.
- These two nodes can't be edited (i.e. neither their name nor their access condition can be changed).
- The DistributeEmail node redirects the execution sequence to the root node of an e-mail user tree.

E-mail user tree

In an "e-mail User tree", there is only one predefined section composing a "Root" node and a "Return" node.

- This section has a True access condition.
- These two nodes can't be edited (i.e. neither their name nor their access condition can be changed).

8.5.4.2.3 WEB

System nodes affecting execution

- The GoTo node redirects execution flow to any node of the current tree. The destination node is executed whatever the value of its access condition.
- The End node (not to be confused with the Label node named "End" in a Web tree) immediately terminates execution of the current script (even if it's not the starting tree).
- The GoSub node redirects execution flow to the root node of another tree. Only sub web trees are accepted as destination.
- Return node execution has been slightly modified to support the functionality of returning to the GetData node each time an M5000 CC WebCall Service request is handled. The following behaviours may occur:
  - The M5000 CC WebCall Service client is still connected:
    - u The stack only has one tree:
      - If it is the main tree: the script goes to the "Root" node.
      - If it is a sub tree (it happens if the Start tree is a sub tree), the Return node execution is modified to empty the stack and load the main tree. The script goes to the Root node.
    - u There are two or more trees in the stacks:
      - The node execution is not changed and we go back to the calling tree.
  - M5000 CC WebCall Service is disconnected from the contact centre (this may be due to an explicit request or may occur at the end of a web session timeout).
    - u The stack only has one tree:
      - The script execution jumps to the End branch. Once this branch is executed, the Return node will terminate the script
    - u There are two or more trees in the stacks:
      - The script executes the End branches (only) of all the stacked trees until the Return node of the last tree terminates the script.

When a new web session is handled by the M5000 CC Media Server, an instance of the web starting tree is associated to the session.

Main web trees

A main Web tree includes four preset sections: a "GetData" node, an "End" node, and two "Return" nodes.

- These two sections each have a True access condition.
- They cannot be edited (i.e. neither their name nor their access condition can be changed), except for the GetData node.
- The 'GetData' node is always the first node in the first section: you cannot add a node between Root and GetData.

Sub web trees

A main Web tree includes four preset sections: two nodes "Label" ("Beginning" and "End") and two "Return" nodes.

- These two sections each have a True access condition.
- They cannot be edited (neither their name nor their access condition can be changed).
- The Begin node is always the first node of the first section: you cannot add a node between the Root and Begin nodes.

8.5.5 OVERVIEW OF THE NODES

8.5.5.1 PRESENTATION OF THE NODES AND NODE MODULES

Nodes are small programs that make up the trees (See § 8.5.4). Each node corresponds to a particular action taken during call processing.

Nodes are organized in a precise way to build trees:

- the relationships between tree nodes are well established (see § 8.5.5.4)
- specific rules are followed during each tree execution (see § 8.5.4.2).

Different sets of nodes are predefined in the system: they are called Add-on modules (see § 8.5.5.3). Each of them contains nodes with similar features.

To manage the nodes (add, delete, move, modify node parameters, insert), refer to Sheet U-441.

8.5.5.2 DEFINITION OF ADD-ON MODULES

An add-on module is a set of logically related nodes. Some add-on modules are pre-defined, but user-built modules can be added to the system.

The System nodes add-on module is used in every script. It contains basic nodes, which provide general functionalities.

Other add-on modules provide more specialized functionalities. For example, the User Interface nodes add-on module is used to build the agent interface for the call handling.

8.5.5.3 PRESENTATION OF PRE-SET MODULES

The preset modules indicated through the following icons, and add-on nodes are detailed in appendix in Section 13.2 :

-  Database Management nodes Module (see Section 13.2.1)
-  Interactive Voice Response nodes Module (Voice Server with IVR tree and without IVR tree) (see Section 13.2.2)
-  The "MakeOutboundCall" node module (see Section 13.2.3)
-  "System" node module (see Section 13.2.4)
-  "User Interface (UI)" nodes module (see Section 13.2.5)
-  "Web" nodes module (see Section 13.2.6)
-  "Email Server" nodes module (see Section 13.2.7)

The preset add-on modules are available according to the type of tree selected:

Tableau 8.6 LIST OF ADD-ON MODULES AND NODES ACCORDING TO THE TYPE OF TREE

TYPE OF TREE	ADD-ON MODULES AVAILABLE	NODES AVAILABLE (IN THE AVAILABLE ADD-ON MODULES)
Interactive voice response		All
Voice Server without IVR		All except the nodes "Hookoff", "EnterDTMF, "RecordVoiceMessage" & "DeleteVoiceMessage"
Voice User		All
E-mail Server		All

Tableau 8.6 LIST OF ADD-ON MODULES AND NODES ACCORDING TO THE TYPE OF TREE

E-mail User		All except DistributeEmail node
Web Server (main)		All
Web Server (sub)		All except GetData node

8.5.5.4 RELATIONS BETWEEN NODES

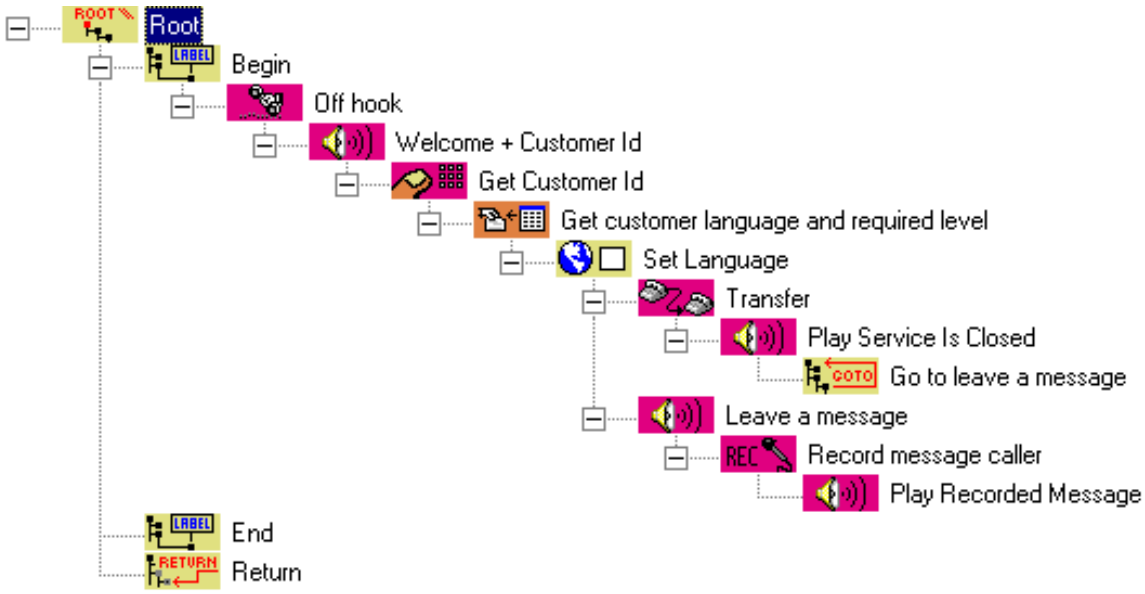


Figure 8.21 SAMPLE TREE

Relations between "parent" - "child" nodes

A "Parent" node relation is defined between nodes. Example in the previous figure:

- "Off hook" is the parent of "Welcome + Customer Id"
- "Set Language" is the parent of "Transfer" and "Leave a message".

In the same way, a Child relationship is defined between tree nodes. This relationship is opposite to the parent relationship. Example in the previous figure:

- "Transfer" is a child of "Set Language".

Children's ordering

Node's children are ordered:

- "Transfer" is the first child of "Set Language"
- "Leave a message" is the second child.

Special nodes: **Root and leaves**

The first node of a tree is called the 'Root' node: it is the only node that can not have a parent.

A node that can not have children is called a Leaf.

- "Go to leave a message", "Play recorded message", "End" and "Return" are examples of leaves.

Branches and sections

A tree Branch consists of a node, its children, the children of its children, etc.

- In the example, "Set Language", "Transfer", "Play Service Is Closed", "Go to leave a message", "Leave a message", "Record message caller", and "Play recorded message" form a branch. "Set Language" is the root of this branch.

A Section is a branch situated just below the root.

- The example in the previous figure includes three sections: "Begin", "End" and "Return". Like children nodes, sections are arrange according to an order. "Begin" is the first section, and "Return" the last one.

Generally, the name of the first node is used to refer to a branch or section of a tree.

- The example in the previous figure shows a branch "Set language" or a section "Begin".

The last section is always "Return". It contains only one node (the "Return" node) and it is impossible to modify this section.

8.5.6 OVERVIEW OF THE VARIABLES

8.5.6.1 INTRODUCTION

A variable is a memory zone that can contain a value.

In the M5000 CC, variables are script elements used to store information. They are used, for instance, to store answers given by customers or to define access conditions for nodes execution.

Step-by-step use of variables:

- Choose a variable's application field (see Section 8.5.6.2)
- Select the variable type (see Section 8.5.6.5)
- Initialize a variable value (see Sheet U-442)
- Include in User display (only for global variables) (see Sheet U-442)
- Include in the statistics (only for global variables) (see Sheet U-442)

The values of the return code variables are detailed in the description of each node in appendix at § 13.2.

8.5.6.2 VARIABLE SCOPE

The scope of a variable defines the context in which it is visible and can be used. This scope can be:

- the entire script: the variable is global,
- a specific tree: the variable is local for a tree.

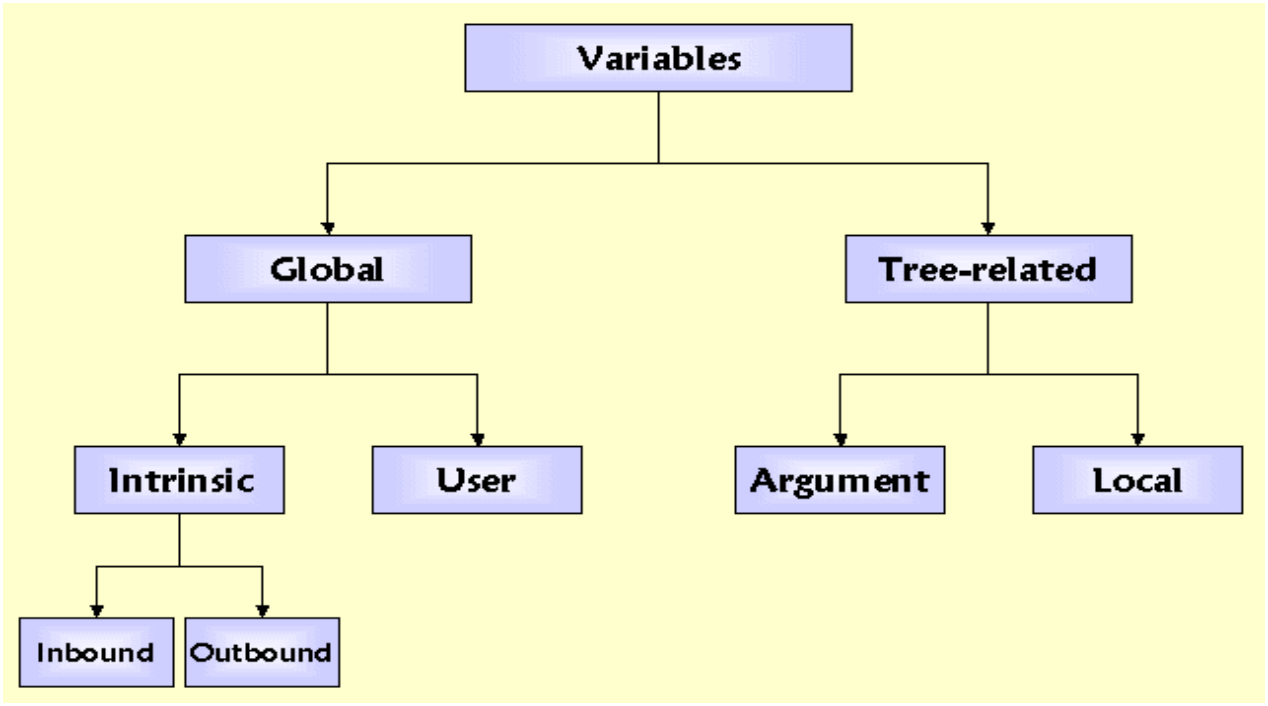


Figure 8.22 VARIABLE SCOPE

8.5.6.3 TREE RELATED VARIABLES

The variables linked to trees are:

- Either arguments (see Section 8.5.6.3.1)
- Or local variables (see Section 8.5.6.3.2).

8.5.6.3.1 TREE ARGUMENTS

Definition

An argument is a value or a variable passed to a tree upon execution. The value assigned to an argument is defined in the GoSub node of the calling tree.

Argument

Trees can have Arguments. Like procedure calls in programming languages, a tree can be executed, passing parameters to it. The scope of a tree's arguments is the tree. The value of these arguments is defined in the "RunTree" node (see section 13.2.4.4). Arguments are passed by reference, i.e. the address of the argument is passed instead of its value. This enables the called tree to access the actual variable. As a result, the variable's actual value can be changed by the tree to which it has passed.

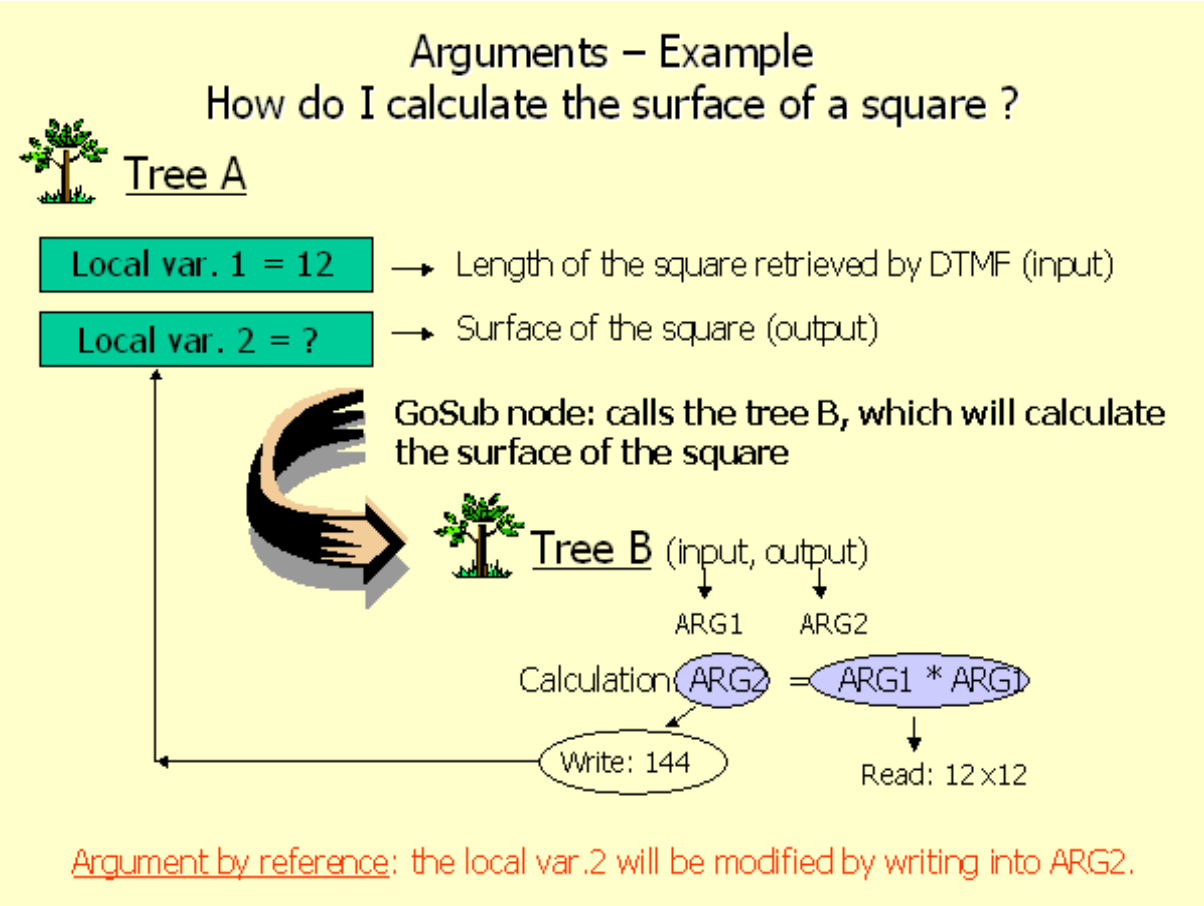


Figure 8.23 SAMPLE VARIABLE ARGUMENT

A tree defines the stages a call must pass through. It is a program that is run for each call.

It is composed of a hierarchical collection of nodes. Each node is of a particular type: it defines the function it performs during execution.

A tree defines the stages a call must pass through. It is a program that is run for each call.

It is composed of a hierarchical collection of nodes. Each node is of a particular type: it defines the function it performs during execution.

Parameter passing

The variable arguments are transmitted by reference from a calling tree to a called tree (Transmission of their address in memory). This allows the called tree to change the value of the caller tree's variable. This change persists after termination of the called tree's execution.

Scope of application

The scope of an argument is limited to the tree it is defined in. The arguments defined for a tree can also be used in nodes as variables.

Define tree arguments

Trees can be called by other trees using a Gosub node. Called trees can exchange data with calling trees reading and writing values in their arguments.

Arguments are passed by reference, so any change to their value by the called tree is visible to the calling tree.

Once a tree is created, arguments can be defined for it (see Sheet U-441).

8.5.6.3.2 LOCAL VARIABLES

Definition

A local variable is a variable that belongs to a specific tree. Local variables are initialized each time the corresponding tree is executed.

Scope of application

The scope of a local variable is limited to the tree in which it is defined. Local variables cannot be shared between trees.

Define local variables

Local variables are only visible in the tree where they are defined. They can be used to exchange values from one node to another in the same tree.

Once a tree is created, local variables can be added to it: To add a local variable to a tree (see Sheet U-441).

8.5.6.4 GLOBAL VARIABLES

Scope of application

The scope of a global variable is the whole script. Global variables can thus be shared between trees.

Moreover, global variables are shared between applications that run the script for the same call. This means that the information stored by the M5000 CC Media Server in a global variable can be accessed (read and written (if the type of the variable allows it, because some intrinsic variables are read-only)) by the M5000 CC User application to which the call was transferred. This allows the agent to be aware of the information collected by the M5000 CC Media Server. Similarly, the M5000 CC Media Server is able to read the information entered by the agent after the agent has finished handling the call.

Categories of variables:

- Intrinsic variables

  Some global variables are predefined: they are called intrinsic variables. These variables are available in every script. Some of them can only be read at runtime (read-only variables), and some can also be changed (read-write variables).

  There are intrinsic variables for inbound Services (see 8.5.6.4.1) and intrinsic variables for outbound Services. (see 8.5.6.4.2).

- Define user variables

  Other global variables can be defined: they are called user variables. They allow passing specific information from the IVR part of the script to the User Interface part of the script.

  Example: It is possible to retrieve the caller's name (stored in a database and identified by means of the CLID, a client ID, a client password etc.) and to store it in a global user variable called for instance CallerName in order to display it on the agent's screen by means of an Information node (see § 13.2.5.6). This way, the agent instantly knows who the caller is.

8.5.6.4.1 INTRINSIC VARIABLES FOR INBOUND SERVICES

The mask concept linked to the global variables indicates the script in which the variables may be used. There are three types of mask:

- Voice: this variable can be used in a Voice Server with IVR script, in a Voice Server without IVR script or in a Voice User script.
- E-mail: this variable can be used in an e-mail Server script or a User Interface script.
- Web: this variable can be used in a Web script.

For the detailed description of the "Inbound service intrinsic variables" refer to the appendix in § 13.3.1.

8.5.6.4.2 INTRINSIC VARIABLES FOR OUTGOING SERVICES

Some variables are modifiable and can be used to program potential attempts.

If the script modifies a variable, its new value is stored in the dial list at the end of the call. This new value is taken into account for selecting the agent for the next call attempt.

It is therefore crucial in the script to write the correct values in these variables. However, for some of them, a default behavior is available in the case they are not written.

For the detailed description of the "Outbound service intrinsic variables" refer to the appendix in § 13.3.2.

8.5.6.4.3 USER GLOBAL VARIABLES

They allow passing specific information from the Server part of the script to the User part of the script.

Example: It is possible to retrieve the caller's name (stored in a database and identified by means of the CLID, a client ID, a client password etc.) and to store it in a global user variable called for instance CallerName in order to display it on the agent's screen by means of an Information node. This way, the agent instantly knows who the caller is.

8.5.6.5 VARIABLE TYPES.

8.5.6.5.1 PRESENTATION OF THE VARIABLE TYPES

A variable has a Type, which specifies what kind of value can be stored in the memory zone. Possible types are listed in the following table:

Tableau 8.7 PRESENTATION OF THE VARIABLE TYPES

VARIABLE TYPE	DESCRIPTION	EXAMPLE
string	Contains any text. The maximum length of this text is 255 characters.	Good morning!
Digital	Contains any number, integer or real number ranging from -1.797693134862315E308 to -4.94066E-324 for negative values and from 4.94066E-324 to 1.797693134862315E308 for positive values.	-3.14E30
Date	Contains a date, a time or both. The format has to be conform to the regional settings of your computer.	3/9/1998 8:10
Set	Contains several values. A set can contain values of different types.	{"Hardware" ; 1/31/1998 ; -1}
Derived variable	Contains the value of an intrinsic variable that is associated to a filter (see Sheet U-404). This type is only available for global variables.	
Custom Counter (see Section 8.5.6.5.2)	Custom counter containing a numeric value used to evaluate a given criteria (Equivalent to a Boolean variable). The criterion is considered as met for any value different from zero.	0:False1,10,-5:True

8.5.6.5.2 PRESENTATION OF CUSTOMIZED COUNTERS

Customized counters are used to supervise the number of calls through the script. These correspond to a new type of global variables ("Custom Counter") with a value which must be numerical.

Upon each addition of a user variable of this type (e.g. a variable named "Alarm"), four intrinsic variables (see appendix in §) of the numerical type are created automatically. The creation and deletion of these specific intrinsic variables are hence completely dynamic. Their name is constituted by the concatenation of:

- "ServiceCurrent", the name of the user variable and "Calls" (e.g. "ServiceCurrentAlarmeCalls")
- "ServiceCurrent", the name of the user variable and "Calls" (e.g. "ServiceFlowAlarmeCalls")
- "ServiceCurrent", the name of the user variable and "Calls" (e.g. "ServiceDayAccumulatedAlarmeCalls")
- "ServiceHourAccumulated", the name of the user variable and "Calls" (e.g. "ServiceHourAccumulatedAlarmeCalls").

Several real-time statuses (see Sheet U-483) specific to the Service are also available based on these intrinsic variables:

- The "Number of calls meeting the criterion (name of the user variable)",
- The "Number of changes meeting the criterion (name of the user variable)",
- The "Number of calls meeting the criterion (name of the user variable) over the day",
- The "Number of calls meeting the criterion (name of the user variable) over the hour",

These real-time statuses are available thanks to the management of the display properties defined within a Service.

Note: Customized counters can be used both in inbound and outbound services.

To initialize a variable value, include a variable to the user display or a variable to the statistics, refer to Sheet U-442.

8.5.6.6 RETURN CODE VARIABLE VALUES

For the detailed description of the "Return code variables values" refer to the appendix in § 13.3.3.

8.5.7 SOUND MANAGEMENT

A Service manager is authorized to manage sounds using the menu **[Display > Sounds]** in the M5000 CC Service Manager application (see Sheet U-440).

8.5.7.1 SYSTEM AND USER PROMPTS

Two sets of voice prompts and films can be managed:

- System prompts, which are predefined and can be used to play numbers, dates, etc.
- User prompts, specific to the Service. The Service manager defines these sounds himself.
- PBX prompts, specific to the Service. The Service manager defines these sounds himself. A PBX sound is not linked to a wav file. A PBX prompt is a voice message played by a card fitted into the PBX for this. All extensions playing a same PBX prompt are consolidated into a message call pit group. Therefore, each prompt must be associated with a message call pit group.

8.5.7.2 CREATING AND RECORDING SOUNDS

Upon creation, prompts receive a name. Then, they have to contain sound recording. A Service manager can (see Sheet U-440):

- Add a user prompt,
- Add a PBX prompt,
- Open a sound for recording,
- Import a wave file from another prompt.

As each user or system prompt can be played in all the languages defined in the Service version (see Sheet U-440), each sound has to be recorded in each language. In the list, a sound is represented by its duration (number of seconds) in each column corresponding to the language in which it is recorded.

Each PBX prompt is always defined in all the possible languages. It is represented by a group of message call pits and a duration.

8.5.7.3 PLAYING EXTERNAL FILES OR SEGMENTS

The message played to the caller can be composed of a single sound file or several elements.

- Play external file,
- Play elements.

To play external files or items, edit the "PlayVoicePrompt" node (see Section 13.2.2.4).

8.5.7.4 MODIFYING SOUNDS

Sound files linked to user prompts can be modified using multimedia tools. When sounds change, the Service manager can refresh the prompt duration (see Sheet U-440).

Any modification (opening or import) to system prompts is allowed only if you are an administrator. (A message box will inform you before modifying a predefined system prompt).

The Service manager can modify the properties of the PBX sounds (see Sheet U-440). If the properties of a PBX sound that is used in a node (TransferCall, PlayVoiceMessage or GetUDP) are changed then, during the script compilation, the new properties values will be indicated in the node.

8.5.7.5 REQUIRED SOUNDS

Sounds can be marked as required or not required in one or more languages. If a sound is not required, the script compilation will not check if it was recorded or not. On the contrary, if the sound is required, the script compilation will fail if it is not recorded. Sounds that are not required are listed between brackets.

A Service manager can (see Sheet U-440):

- Mark a single sound as required (or not required) in one language, or
- Mark all sounds as required (or not required) in one language.
- Check if all required sounds are present before compiling the script.
- Delete voice prompts from the current Service version.

8.5.7.6 SOUNDS RELATED NODES

The following nodes in the Server node module with IVR are sound related (see § 13.2.2):

- The "PlayVoiceMessage" node (see Section 13.2.2.4)
- The "EnterUDP" node (see Section 13.2.2.5)
- The "TransferCall" node (see Section 13.2.2.7).

8.5.8 "STRAPPING" FUNCTION

8.5.8.1 DESCRIPTION OF "STRAPPING"

The "Strapping" function makes it possible to use IVR resources and call pits simultaneously when an inbound call is processed by a Service.

The idea is to use the solution without IVR for overall call processing, but also to be able to use the IVR resources when some actions such as "GetDTMF" must be run. Thus, the number of IVR ports used at a given moment will be reduced, but it will always be possible to use all the functions available on a script.

Two nodes are available for switching from a tree without IVR to an interactive tree, and vice versa:

- The "ChangerTypeRessource" node (see Section 13.2.2.10) is used to change from one voice tree type to another, that is from a call pit to an IVR resource, or from an IVR resource to a call pit.
- The "BackToResource" node (see Section 13.2.2.11) is used to return to the initial resource and, thus, to the tree that previously effected the change of resource. The execution of this "source" tree will then continue from the node which follows the "ChangerTypeRessource" node.

Several possibilities can be envisaged when a call arrives in the system:

- If the call arrives on an IVR resource, it can be transferred to a call pit thanks to the "ChangeResourceType" node, and a "BackToResource" node will possibly be used to return to an IVR resource.
- If the call is initially processed without IVR (arrival on a call pit), it can be transferred to an IVR resource thanks to the "ChangeResourceType"node, and if necessary, a "BackToResource" node will be used to return to a call pit.

In reality, both nodes effect a change of resource (from IVR to a call pit or vice versa). But they contain some differences:

- The "ChangeResourceType" node sends the call to a new voice tree which will be executed right from the beginning. On the other hand, the "BackToResource" is used to return to the place where the initially executed tree had been left.
- The "BackToResource" node must be placed on a tree called up by a "ChangeResourceType" node. In fact, a "ChangeResourceType" node can be used in a script which does not also contain a "BackToResource" node: you might wish to change a resource type without return. But reverse is not possible.

See Strapping function (Section 8.5.8.2) for more details.

Sample script

The following figure presents an example of the use of Strapping.

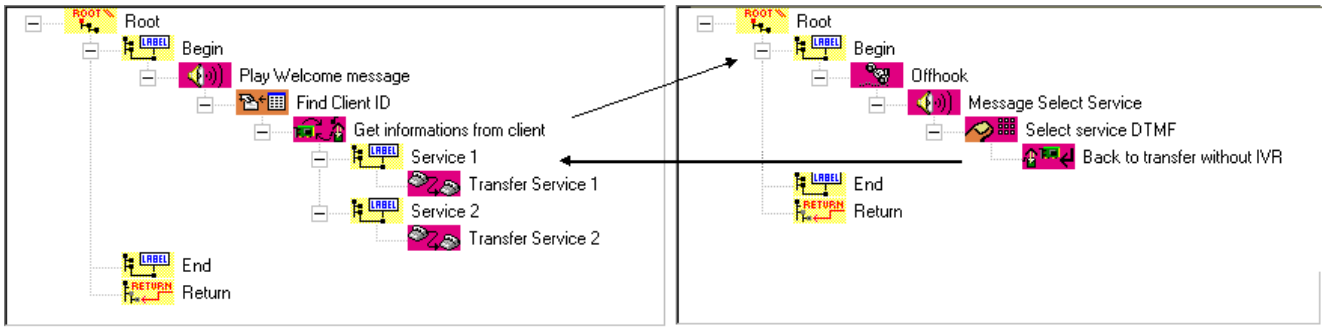


Figure 8.24 EXAMPLE OF THE USE OF STRAPPING

The tree without IVR (on the left part of the image) is the start tree. The call is on a call pit. After playing back a greeting message and following a search for the client's identifier in a database, the caller must specify via DTMF the Department to which he wishes to be connected. For this, a change of resource will be effected in order to execute the interactive tree used for data entry. The call is transferred to an idle IVR resource.

Once the data has been entered, the "BackToResource"node is executed: the call is again on a message call pit (the IVR resource is now released), and the tree without IVR continues its execution from the "Sales Department" label node, since it is the node that follows the previously executed "ChangeResourceType" node.

Recommendations for use

Avoid the numerous consecutive change of resources for the same call. The aim is to limit the time of use of IVR resources without effecting a large number of resources changes which can be expensive. In fact, as indicated in the description of the two nodes, reserving a resource may take some time, during which the caller will be put on hold: therefore, the caller does notice the change of resource sometimes.

Example:

The calls are initially managed in a non-interactive voice tree. When two series of interactive actions must be taken one after the other, a script without IVR like the one below should be avoided.

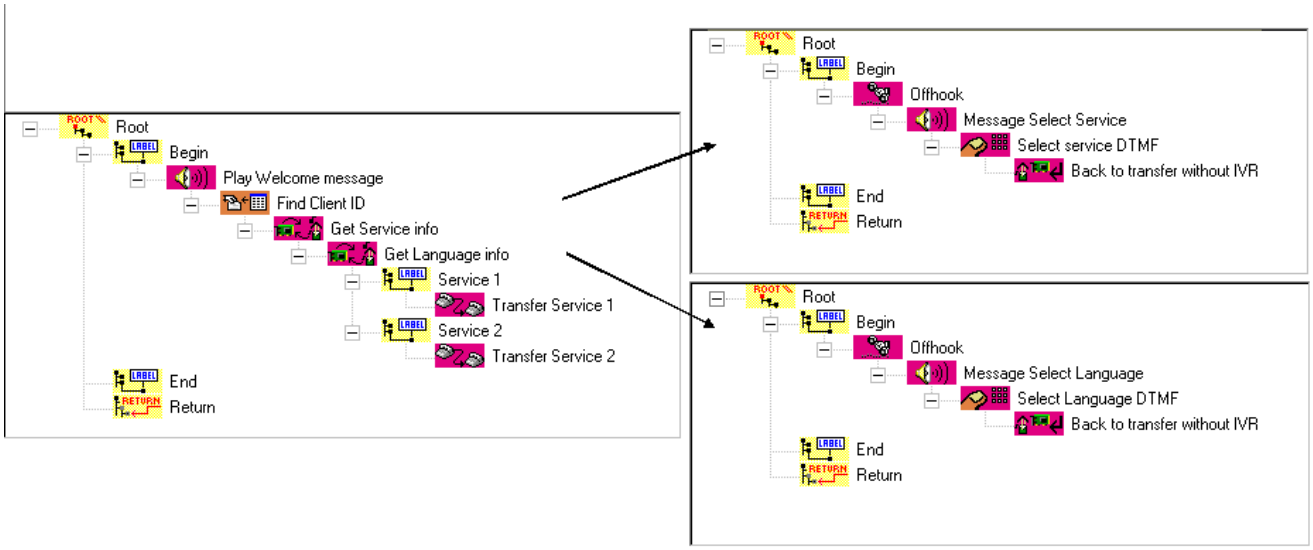


Figure 8.25 EXAMPLE OF "STRAPPING" SCRIPT WITHOUT IVR TO BE AVOIDED

The following script without IVR is the best and is recommended:

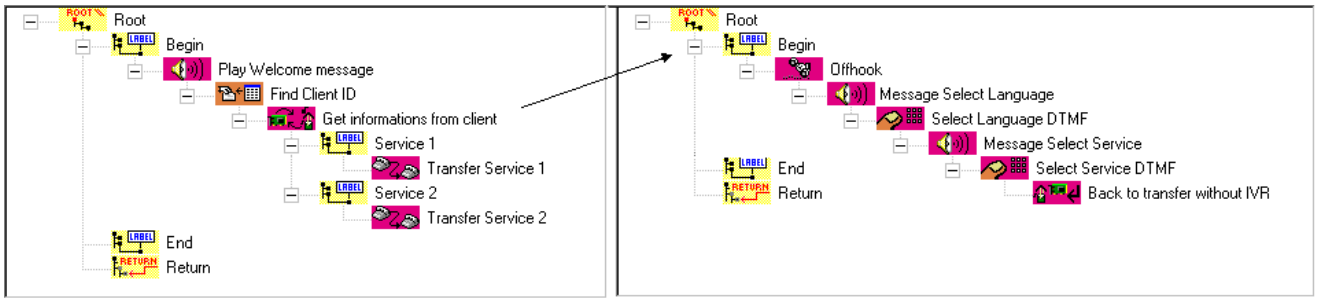


Figure 8.26 EXAMPLE OF USE OF A RECOMMENDED "STRAPPING" SCRIPT WITHOUT IVR

Utilisation constraints

When a multi M5000 CC Media Server configuration is used, IVR resources may be monitored by each M5000 CC Media Server or only by some of them (there is no obligation).

On the other hand, there is a constraint when an IVR resource is change to a call pit: at least one inbound call pit must be **defined and monitored by each M5000 CC Media Server** used.

8.5.8.2 "STRAPPING" FUNCTION

8.5.8.2.1 TYPES OF IVR RESOURCES

To avoid situations where all the IVR resources are only used for strapping, the notion of type of resources has been defined. An IVR resource can:

- either be fully devoted to inbound calls initially arriving on an IVR resource. These resources are called **"inbound call"** type resources.
- or fully devoted to strapping: they will only process calls that must be transferred from a call pit to an IVR resource. These resources are called **"strapping"** type resources.
- or they can be used at any moment, both for an inbound call and for a call diverted from a call pit to a Dialogic resource. These resources are called **"mixed"** type resources.

The type of each resource must be indicated in the Media server "Resources" window in the M5000 CC Administrator application.

8.5.8.2.2 GENERAL FUNCTION

From an SVI resource to a call pit

In a "ChangeResourceType" node (see Section 13.2.2.10) or a "BackToResource" node (see Section 13.2.2.11), when there is a change from an IVR resource to a call pit, the call is diverted to a message call pit. In this case, the notion of resource reservation does not exist: the selected message call pit must simply be one of the message call pits of the group specified in the node. Once the transfer is carried out, the IVR resource is released.

From call pits to IVR: configuration with a single media server

When a call is transferred from a call pit to an IVR resource following the execution of a "ChangeResourceType" node or a "BackToResource" node, the choice of the resource to be used will be made as follows:

- if a "strapping" type resource is idle, it will be selected for the transfer,
- otherwise, if a "mixed" type resource is idle, it will be selected for the call transfer,
- if no "strapping" or "mixed" resource is idle, the call will be put on hold until a resource is released.

From call pits to IVR: Configuration with several media servers

When a call is transferred from a call pit to an IVR resource following the execution of a "ChangerTypeRessource" node, the choice of the resource to be used will be made as follows:

- If a "strapping" type resource located on the **same M5000 CC Media Server** as the one currently processing the call is idle, it will be selected for the transfer.
- Otherwise, if a "strapping" type resource, monitored by **another M5000 CC Media Server** is idle, it will be selected for the transfer.
- Otherwise, if a "mixed" type resource located on the **same M5000 CC Media Server** as the one currently processing the call is idle, it will be selected.
- Otherwise, if another "mixed" resource (on **another M5000 CC Media Server**) is idle, it will be selected for

the transfer.

- Finally, if no "strapping" or "mixed" resource is idle, on the same M5000 CC Media Server or another one, the call will be put on hold until a resource is released.

On the other hand, after a **"BackToResource"** node has been executed, there must be a return to a resource monitored by the same M5000 CC Media Server that was managing the call when the "ChangeResourceType" node was executed. Thus, the transfer will be made:

- To a "strapping" resource of this M5000 CC Media Server, if any of them is idle
- Or to a "mixed" resource of this M5000 CC Media Server, if any of them is idle,
- If no strapping or mixed resource supervised by this M5000 CC Media Server is idle, the call is put on hold.

8.5.8.2.3 PUTTING A CALL ON HOLD

When it is not possible to transfer a call to an IVR resource (no "strapping" or "mixed" resource is available), the call is put on hold. The call is then diverted to a message call pit to playback an on-hold message to the caller. The on-hold message is interrupted when:

- A "strapping" or "mixed" type IVR resource becomes available and can process the call
- The maximum resource reservation time has been reached (see the description of the **"ChangeResourceType"** node in Section 13.2.2.10 and that of the **"BackToResource"** node in Section 13.2.2.11): the execution of the tree without IVR will be continued.

Moreover, the telephone operations carried out when a call is transferred from one resource to another can take some time. In fact:

- When a call is transferred from a call pit to an IVR resource, the caller may not hear an on-hold message for a short while (silence time).
- When a call is diverted from an IVR resource to a call pit, the caller may hear part of the message played back by the message call pit to which the call is transferred (even if this is not the purpose of the executed script).

Therefore, "strapping" is an operation that is noticeable to the caller.

An additional telephone operation is carried out for a mixed resource that handles a change of resource, compared to a "strapping" resource: the lengths of time are, therefore, higher when a mixed resource is chosen to manage a call from a call pit.

8.5.8.2.4 ENTERING DTMF IN A NON-INTERACTIVE TREE

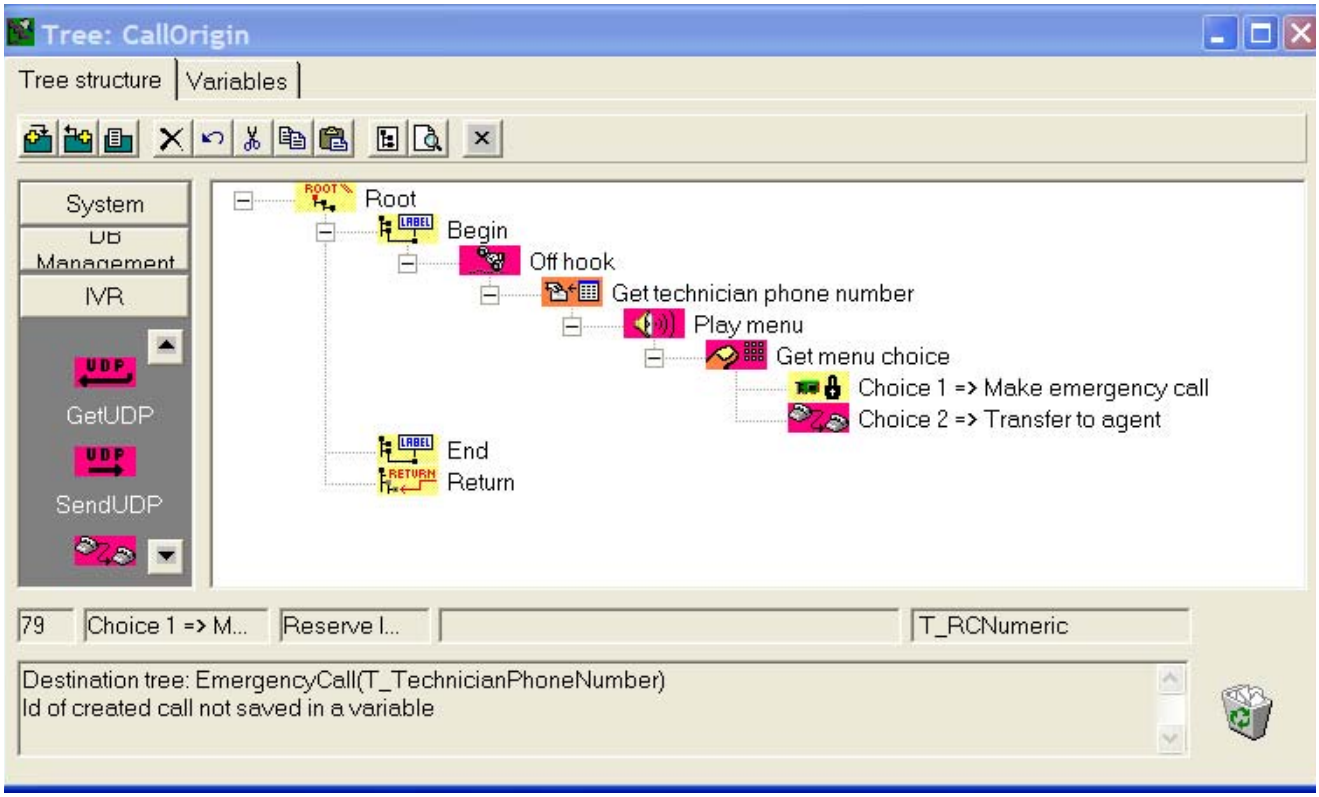
When "strapping" is used, there are some constraints at the level of DTMF (Dual Tone Multiple Frequencies) (see definition in Section 1.4):

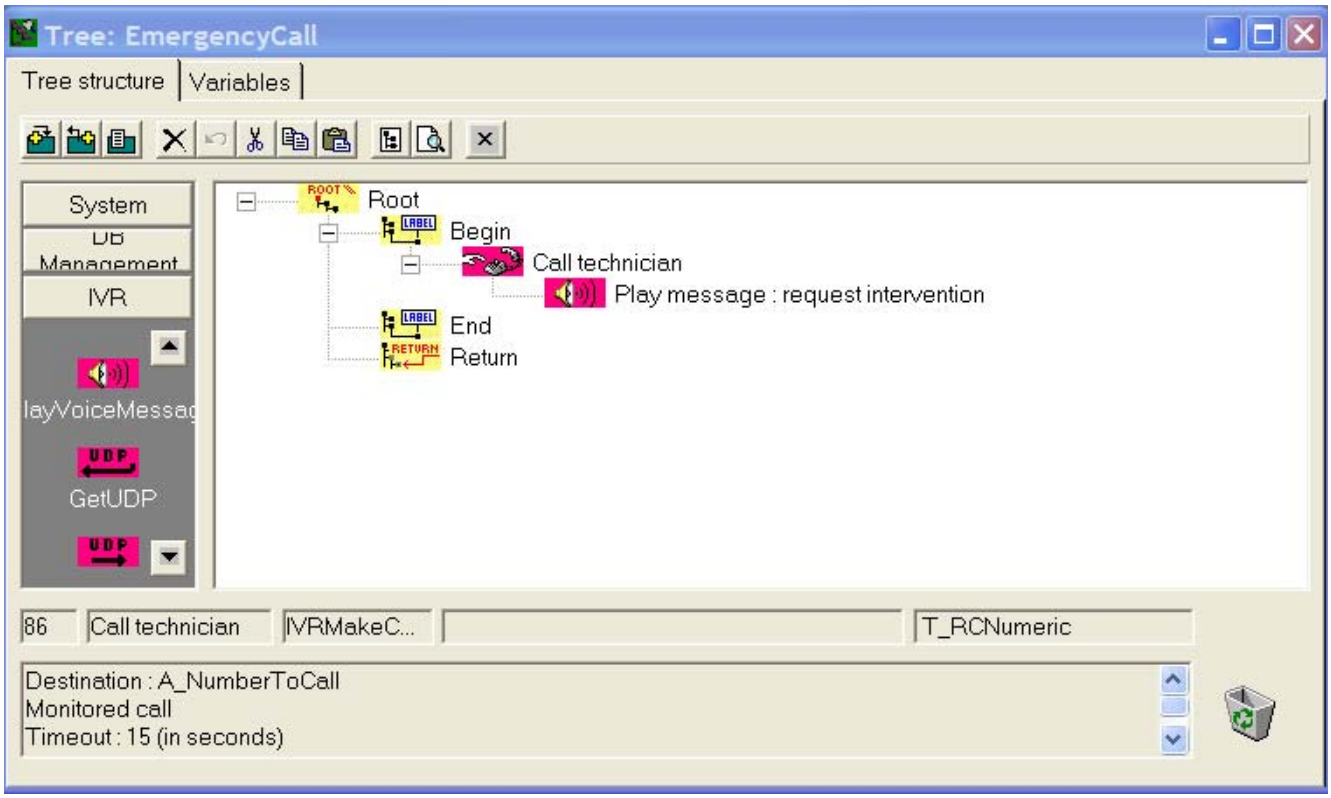
- The DTMFs entered by the caller when a voice tree without IVR is executed are lost.
- The DTMFs entered during the transfer are lost as well.
- If some DTMFs are entered by the caller during the execution of an interactive tree but are not processed in a**"GetDTMF"** node (see Section 13.2.2.3), they will be lost when the call will be transferred to a call pit. Therefore, it is advisable to use a series of **"GetDTMF"**, **"PlayMessage"** nodes (see Section 13.2.2.4) , etc. in a single interactive voice tree: the risk of entering DTMFs during the execution of a tree without IVR will thus be limited.

8.5.9 IVR IP RESOURCE RESERVATION FOR MAKING CALL AND CONFERENCE

8.5.9.1 IVR RESOURCE RESERVATION

It is possible, in a script, to reserve IVR IP resource and start a new script that would use this resource. In this second script, it is possible to make a call and use the reserved resource to play message to the called destination, to record the message and to transfer the call to an extension. This could be used, e.g. for alerting a person. The script that reserves the IVR IP resource can pass information to the script that will use the resource and make the call. Two nodes are used to do this functionality. The screenshots below show examples of a script generating an alert call from an IVR call.





In the "CallOrigin" tree, an incoming call is handled on the IVR IP resource. A menu message is played to the caller and the number of the technician is searched in a database. If the caller chooses the menu 1, the

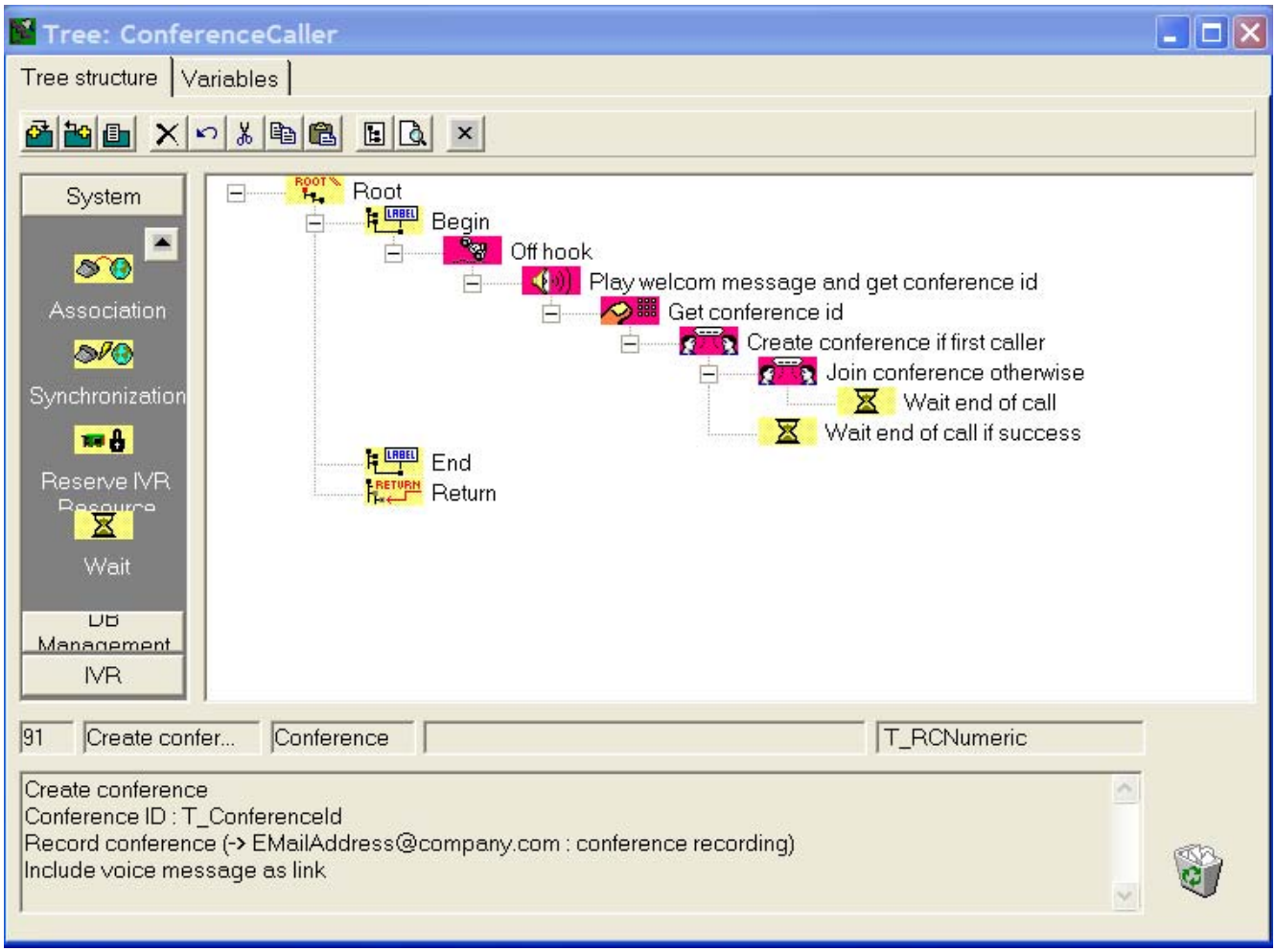
"ReserveIVRResource" node is executed. By executing this node, an IVR resource is reserved by the M5000 CC and the execution of the "EmergencyCall" tree is started (this tree will be able to use the reservedIVRResource). The phone number of the technician is passed to the "EmergencyCall" tree as argument of the tree.

In the "EmergencyCall" tree, the "IVRMakeCall" node is executed. During this execution, the IVR resource calls the phone number and waits 15 sec waiting for the hook off of the destination. If the destination (technician) hooks off, a message will be played to the destination by the IVR resource.

In the "CallOrigin" tree, once the "ReserveIVRResource" is executed, the script can eventually still running. The two scripts (thus the two calls) can continue running independently from each other.

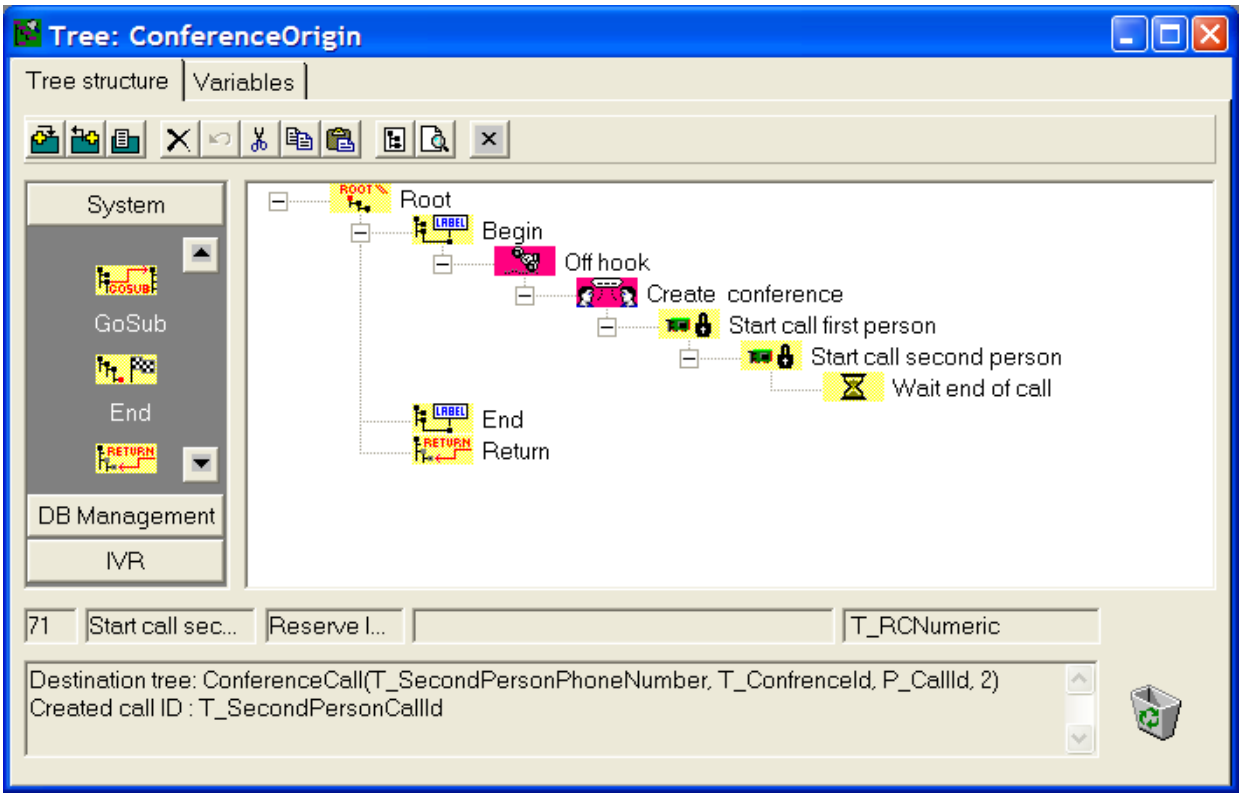
8.5.9.2 PUTTING CALLS IN CONFERENCE

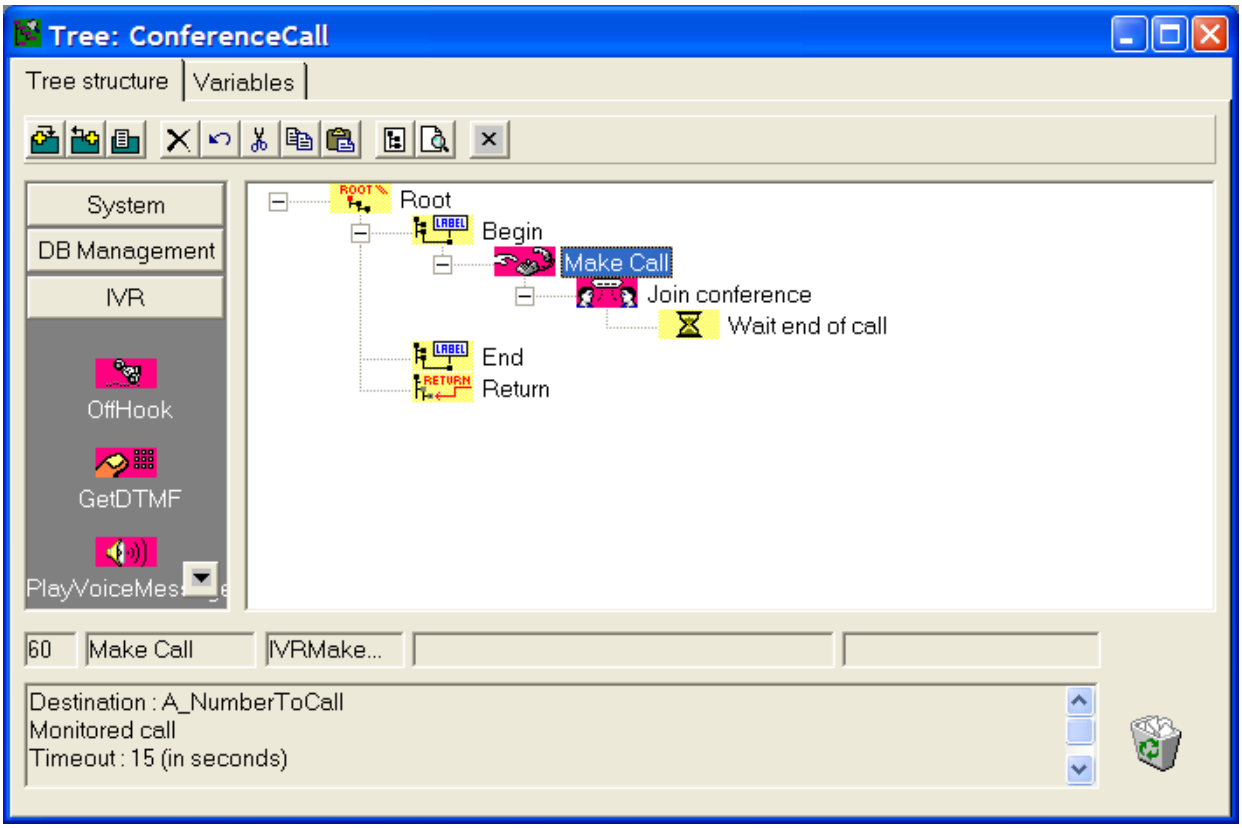
In a script, it's possible using IVR IP resource (HMP) to put several calls in a configurable conference without using "Conference Bridge". This is done by the means of two nodes, "Conference" and "Wait". Conference can be used in two different ways. First way, different callers can be put together in conference. In the second way, "Conference" and "Wait" nodes are combined with "ReserveIVRResource" and "IVRMakeCall" nodes to allow the system calling different destinations, and to put them in one conference. See an example of script putting callers in conference below



This script begins by hooking off the incoming call and playing message inviting the caller to introduce an identifier of the conference he wants to join. This conference identifier is caught by the script with a DTMF. A conference will be created with this identifier. If the script is executed by the first caller, the node execution succeed and the conference is created (return code = 0), in this case the Wait node will be executed to wait for the caller hooking off. If the script is used by the next callers, it will failed because the conference identifier already exist, In this case the second conference node will be used to join the existing conference, also followed by a "Wait" node. The execution of the conference node is terminated when the caller is connected to the conference. If a Conference node succeed, it will no longer be possible to use in the script the nodes "PlayVoiceMessage", "RecordVoiceMessage" and "GetDTMF". In our example, the conference is recorded and is sent by e-mail.

In the following example, after receiving an incoming call, two other persons will be contacted and a conference is created with all the three persons.





In the "ConferenceOrigin" tree, an incoming call is handled. After hooking off the call, a conference is created with the Conference node. Then, with two "ReserveIVRResource" nodes, two calls are generated to contact the

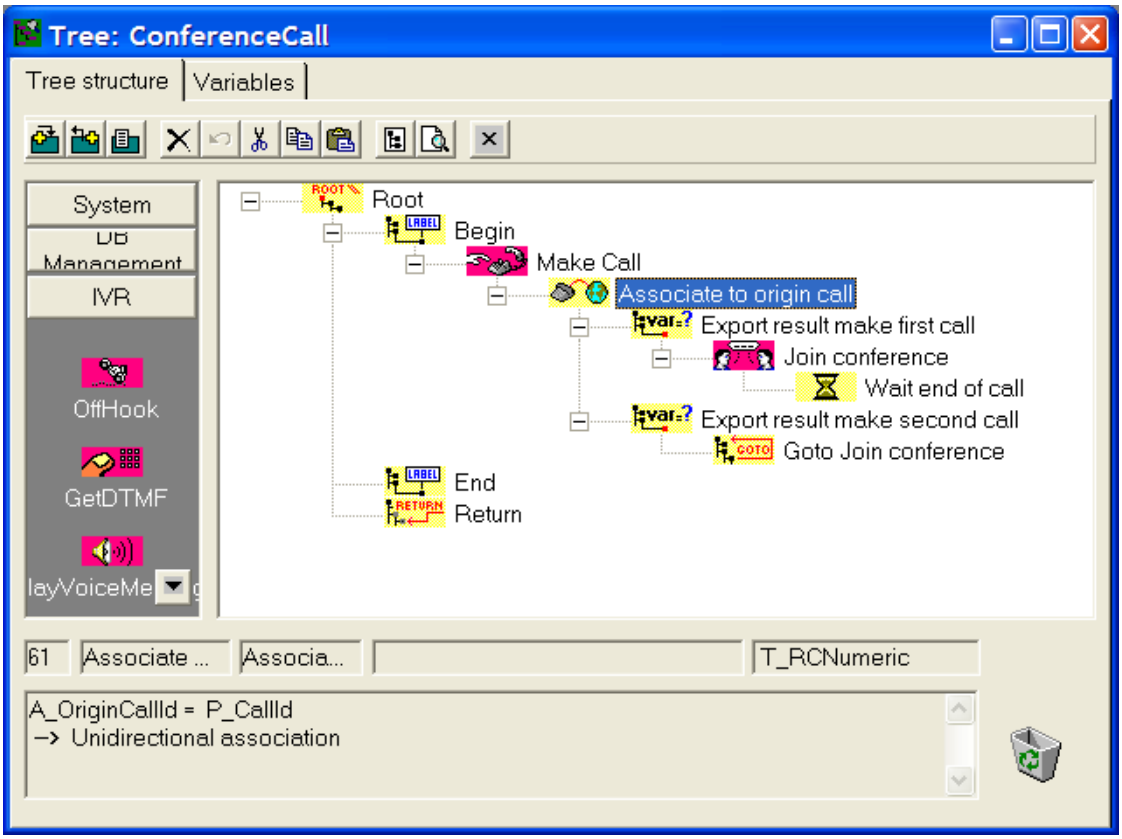
two other persons to put in conference. Those nodes pass 4 arguments to the tree that will be executed for those new calls:

- Number to compose (used by the "IVRMakeCall" node)
- Identifier of the conference (to join)
- Identifier of the initial call (call that have created the conference and executed the "ReserveIVRResource" node)
- The call number ("1" for the first "ReserveIVRNode" node and "2" for the second "ReserveIVRNode" node)

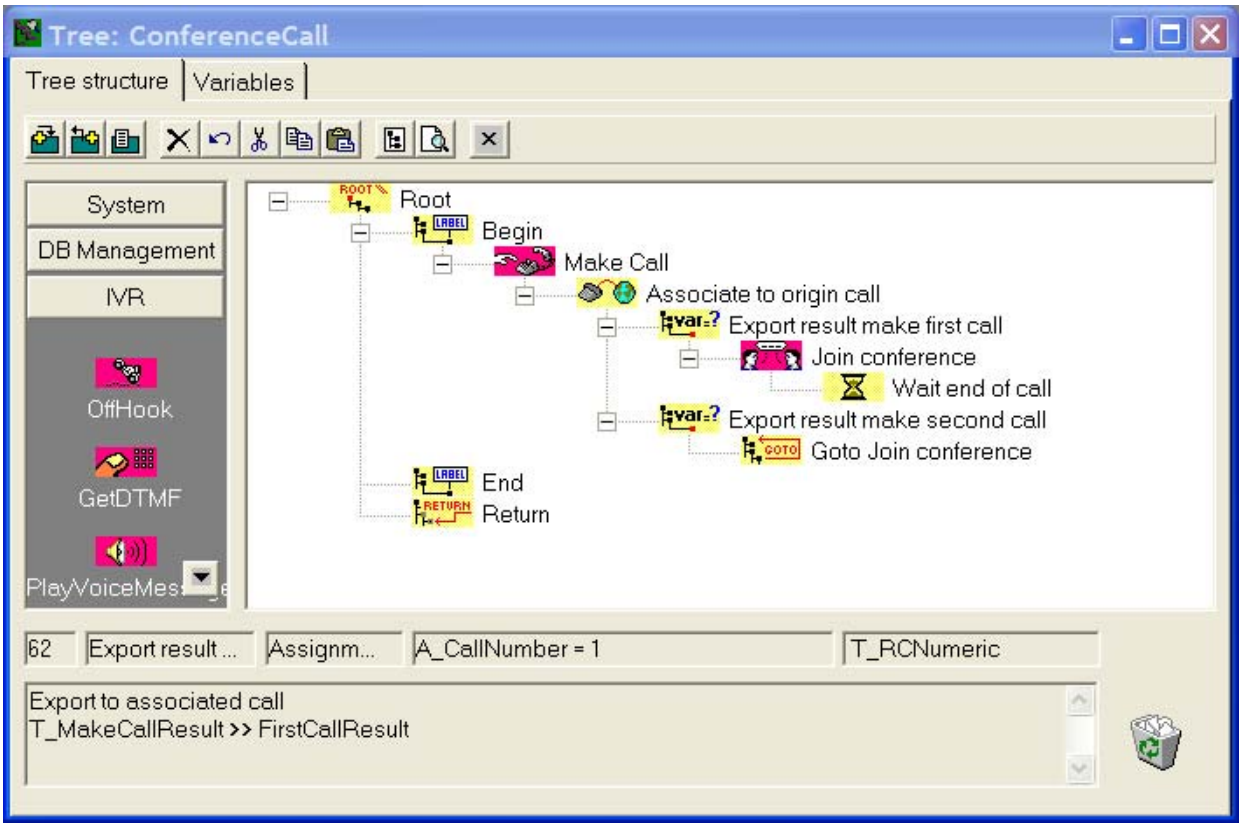
In the "ConferenceCall" tree, a call is created. If it succeeds the call is put in conference and then we wait for the end of the conference.

8.5.9.3 SHARING INFORMATION BETWEEN CALLS

An information sharing mechanism between calls allows the two calls to share value of their global variables, and if necessary interact with each other. The following example shows a modified "ConferenceCall" tree where the return result of "IVRMakeCall" node is transmitted to the initial call (the one which executes the "ConferenceOrigin" tree). This is easy to set up because the initial call has provided his identifier as argument of the "ConferenceCall" tree.



After the "IVRMakeCall" node, the "Association" node is executed and the call is associated to another call. This type of association allows the current call to be associated to another call of the same service independently to the media used by the calls (Voice, E-mail or Web). This is a unidirectional association: the call that executes the association node is associated to the other call, but the other call is not associated back (but it can be associated to another call). Once a call is associated to another call, it can use the "Assignation" node to import and/or export data from/to his associated call. In our example, "Assignation" node is used to export result of the "IVRMakeCall" node to the initial call.



In the first "Assignation" node ("Export result make first call"), the local variable "ResultMakeCall" is exported in the global variable "ResultFirstCall" of the initial call. This information can be saved in the statistic of the initial call or can be used by the script "ConferenceOrigin" for an appropriate treatment. This node is executed if the argument CallNumber has value "1" (if the execution of the "ConferenceCall" tree corresponds to the execution of the node "Start call first person" in the "ConferenceOrigin" script).

8.5.9.4 THE " RESERVEIVRRESOURCE " NODE

Here are the principal characteristics of the "ReserveIVRResource" node :

- This node can be used in a "Voice Server with IVR" tree, a "Voice Server without IVR" tree and a "Server Web" tree. This last tree allows generating, from a website or any other applications that integrate the "M5000 CC WebCall Service" webservice, a call from an "IVR" resource.
- This node can only be used if the system has IVR IP (HMP). It cannot be used with analog Dialogic cards.
- When configuring this node, a tree will be chosen to start the script that will use the reserved resource ("destination tree"). This tree can have up to 10 arguments, allowing the executing script ("calling tree") to pass information to the destination tree. The arguments are passed by value (modification of arguments in the "destination tree" won't affect the value of the variable in the "calling tree"). The "destination tree" must be in the same service and in the same version than the "calling tree"
- The reserved resource must be defined with the profile "IP for IVR" and with the traffic type "Mixed" or "Strapping". Althought the "Mixed" resources are more flexible (can also be used to handle directly an incoming call), the "Strapping" resource are more efficient and reliable (because we don't have to put the resource outside a hunt group before using it).
- The IVR resource reservation is mono Media server : the IVR resource must be defined on the same Media Server than the one executing the "ReserveIVRResource" node. When no more resource is available on the same Media Server, the node fails with return code "-3".

8.5.9.5 THE "IVRMAKECALL" NODE

This node allows calling an intern or extern number. It also allows calling an agent of a call center, but it will be seen as a private call. It has the folowwing characteristics:

- This node can only be used in a "Voice Server with IVR" tree
- This node can only be used if the system has IVR IP (HMP) resource. It cannot be used with analog

Dialogic cards.

- The call can be blind : the node is terminated when the call is in status "ringing"
- The call can be Monitored (with a presentation timeout) : the node wait the call to be hooked off, and the communication is established. If after the presentation timeout period, the call is not hooked off yet, the node fails with a particular return code.
- If the call fails, a return code with a value differrent from "0" is created (for example if destination phone is busy). In this case, the call teminate the created call before terminating the node, to allows the script to execute another "IVRMakeCall" node if necessary.
- This node allows to defines an the "User User Info" that will be passed through the network. The "User User Info" is a string that contains maximum 40 characters. For internal call, if the phone support it, this information will be displayed on the phone of the called person. If the value of the "User User Info" is longer then the maximum length, the node will not fail, but the value is truncated to the first 40 characters.
- This node cannot be used in a "Starting tree" of type "Voice Server with IVR" because the IVR resource must already handle the incoming call. Besides, it can only be used in a script wich is launch by a "ReserveIVRResource" node.

8.5.9.6 THE "CONFERENCE" NODE

This node allows putting several calls in a conference. It has the following characteristics:

- This node can only be used in a "Voice Server with IVR" tree
- This node can only be used if the system has IVR IP (HMP) resources. It cannot be used with analog Dialogic cards.
- This node has two exclusive options: "create a new conference" or "joint an existing conference".
- Each conference has a unique identifier (define by the script or by the system). It allows having many simultaneous conferences.
- When conference is created, we have the possibility to record the conference in a file and send it by e-mail to the persons configured in the node. The recording uses an additional IVR resource that will also be put in the conference. This resource will automatically be freed at the end of the conference.

The conference functionality needs HMP Conference licenses. One license for each call to put in conference, and one additional if we want to record the conference.

All the IVR resource used for the same conference must be define on the same Media Server.

8.5.9.7 THE "WAIT" NODE

The " Wait " node can be used in a "Voice Server with IVR" tree and has two exclusive options:

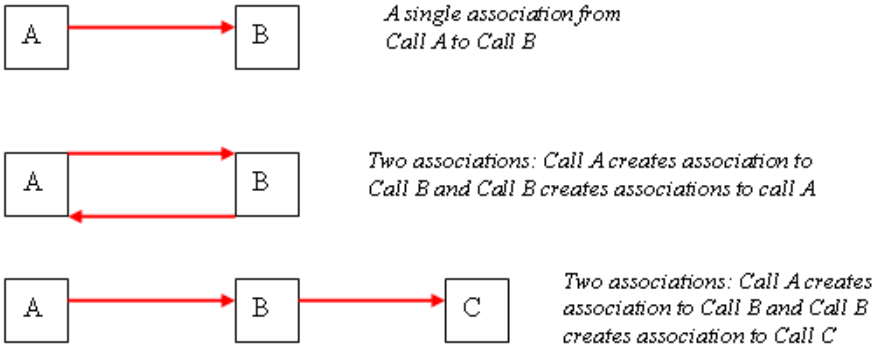
- Waiting for the end of the call, useful when the "Conference" node is used
- Waiting an interval of time (defines in second).

8.5.9.8 THE "ASSOCIATION" NODE

First, this node allows associating a web session with a voice session. This allows sharing global variables between the two sessions and allows synchronization. It's a bidirectional association of type Master or Slave (this Master/Slave is explained in the section Web/Voice interaction).

Here we'll describe another mode of association: "Unidirectional association". This association allows a call to associate with another call of the same service, independently to the media used by those calls (Voice, E-mail or Web session). When a call executing association node with success (in unidirectional mode), his script can use the Assignation node to import any global variables from the associated call. It can also use the Assignation node to export (thus modify) any global variables of the associated call. This is a unidirectional association: the associated call cannot use Assignation node to import or export the global variable of the call that does the association. If we want a reverse Assignation, we must add unidirectional Association node in the script of the associated call to do this. But this unidirectional Association node can also associate with another call.

Following figure shows the different possible unidirectional associations:



Unidirectional associations can have up to 2 conditions (linked with "And" or "Or") that the associated call must fulfill. If there is only one call in the same service that fulfils this condition, the association node succeeds. If there are none or more than one, the node fails.

This association is not permanent: it is possible to use a second Association node to associate the call to a third call. If this second association succeeds, the call is no more associated by the first association. It is only associated with the second association (thus to the third call).

8.5.9.9 COMPARISON OF THE AVAILABLE ASSOCIATION METHODS

There are three association methods in M5000 CC:

- Voice-Web association : bidirectional association, Master or Slave association
- Call-Call association : unidirectional association between two calls in the same service, independently to the media used by the calls
- Automatic Voice-Voice association of two calls : unidirectional association of a call handle by an agent with a voice call used as double call by the agent (consultation call).

Following table shows the comparison of the three association mechanisms:

CRITERION	BIDIRECTIONAL ASSOCIATION (MASTER-SLAVE)	UNIDIRECTIONAL ASSOCIATION	ASSOCIATED CALL
ESTABLISHMENT	Association node ; Master or Slave option	Association node; unidirectional option	Automatic when using Assignation node with Export/Import option
MEDIA	Voice Call with a Web Call	Two calls, independently of the media used (Voice, E-Mail or Web)	Voice call with a Voice call
GLOBAL VARIABLES SHARING	Available : fusion of global variables available in the two Medias	Not available	Not available
SYNCHRONIZATION	Possible with Synchronization node	Not available	Not available

IMPORT/EXPORT DE VARIABLES GLOBALES	Not available	Possible with Assignation node; option Export to associated call or Import from associated call	Possible with Assignation node; option Export to associated call or Import from associated call
DIRECTION	Bidirectional : the use in the Association node script (Master or Slave) implies that the other call is also associated with the call that executes the node	Unidirectional : only the call that executes the Association node is associated	Unidirectional : only consultation call can be associated to the main call
DURATION	Permanent : When Voice call is associated to a Web call, the association continues until the two calls are terminated and it wouldn't be possible to establish another Master/Slave association for those two calls	Not Permanent : Association still exist until another Association node is used	Not Permanent :: is only established if we don't use a prior unidirectional Association node, and is available until the use of a unidirectional Association node
SERVICE	The two associated calls must belong to the same service	The two associated calls must belong to the same service	The two associated calls can belong to different service

8.5.9.10 SCRIPT ASSOCIATION WITH AN IVR RESOURCE

When an IVR script is started by the "ReserveIVRResource" node, the IVR resource is associated to the script. As long as the association remains, the script can use the IVR nodes as "IVRMakeCall", "PlayVoiceMessage", "Conference",… The system terminates the association between resource and script in some particular conditions (when this association is terminated, it will not be possible to use those IVR nodes anymore) :

- If a script never executes a succeeded "IVRMakeCall" node, the IVR resource is still associated to the script until the end of the call.
- When the script executes an "IVRMakeCall" node that succeeds, the end of the physical call created by the "IVRMakeCall" (the physical call is in ringing state for the blind "IVRMakeCall" node and is in communication state for the monitored "IVRMakeCall") terminates the association between the IVR resource and the script. As for the incoming call, when physical call ends, the execution of the script continues normally. The current node is terminated and then the execution of the script continues to the end branch.

8.5.9.11 SPECIFICITY OF CALLS CREATED BY THE "RESERVEIVRRESOURCE" NODE

The calls generated by the means of the " ReserverIVRResource" node have some restrictions:

- It is not possible to transfer those calls to an agent member of a service: those transfers (to member of services or to a particular agent) will systematically fail.
- Those calls are not saved in the statistics.
- Those calls don't appear in the real time statistics.

To save that information in the statistics, information sharing techniques must be use (unidirectional association and import/export of the global variables).

- The following rules are applied for those calls :
- The DNIS of this call is defined as number composed by the "IVRMakeCall" node when the node succeeds. Otherwise, DNIS string will remain empty.
- The alias associated to the DNIS is a empty string
- The CLID is the number of the IVR resource that executes the node "IVRMakeCall" when it succeeds.

Otherwise CLID remains an empty string.

- The CallerDispalyName, CallerFirstName and CallerLastName are empty strings.
- The CallTime variable is defined when the script start as long as any " IVRMakeCall " node don't succeed. When the execution of an " IVRMakeCall " node succeeds, the moment that physical call is created is assign to this variable.

8.5.10 OVERVIEW OF PREDEFINED SCRIPTS

The M5000 CC enables the agents to connect and manage their statuses (Ready, Not Ready and PCP) without any M5000 CC User application. To do so, they just need to call specific Services which are included in the M5000 CC.

The predefined scripts are available or unavailable depending on the with/without IVR configuration of the system:

Tableau 8.8 SCRIPTS AVAILABLE ACCORDING TO THE WITH/WITHOUT IVR CONFIGURATION

WITH IVR	WITHOUT IVR
• IVRLogin: enables agents to log in or out (see detailed description in the appendix Section 13.4.2) • IVRStatus: enables agents to shift between the "Ready" and "Not Ready" statuses (see detailed description in appendix Section 13.4.3) • IVRPcp: enables agents to toggle to "PCP" (see detailed description in the appendix Section 13.4.4) • Conversation Recording: involves putting the call on conference with an analog resource. (See detailed description in the appendix Section 13.4.5)	• IVRLogin: enables agents to log in or out (see detailed description in the appendix Section 13.4.2) • IVRPcp: enables agents to toggle to "PCP" (see detailed description in the appendix Section 13.4.4) **Note:** *The "Ready" and ""NotReady" statuses are managed by the PBX. The agent must use the keys programmed on his or her set to toggle between the "Ready" and "Not ready" statuses. The "PCP" status of the M5000 CC corresponds to the "Not Ready" status on the PBX. The agent also uses the programmed key on his or her set to toggle from the "PCP" status to "Ready" status.*

Note: The preset "Conversation Recording" script cannot be executed by an M5000 CC installed without a Dialogic card or IP resources since it requires the use of a "SaveVoiceMessage" node.

Moreover, when M5000 CC has the “Conference bridge” function (see Section 8.9), a "Conference" script (see Section 13.4.6) is added to the preset scripts. This conference bridge script should never be modified because it would stop working, and must always be in production when the applications are started.

8.6 CONCEPT OF LOCALISATION

The M5000 CC system has a database (DBLocalization) containing several tables with all the strings of text appearing in the applications (toolbars, messages, popups, etc.). Tables are divided into columns, each column corresponding to a specific language. The two first lines of each column are reserved:

- the first for the language name (which is the same as the column title),
- the second for the definition of the mode: translation or normal

Note: The translation mode allows translators to track easily the string of text to be translated. When in translation mode, the whole text appears in the application interface with the string number between brackets.

All applications have references to one or more tables. One table can be referenced by one or more applications:

Tableau 8.9 TABLES OF THE "DBLOCALIZATION" DATABASE ASSOCIATED WITH EACH APPLICATION

APPLICATION	TABLES ASSOCIATED
Statistics Builder	• Agora Server • Agora Tapi • LocalizationShared • ProductDescription
M5000 CC Administrator	• Administrator • TreeServer • LocalizationShared • ProductDescription
M5000 CC Service Manager	• DataMNodes • IVRNodes • UINodes • OutBounds • Service Manager • TreeServer • SysNodes • Simple Routing Wizard • LocalizationShared • ProductDescription
M5000 CC User	• DataMNodes • UINodes • OutBounds • User • TreeServer • SysNodes • Simple Routing Wizard • LocalizationShared • ProductDescription
M5000 CC Media Server	• DataMNodes • IVRNodes • IVRServer • SysNodes • TreeServer • LocalizationShared • ProductDescription
M5000 CC Wall Display	• Wall Display • LocalizationShared • ProductDescription
M5000 CC Portal **Click & dial** **Calls and e-mails** **Supervision** **Agent toolbar** **Directories**	• Portal
Statistical reports	• WebReport

8.7 OVERVIEW OF THE M5000 CC PORTAL

8.7.1 IDENTIFYING M5000 CC PORTAL USERS

8.7.1.1 SINGLE SIGN-ON

The user is authenticated when the portal is started based on his Windows 200x domain account. There are three possibilities:

- If the user belongs to the same domain as the server, no additional authentication is required.
- If the user does not belong to the same domain as the server but there is an approval relation between their domains, no additional authentication is required.
- If the user does not belong to the same domain as the server and there is no approval relation between their domains, the browser opens a window for the user to authenticate himself or herself in this domain.

So long as the browser is not closed, the user remains authenticated to the server. However, if the browser is restarted, a new authentication phase takes place.

8.7.1.2 USER-RELATED INFORMATION

After start-up, the user name defined in Active Directory is displayed in the portal information area.

8.7.2 MAIN DISPLAY MODES

- The browser retains its normal size and displays a set of frames :

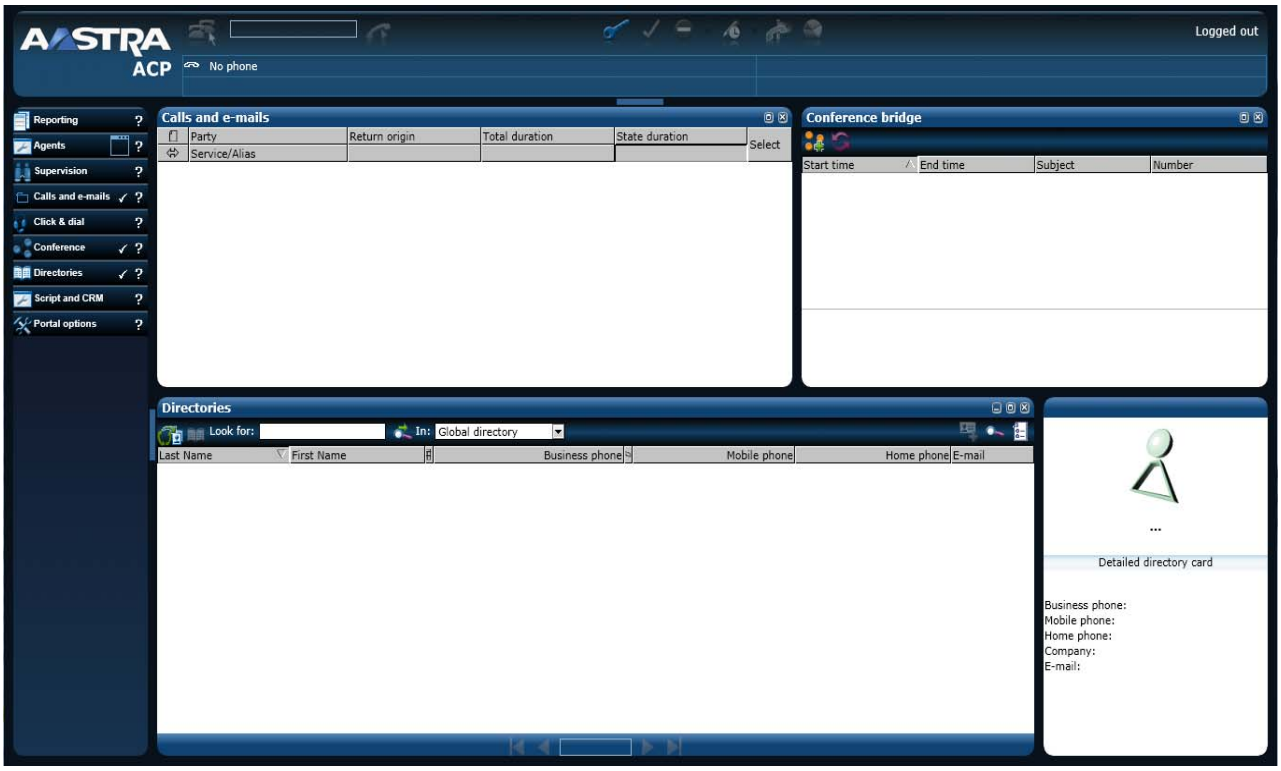


Figure 8.27 DISPLAYING THE M5000 CC PORTAL IN "NORMAL" MODE

- "Call Panel" and "Application Panel" can me minimize by clicking on slide button.

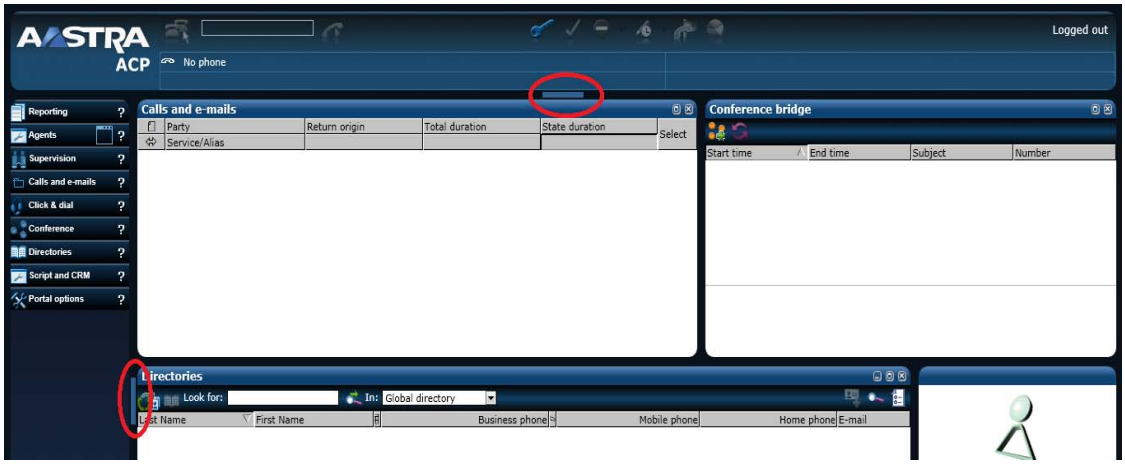


Figure 8.28 SLIDE BUTTONS TO CLOSE/RESTORE "CALL" PANEL AND "APPLICATION" PANEL

8.7.3 FRAMES AND APPLICATIONS

The portal allows users to access several services inside the same browser. These services are grouped in form of web applications, which are displayed in one of the portal frames.

8.7.3.1 FIXED FRAMES

The portal has two permanent frames, containing respectively:

- A menus area (on the left) comprising web applications start buttons.
- A tools area (on top) comprising the logo, one or more tool bars, one voice call preview area and the information area at the right

Those fixed frame can be minimized.

8.7.3.2 CONFIGURABLE FRAMES

In normal mode, configurable frames (as opposed to permanent frames (see 8.7.3.1))) occupy a major part of the portal. One to three configurable frames can be displayed in the portal at the same time. Each frame displays the main page of a web application (see 8.7.3.3) started by the user.

Using the options page, the user displays the portal in one, two or three frames (see u). Then, he can also specify whether certain web applications must be automatically launched when the portal is started, in the frames corresponding to the selected layout (see u).

After the portal is started, a web application started manually by the user appears in the first configurable, empty frame. If no frame is empty, the application is positioned in the lower frame, which appears automatically if it was not yet visible.

The upper frames (one or two are visible, depending on the display chosen by the user) contain only one application at a time. Once started, an application located in any of the upper frames can be closed by the user: the corresponding frame then becomes available to receive another application.

The lower frame, on the other hand, can contain several web applications at the same time. Only one of these applications will be visible at a time, the others are masked. It is possible to switch between the applications located in the frame with the help of the buttons in the menu area. Moreover, the applications started in the lower frame can also be closed individually, using the corresponding button located in the application's title bar.

The size of the configurable frames can be modified by the user in two ways:

- by adjusting the frame separators: the frame separators can be moved with the mouse to modify their sizes precisely.
- using re-size buttons: each frame has one or more buttons used to maximise it, restore it (to its size before maximisation) or minimise it.

8.7.3.3 AVAILABLE APPLICATIONS

Depending on his rights and/or assignment to a Contact Center service, the user has a set of web applications:

- Reports
- Calls and e-mails
- Monitoring
- Click & dial
- Directories
- Conference bridge.

These applications can be started with the buttons located in the menu area, and appear in one of the portal's configurable frames.

8.7.4 LANGUAGE

The language in which all the portal and web application labels are displayed can be chosen by the user.

When the portal is started for the first time, the user's regional parameters are automatically detected and determine the initial language. If the language of the regional parameters is not available in the portal, the first available language is used.

Later, the language can be changed at any time from the options page (see Sheet U-900).

The portal and web applications can be translated into other languages (see Section 14.4).

8.7.5 APPEARANCE

The portal and the web applications it is hosting can be represented according to different appearances: colours, fonts and character sizes, positions, images, etc.

Using the options page, the user can select another appearance from the list of available appearances (see Sheet U-900).

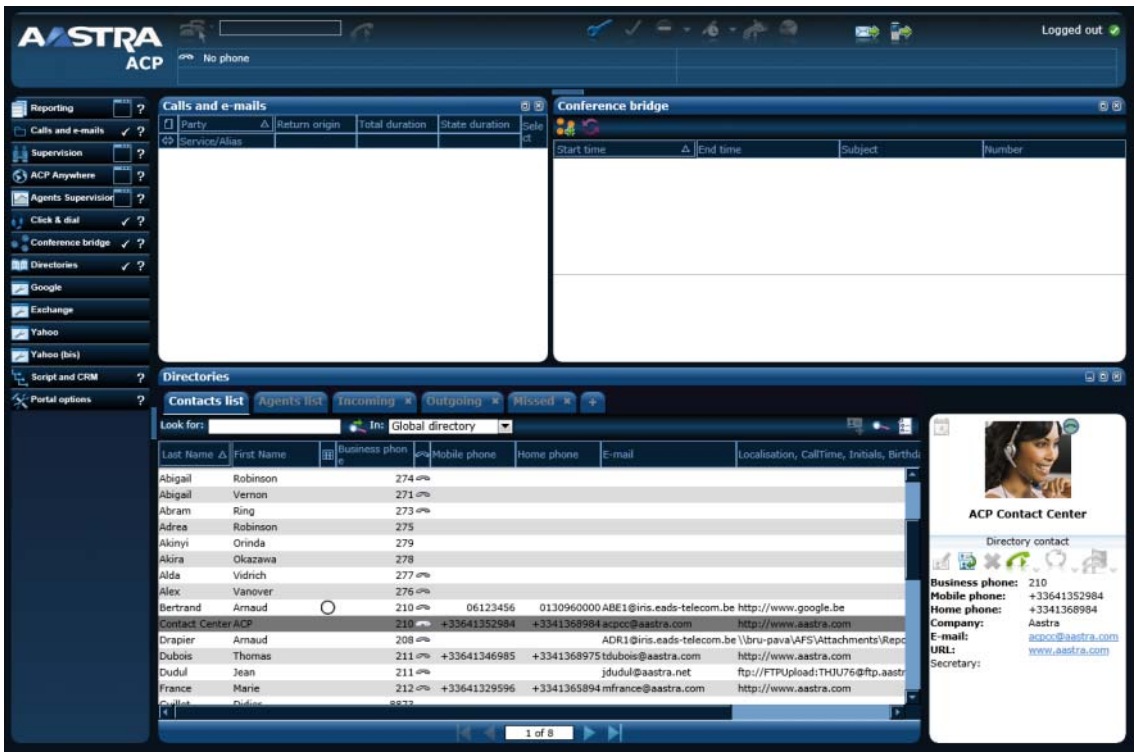


Figure 8.29 APPEARANCE MITEL BLUSTAR

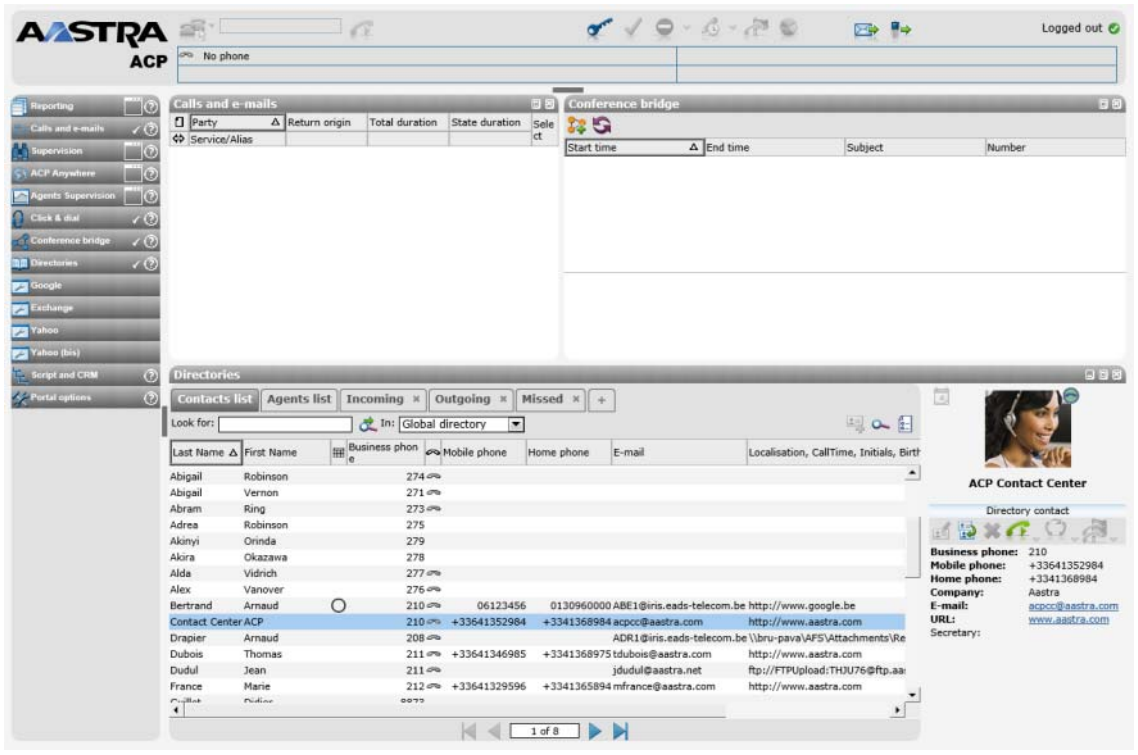


Figure 8.30 APPEARANCE LIGHT CLASSIC

New appearances can be created (see Section 14.4).

8.7.6 OPTIONS

The portal presents a configurable environment to the user through options (see Sheet U-900):

- Language
- Appearance
- Layout
- Default application
- Telephone number.

These options are persistent, enabling the user to find his own environment again during the next session even if he is working on another computer, or after server restart.

8.7.7 FAQ M5000 CC PORTAL

8.7.7.1 WHAT IS THE IMPACT OF A BROWSER UPDATE?

Updating (refreshing) the portal's main page, for example, using the **[Display > Refresh]** menu is the same as closing the browser and restarting the portal completely. Therefore, all web applications are closed and, for an agent, it is generally disconnected (provided the portal is the last web service client running with its identity).

Refreshing a frame or **"popup"** window in the portal (using the contextual menu obtained by right-clicking the frame or window) is not supported. However, the frame or window's **"Close"** button is used to stop a particular application. The same (or another) application can then be restarted in the frame thus released.

8.7.7.2 WHY IS THE AGENT DISCONNECTED WHEN THE BROWSER IS USED TO DISPLAY ANOTHER PAGE?

When an URL is entered in the address bar of the browser which displays the portal, this latter is closed so the new page can be displayed. This is the same as a monitored closure of a browser restart.

Therefore, all web applications are closed and, for an agent, it is generally disconnected (provided the portal is the last web service client running with its identity).

8.8 CRM SHEET

To process incoming and outgoing calls, M5000 CC offers the possibility to open a CRM sheet in M5000 CC upon call presentation. This sheet may be any web application accessible from the agent's workstation. It may also be a document like a pdf file, a Word, Excel document, etc. A CRM sheet may also be opened when the agent opens an e-mail. The CRM sheet function is only available for agents using the M5000 CC application. Therefore, it is not available for agents using the M5000 CC User application or an application developed from the M5000 CC User API.

8.8.1 INCOMING PROFESSIONAL CALLS

For an incoming professional call, the URL to be used for the CRM sheet is defined on the TransferCall node. The full text of this URL can be entered first while defining this URL. Moreover, it is possible to use any variables (internal variables, arguments, global variables) to define all or part of the CRM sheet URL .

This approach offers different call processing possibilities:

- This makes it possible to decide whether or not to display a CRM sheet when a call is presented.
- This allows a different web application to be displayed based on call context.
- This also makes it possible to transmit to the web application all known information about the call, which may be displayed in it. The information transmitted may first be located in a database and/or application server in the company.

Although it is equally possible to transmit information about the agent to whom the call is presented (such as his or her ID, name, extension number used, etc.), it is not possible to send a piece of information calculated from the available information about this latter. For instance, it is not possible to find in a database the URL to use based on the agent to whom the call is presented.

When a call is transferred from one agent to the other, the CRM sheet is also transferred.

8.8.2 OUTGOING PROFESSIONAL CALLS

For an outgoing professional call, the URL to use for the CRM sheet is defined for each version of an outgoing service (in the Version tab of the M5000 CC Service Manager application's Properties window). In practice, only the URLs defined for the Production and Beta versions are used. Like for incoming calls, it is possible to use some variables to define all or part of the CRM sheet URL. On the other hand, global variables cannot be used.

Like for incoming calls, the use of a CRM sheet is optional and it is possible to transmit call-related information to the web application. It is not possible, however, to choose the application to run, within the same service: only one application can be run. Since this URL is not created inside a script, it is not possible to define this URL from information found in an external database, or from an application server in the company.

8.8.3 E-MAIL

Opening a CRM sheet while opening an e-mail is similar to opening a CRM sheet when an incoming professional call is presented. In fact, the URL to used is defined in the same way as in the DistributeEmail node. So, the CRM sheet function for an e-mail has the same possibilities and limitations as for incoming professional call processing.

8.8.4 SIMPLE ROUTING WIZARD

The simple routing wizard, used for simplified incoming call processing, is also used to execute a CRM sheet when a call is presented to the agent. With this wizard calls are routed according to CLID group (list of calling numbers): it is possible to define up to two successive transfer attempts. For each CLID group and each transfer attempt, the wizard is used to define the characteristics of this transfer. It is possible, among these characteristics, to specify whether a CRM sheet and the URL used are required. A limited amount of call-related information can be passed on to the CRM application: call identifier, user-to-user signalling associated with the call, caller number, called-party number (DNIS), dialled DNIS alias, caller hunt group number, departmental name, caller's first name, caller's surname and first name, surname of the called party in charge of return to attendant, first name of the called party in charge of return to attendant, surname and first name of the called party in charge of return to attendant.

8.8.5 COMMON CHARACTERISTICS

Since the application used may not allow a CRM sheet to be opened after being closed by the agent, the user can specify, anywhere the CRM sheet URL is used, whether this sheet may or may not be reopened after being closed.

The M5000 CC application toolkit used by the portal can be integrated into the web application launched by the portal. This makes it possible to offer yet more advanced services for call processing. For instance, the information collected inside the web application may be stored in some global variables that may be backed up in the call statistics. This also makes it possible to add call-control functions and/or agent status in the

application. Finally, information about the CRM function (sheet URL, possible reopening) is available in this toolkit. This way, this information can be used when the agent is using an application into which the toolkit is incorporated instead of using the web portal.

The variables used to define the URL are evaluated by the server when the call is presented and when an e-mail is opened. Integrating the M5000 CC application toolkit makes it possible, for instance, to modify the URL used during an agent-to-agent transfer. However, since there is a short interval between the time the server is calculating the URL and the time the sheet is displayed inside M5000 CC, the modifications of variables made during this short interval are not taken into account.

8.8.6 INTEGRATION INTO THE PORTAL

When a CRM sheet is used for a call or e-mail, the portal displays this sheet either in a new window or in a frame of the portal: the portal user may choose the CRM sheet display mode.

When a new window is used for the CRM sheet, several windows may be opened and viewed simultaneously. The portal automatically activates the window containing a CRM sheet when the associated call is presented on the agent's set and the call becomes active (after the agent has taken the call, when a call on hold is resumed, etc.). On the other hand, selecting a CRM sheet does not affect the status of the associated call.

Only one CRM sheet is visible when a portal frame is used. However, several CRM sheets may be opened simultaneously. When a call is presented on the agent's set or becomes active, the corresponding sheet is opened and made visible in the portal frame. The following restrictions do apply:

- If the agent had closed the sheet and reopening the sheet is not allowed, the CRM sheet will not be reopened.
- If the CRM application has not been opened in a portal frame, the CRM sheet will not be opened.
- If the frame containing the CRM application is not visible (this is possible with the third frame), the CRM sheets are actually opened, but the frame and, thus, the CRM sheet remain invisible.

So long as the CRM sheet is not closed by the agent, the call inside the server is kept active even if the physical call disappears. In this case, the logical call ends after the agent has closed his or her CRM sheet; this enables the server to back up the call in the statistics. This behaviour is similar to the use of the agent script in the M5000 CC User application. If the reopening option is selected, the agent can only reopen the CRM sheet after closing it if the physical call still exists (the associated mail is still open).

At the end of the presentation timeout, if the agent has still not responded to the call, the M5000 CC Server stops presenting the call to the agent and closes the application window automatically. The window is also closed automatically when an agent transfers the call to another agent.

8.9 OVERVIEW OF THE CONFERENCE BRIDGE

Users connected to the M5000 CC Server via a thin client application (for example via M5000 CC Portal - see Sheet U-943) may reserve conferences and/or participate in conferences organised previously using the “Conference bridge” function. More precisely, each user can:

- Reserve (organise) a conference: apart from the different participants specified, the organiser is equally a participant in the conference.
- Cancel a conference: an organiser can cancel a conference he or she had organised previously.
- Supervise a conference: a conference participant can supervise the progress of the conference. In particular, he or she can see which participants are already connected to the conference and those not connected. Update is done in real time.
- Mute/unmute connected participants in a conference he or she had organised previously

8.9.1 CONFERENCE GROUP AND CONFERENCE BRIDGE ADMINISTRATOR

The possibility to reserve or supervise a conference is only available to users belonging to the “Conference organiser” group (see Sheet U-312). Any user defined in the system can be included in this group and may have the right to use the conference function via a thin client.

Moreover, some users are defined as conference administrators (see Sheet U-322) in the Administrator. These users may modify, cancel and supervise all the conferences defined in the system, even those in which they are not participating and have not reserved.

8.9.2 RESERVING AND MODIFYING A CONFERENCE

When a user is organising a conference via the conference bridge function, he or she must provide the following information:

- The conference topic
- The date and time the conference will start and end
- The name and e-mail addresses of the persons invited to the conference. He or she may indicate users known to the system, but also external invitees. The organiser is automatically considered as a conference participant.
- The language in which the conference must be held. The different possible languages are defined in the predefined “Conference” service.

He or she must indicate:

- Whether or not to register the conference
- Whether the conference start messages (see Section Description of the "Conference" node) will be broadcast at the conference
- Whether the conference start messages (see Section Description of the "Conference" node) will be broadcast at the conference

The organiser or a conference bridge administrator can change the reservation at any moment: all the data entered are modifiable (topic, time, etc.); some participants can be removed from the conference, and others added.

Moreover, a conference can be deleted definitely from the system.

8.9.3 CALLS’ PIT RESOURCES OF THE CONFERENCE BRIDGE

Accessibility to the Conference bridge feature can be established through a non-IVR resource.

Indeed, the basic scenario of the conference service uses "Strapping" feature to redirect the call to a conference bridge IP resource

This usage avoids limiting the number of IVR channels (100) on groups in the iPbx.

The calls’ pit 'ConfNOIVRStartTree' must be associated in order to use the conference service (see Sheet U-326).

8.9.4 CONFERENCE BRIDGE IP RESOURCES

IP conference resources are required to use the conference bridge function. One resource is used by each conference participant. Therefore, when a conference reservation is made, the system checks that, during the period specified by the organiser, enough conference bridge resources are available (one for each participant), which are supervised by the conference media server (see Sheet U-341).

Depending on the available resources, several cases are possible:

- The reservation is made successfully.
- The reservation fails because there are not enough conference bridge resources defined in the conference

media server.

- The reservation fails due to insufficient conference bridge resources availability during the time interval indicated: other reservations had been made previously and are using part of these resources during this period (or during part of this period).

An additional IP conference bridge resource is reserved for recording if the organiser decides to record the conference.

8.9.5 CONFERENCE BRIDGE AUTHENTICATION CODE

When a conference is reserved, the conference participants, including its organiser, receive a 4-digit authentication code (by e-mail). This code is used by each participant to identify him/herself and find the conference concerned when he or she calls the conference service.

8.9.6 ASSIGNING A DNIS TO A CONFERENCE BRIDGE LANGUAGE

Each Conference-Service DNIS must be assigned a language, since the script must be executed in the language chosen by the conference organiser.

Thus, for the conference service, the DNIS number configuration in the Administrator application is different from that of other services. In fact, the administrator must associate each conference service DNIS with a language in this service.

Therefore, the following constraints must be respected for the conference service:

- Only “individual” DNIS numbers can be specified: DNIS intervals are not considered for this service.
- The defined DNISs do not have any aliases and may be used as remote DNISs.
- Each DNIS indicated must be associated with a language defined in the conference service production version. It is not possible to add a DNIS without specifying a language; it is not possible either to use the same language for two distinct DNISs.

A service manager can also associate a DNIS with each service language (see Sheet U-436). More precisely, he or she can make the following modifications:

- Indicate a DNIS for a language not yet associated with a DNIS
- Modify the DNIS of a language already associated with another DNIS
- Delete the association between a language and a DNIS.

If these operations are performed for the production version at the conference service, the service properties (especially all the conference service DNISs) are automatically updated.

A synchronisation takes place between the administrator’s choice and the possible choice made by a conference service manager. Thus, the modifications made by the administrator are immediately taken into account by the service manager and vice-versa. There is no priority with regard to applications, the last modifications made in one or the other.

8.9.7 CONFERENCE BRIDGE E-MAILS

As indicated above, when a user reserves a conference, he or she must indicate the e-mail address of each conference invitee. This enables each participant to be notified about any new conference or any modification, by e-mail. The organiser also receives an e-mail: his or her e-mail address does not have to be indicated during the reservation, because it is known to the system.

Each participant receives a notification e-mail about a new conference, indicating:

- The conference topic
- The date, and time the conference will start
- The date, and time the conference will end
- The DNIS to call to join the conference
- The participant’s authentication code
- The language in which the conference will be held.

If a conference is cancelled, each participant receives a conference-cancellation e-mail, indicating:

- The conference topic
- The date, and time the conference will start
- The date, and time the conference will end.

This information enables the participants to identify the cancelled conference.

On the other hand, when a conference is modified, each participant may receive a different e-mail:

- Participants removed from the list receive a conference deletion e-mail.
- Participants added to the list receive a new conference notification e-mail.
- Other participants receive just a conference-modification e-mail, indicating the new conference data, such as the new conference time if the conference has been postponed, etc. This e-mail resembles the e-mail sent when a conference is reserved, but does not contain any authentication code (the code cannot be modified).

If the organiser had asked for the conference to be recorded, at the end of the conference, he or she will receive an e-mail indicating the URL for the recording.

Each e-mail is written in the conference language and may contain introductory sentences defined by a conference service manager. For more information about e-mail configuration, see Sheet U-436.

8.9.8 CONFERENCE SUPERVISION

Each user can view the list of conferences in which he or she is participating as a simple participant or as an organiser. He or she can also supervise each conference in real time. Therefore, he or she can see when a participant connects to a conference and when the participant disconnects, etc.

8.9.9 VOICE MODIFICATION

Each user can supervise each conference in real time in which he or she is participating as a simple participant or as an organiser. When he or she is an organizer, he or she can modify voice emission of a connected participant (mute/unmute).

This modification can also be activated when a participant put the call on hold. This automatic activation prevents other participants to hear waiting music.

8.9.10 HOLDING A CONFERENCE

To take part in a conference, a participant must dial the number sent to him or her via e-mail, and authenticate him/herself. There are several possibilities:

- The authentication code corresponds to a conference which cannot start yet (it is not yet time for conference to start) . The caller cannot connect.
- The authentication code corresponds to a conference whose start time has been reached (but not the end time). The caller joins the conference.

Depending on the conference organiser's choice at the time of reservation, certain messages are played back to the caller before he or she joins the conference, others are played back to already connected participants.

Five minutes before the end of a conference, the conference may be extended by fifteen minutes if there are participants still connected. In fact, the system will check whether, during the fifteen minutes that follow the end of the conference, there are enough IP resources to extend the conference. Thus:

- If enough resources are available, the conference is extended by fifteen minutes.
- If there are not enough resources, a message is played back to alert the participants that the conference will end in five minutes.

The fifteen-minute extension may take place several times during the same conference, as long as the participants remain connected and as long as there are sufficient IP resources.

When the conference must end (the end time has been reached), a message is equally played back to the connected participants to inform them that the conference is about to end.

8.10 FAILURE TOLERANCE

8.10.1 INTRODUCTION

All the functions described in this column enable the M5000 CC Server to tolerate different types of faults (hardware, connection faults, etc.) preventing its normal interaction with the different system components.

Service interruptions associated with these faults are limited (in terms of duration and level), and human intervention must not be required to restore the system.

This fault tolerance function is only validated when the M5000 CC Server is installed on a VMWare High Availability (VMWare HA) infrastructure associated with a Storage Area Network = SAN.

8.10.2 ACRONYMS AND ABBREVIATIONS

HA = High Availability

SAN = Storage Area Network

IVR = Interactive Voice Response

8.10.3 ARCHITECTURE

For an installation to be fault tolerant, each system PC must be protected by a backup system.

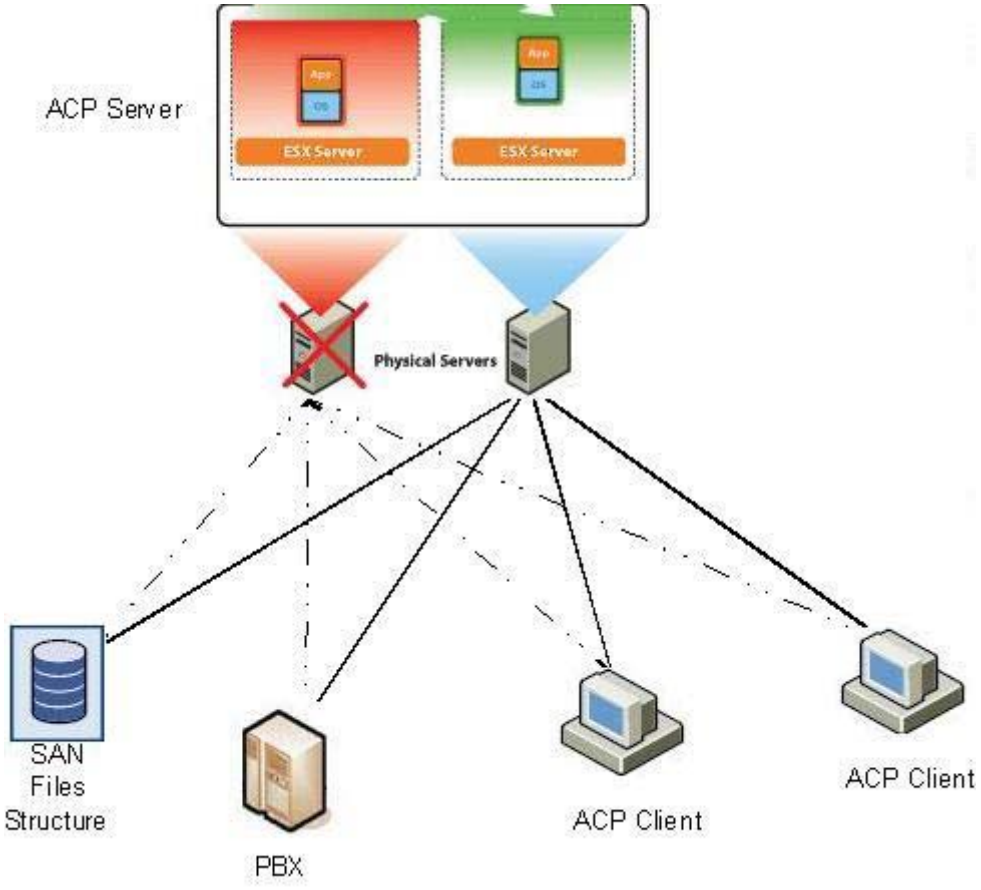
The system required for the M5000 CC Server host is an ESX VMWare HA, associated with a SAN (for file structure and other intrinsic system data).

This set of systems makes up a VMWare infrastructure.

The principles for and configuration of this installation are described in detail in the section ***"8.10.6.2 Configuring the fault tolerance system"***

8.10.3.1 THE VMWARE INFRASTRUCTURE

The following example gives a simple view of the M5000 CC topology, in a VMWare infrastructure during an M5000 CC Server crash.



8.10.4 CONSTRAINTS AND LIMITATIONS

8.10.4.1 UPDATES AND MAINTENANCE

The main system and backup system must be the identical all the time. Windows updates and other operations on M5000 CC must, therefore, always be performed on both systems at the same time.

8.10.4.2 SUPPORTED HARDWARE

- Analogue IVR resources and parallel dongles are not supported.
- HMP resources (IVR VoIP) are not supported by the VMWare infrastructure. Media servers with IVR (as well as their backup PCs) can be configured on virtual machines.

8.10.4.3 SERVICE INTERRUPTION

1 Call processing

When a fault occurs:

- The calls processed by an IVR service are lost (the resource will be released).

- Calls in an incoming call pit are redirected by the PBX after a few seconds.
- Calls in a message call pit remain there until the caller hangs up (the message is in loop) or are rerouted by the PBX after a long time.
- Communications with agents or attendants are lost.

2 Statistics

Ongoing calls and the agents' status during the fault are not fully saved in the statistics.

8.10.4.4 NETWORK CONFIGURATION

Connections between some M5000 CC applications and various external servers (mail, address book, database, etc.) are not duplicated and are, thus, not secured by the tolerance system used here.

In a multi-site configuration, for security reasons and because of the limitation in the bandwidth between remote sites, the media servers and M5000 CC Server must run on the same site.

8.10.5 DESCRIPTION OF FEATURES

8.10.5.1 FAULT DETECTION

M5000 CC Server hardware faults:

- Crashing of the hard disk
- RAM-related problem
- Mother card or CPU error

Or some connection problems:

- Different applications can no longer connect to the M5000 CC Server.
- The M5000 CC Server components do not have any direct clients, but the shared components are no longer accessible.

They are automatically detected by the fault tolerance system implemented using VMWare HA. Switchover to the backup system.

8.10.5.2 SERVER CRASH AND RESTORE

During an M5000 CC Server crash, the VMWare infrastructure will switch over to the backup server. During this cold start, all the M5000 CC Server clients are disconnected (they are notified about this loss of connection).

After the backup ESX VMWare server has been restarted, all the services and applications on the original ESX VMWare server (or on any of the host PCs of an M5000 CC Server component) are automatically restarted:

- The M5000 CC Server
- The Report Server
- The Media Servers
- The Wall Display
- The Directory Synchroniser (started by the M5000 CC Server)
- The DB Manager (started by the Media Server)
- MS Access (started by the Report Server).

Moreover, thanks to the VMWare HA infrastructure associated with the SAN, all the following files and databases used by the M5000 CC Server or any of its components are also protected:

- Configuration database (*.CFG) (except ActivationKeys.cfg)
- Script definition database (*.IDE) and sound files
- Statistical database
- Personalised reports, planned reports and access right configuration
- M5000 CC address book database (no external address books)
- The configuration of personal parameters stored in the Windows register.

8.10.5.3 PROBLEM OF DONGLE

The M5000 CC Server can work with two licence dongles (a main dongle and a demo dongle), preventing the M5000 CC Server from being blocked when the main licence dongle is faulty.

- Main dongle: M5000 CC Server licence key which must be permanently connected to the server to activate

the M5000 CC licence.

- Demo dongle: when the main dongle is faulty, the M5000 CC Server automatically switches over to the demo dongle without interrupting the working of M5000 CC). The validity of the demo dongle is limited to 30 day. Another main dongle must be procured within this period in order to continue working normally. An alarm will be activated everyday in the last validity week of the demo dongle, reminding the user of the imminent expiration of the dongle validity (the alarm will be activated every hour on the last validity day).

8.10.5.4 PBX CONNECTION

The already existing mechanism used to define some backup links for VTI/XML connections is also extended to CSTA links.

Therefore, no matter what caused the loss of M5000 CC Server connection with the PBX (disconnected cable, problem with the PBX or server network interface), it is possible to restore the supervision and control of any extension defined in the system.

While configuring a CSTA link, it is possible to specify whether it is a backup link or a main link.

The extensions will only be associated with the main CSTA links. Moreover, they will be supervised by a backup CSTA link only if a main link fails.

Nota : • *For the VTI/XML links: since only one “main” VTI/XML must be defined, any additional VTI/XLM links defined will be considered as backup.*

Nota : • *For the CSTA links: each backup link defined may be a non-dedicated backup link (serving as backup for any main CSTA link) or a dedicated backup (serving as backup for a particular “main” CSTA link).*

- Priority for using “backup” CSTA links

(1) “Main” CSTA link

(2) Dedicated backup CSTA link

(3) Non-dedicated backup CSTA link

- Temporary disconnection

  The M5000 CC Server is configured to allow temporary PBX disconnections that do not last more than one minute. If a disconnection lasts more than one minute, the system will automatically switch over to the backup link (if available), in the order defined above•.

Remarque :For more information about PBX link configuration, see Section ***"2 Configuring the PBX connection"*** in Paragraph ***"8.10.6.2 Configuring the fault tolerance system"***

8.10.5.5 MEDIA SERVER PROBLEMS

For the fault tolerance system, an automatic reconnection process for media servers is implemented, as well as the possibility to define several different physical PCs on which the media server can run.

For the detailed configuration of a media server, see Section ***"3 Configuring the M5000 CC Media Server"*** in Paragraph ***"8.10.6.2 Installing the fault tolerance system"***

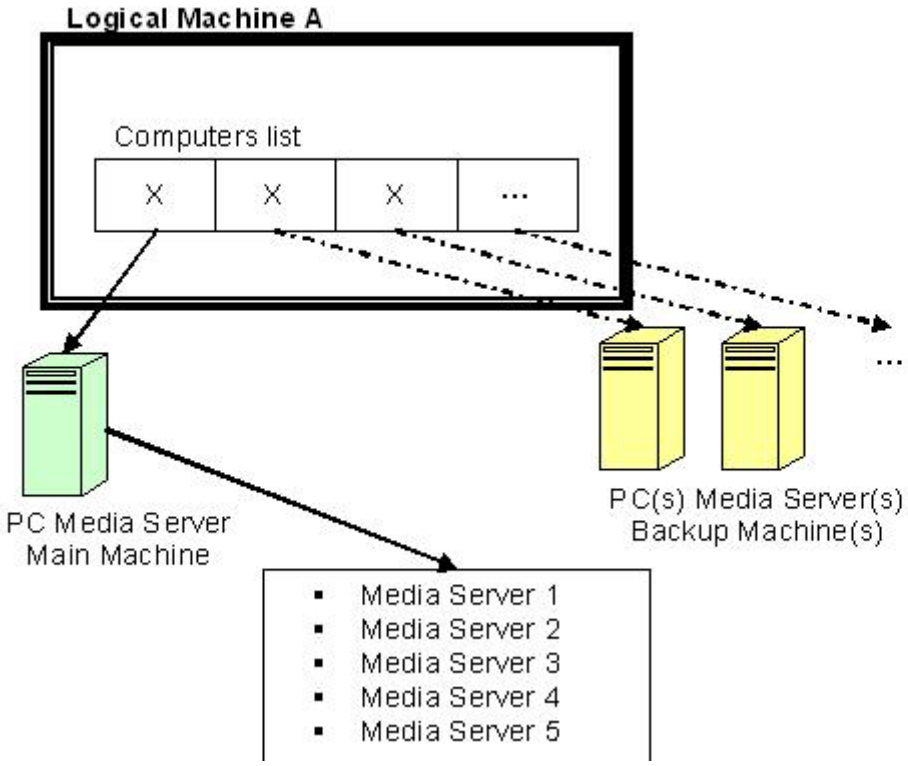
1 Defining a logical computer for media servers

To respond to the fault tolerance system, the notion of logical computer for media server has been introduced.

A media server starts on a logical computer, which may comprise several different computers (basically a main computer and a backup computer). This enables the media server to switch over from one computer to the other if it becomes impossible to start on one computer, or simply if the computer itself fails.

It is possible to define up to five different media servers on a logical computer.

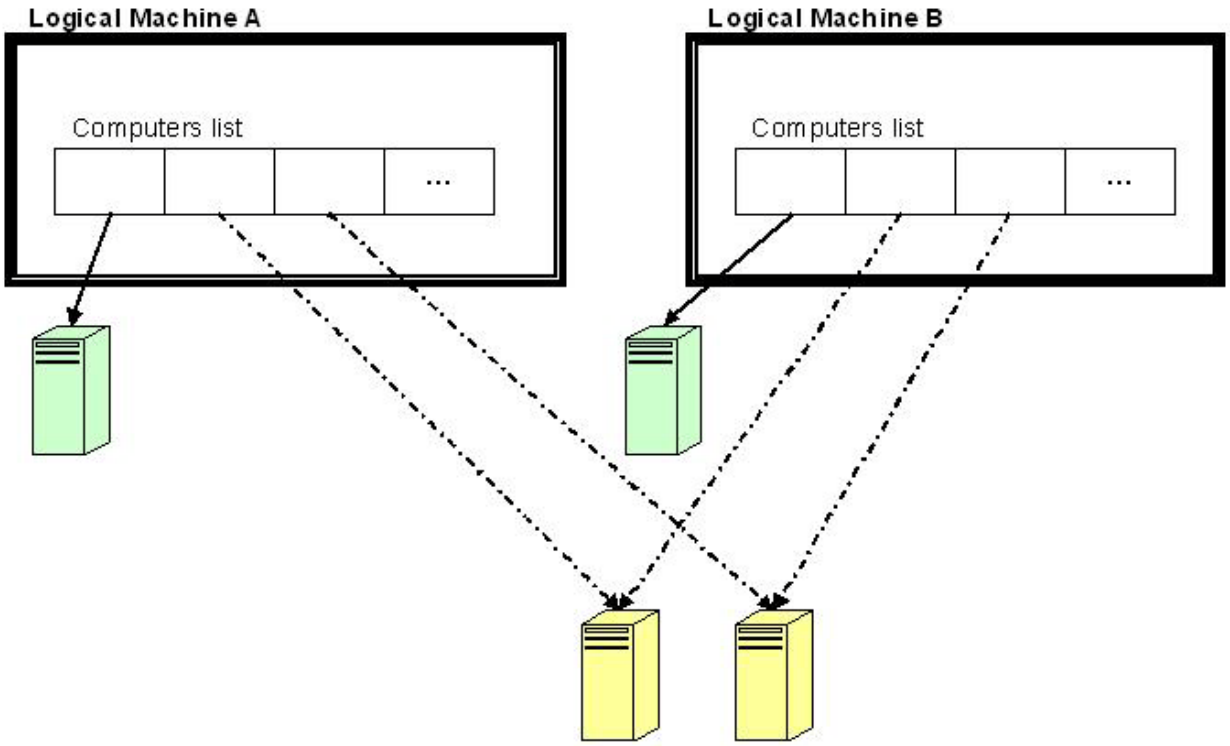
- Representation of a logical computer



Note: *If several media servers are defined for the same logical PC, they must be started on the same computer. The aim of this constraint is to have media servers, belonging to the same logical computer, started on several different computers (which complicates their maintenance). On one logical computer there can only be one active physical PC (on which the media server services are running).*

- Shared backup PCs

  It is possible (for PC economy reasons) to use one computer as backup for several different logical computers.



Note: *The PC defined as backup for two different logical computers can only be available, if necessary, to one logical PC at a time (if it must replace the main PC of logical computer A, it will no longer be available as backup for logical computer B).*

Note: *At least one distinct main computer must be defined for each logical computer.*

2 Automatic media server reconnection

When a media server fails for any reason whatsoever, an M5000 CC Server mechanism deletes it within a period which can be defined in the M5000 CC Server register (under the value*"HKEY_LOCAL_MACHINESOFTWARE \ Dialog Systems \ Agora \ AreYouAlive \ TimeOutRemoveClientForCallServer (in min) "*).

- If only one media server is defined: the M5000 CC Server will try to restart the media server on the next PC, on the list of computers contained in the logical computer.
- If several media servers are defined:
  - u If at least one of the other media servers is started on the active PC, the M5000 CC Server will try to restart the faulty media server on the active PC.
  - u If no media server is started on the active PC, the M5000 CC Server will try to start the media server on the next PC (which becomes the active PC) on the list of computers that make up the logical computer.

  The number of restart attempts can be defined in M5000 CC Administrator.

8.10.5.6 RECONNECTING CLIENTS

1 Fat clients

The following fat applications are not reconnected automatically (they require manual connection):

- M5000 CC Administrator
- Service Manager
- The user
- The integrated API-based User application
- The integrated ActiveX Control-based User application

For these applications, the existing mechanism used to detect connection problems remains unchanged.

2 Thin clients

On the other hand, thin clients using the portal are automatically reconnected.

The portal reconnects automatically to the M5000 CC Server after this latter is restored (see also column ***"8.10.5.8 Problem of IP address"*** for reconnection problems).

3 Agent status restore

When the M5000 CC system is restored, the agents' status (login/logout) and activity (ready/not ready), based on their hunt group (in a hunt group / outside a hunt group) and on their telephone extension in the PBX, are restored as follows:

- If the extension is in the hunt group, the agent status is set to "login" and "ready".
- If the extension is outside the hunt group and the agent status was "not ready" or "PCP" before the fault, the agent status is changed to "login" and "not ready".
- If the extension is outside the hunt group and the agent status was "ready", "on break" or "logout" before the fault, the agent status is changed to "logout".

Note: *During an* M5000 CC Server *failure, calls continue to be distributed to agents by the PBX; the agents may accept the calls using the hunt group function of their telephone.*

8.10.5.7 M5000 CC SYSTEM RESTORE TIME

1 Server side

When the M5000 CC Server crashes, since the most important function is call control and distribution, all the services related to it will again become operational within 5 minutes after the M5000 CC Server is restored.

This deadline does not apply to the "Real Time Supervision Report" service, which will be available after a maximum of 15 minutes.

2 Client side

Once the M5000 CC Server is restored, the web clients start their automatic reconnection process. The first web portal reconnects in less than 5 minutes.

After 15 minutes, all the available agents will be able to receive calls from the M5000 CC Server.

8.10.5.8 PROBLEM OF IP ADDRESS

For web applications and other M5000 CC applications based on server IP address (such as telephone links), it is advisable to configure them using the M5000 CC Server network name instead of its IP address (so as to be able to connect to the M5000 CC Server, regardless of the host site).

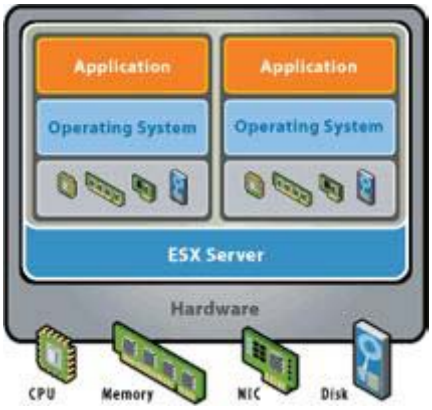
8.10.6 CONFIGURATION

8.10.6.1 VMWARE HIGH AVAILABILITY AND SAN

1 VMWare infrastructure

In a VMWare infrastructure, a virtual kernel, called ESX VMWare, runs directly on a physical hardware server (there is no operating system between the two). The virtual machine runs above this layer and gives access to the physical resources (such as the CPU, memory, network, etc.).

The following image illustrates this concept :



2 VMWare VirtualCenter

VirtualCenter is used to define virtual machines and monitor their performances, as well as those of physical servers. This application offers distributed virtualisation services such as VMware DRS, VMware High Availability (HA) and VMware VMotion.

M5000 CC Server communicates with this application to allow M5000 CC Media Server to start (“Configuring M5000 CC Media Server’s physical PCs:)

3 VMWare HA

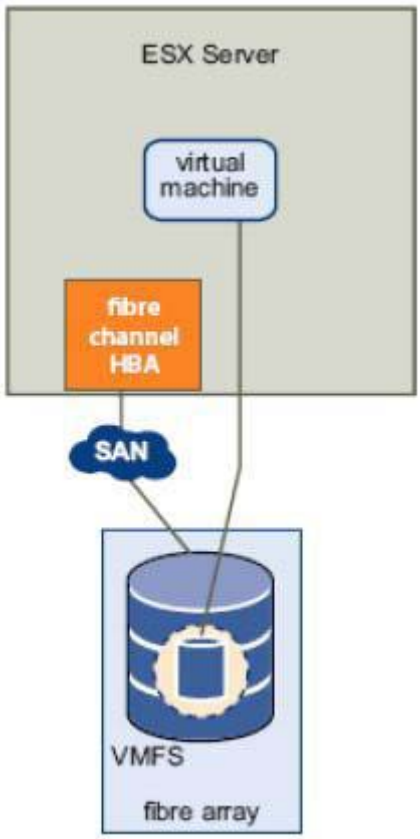
VMWare HA is one of the components of the "VMWare suite" infrastructure. If a physical server fails, this failure is detected by a heartbeat system, and the virtual machine running on this server is restarted on another server (see ***"8.10.3.1 The VMWare infrastructure"***)

4 Virtual machine and Storage Area Network

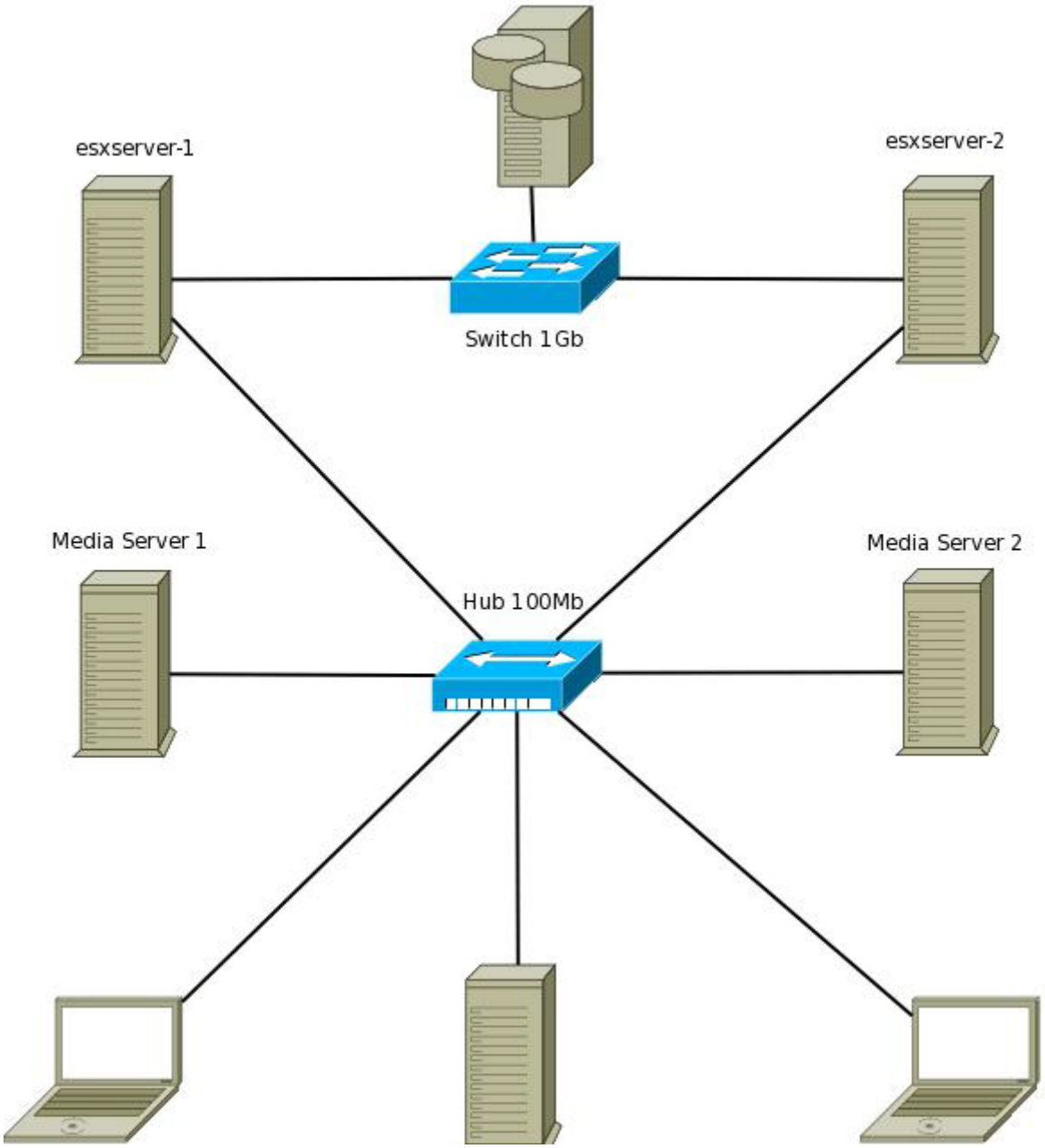
By default, with the VMWare HA system, if the physical server fails, the virtual machine is restarted from the " Virtual Machine File System " (VMFS), which is an image copy of the original server. This image copy takes place at regular intervals.

In this configuration, all the data backed up at the interval between an image copy operation and the server crash will be lost.

If the SAN is used, when the virtual machine restarts on another server, since the VMFS is stored on the SAN (for the virtual machine’s operating system, this storage are network is seen as a local device), there is no loss of data.



5 Example of VMWare HA infrastructure + SAN



8.10.6.2 CONFIGURING THE FAULT TOLERANCE SYSTEM

1 Securing the M5000 CC Server **(and its components)**

The M5000 CC Server is secured thanks to the ESX servers (see 8.10.6.1).

Concerning its components (report server, web server, etc.), apart from the afore-mentioned two components, they can all be secured by being installed on ESX servers. There is a restriction inherent in installing the M5000 CC Server components on ESX servers: they must all start on the same ESX server.

Components NOT available on the ESX server:

- Media server with IVR: for the compatibility reasons described above (see 8.10.4.2)
- Wall displays: for reasons of hardware proximity, this M5000 CC component is installed on an external computer.

2 Configuring the PBX connection

Nota : • *For details about configuration, see 4.12.2.*

3 Configuring M5000 CC Media Servers

Regarding fault tolerance, all the logical machines on which the media servers are meant to run must have one or more backup computers (see 1).

These backup computers may be either physical PCs (existing PCs) or virtual PCs (here ESX servers).

- For media servers with IVR, the main machine and its backups must be installed on existing computers (and not virtual computers).
- For media servers without IVR, the main machine and its backups can be installed on the same ESX servers (virtual PCs) on which the M5000 CC Server is running.

Media servers with or without IVR are configured in the same way. The only difference is the choice of the computer on which the logical machine can run (real machine for one, virtual machine for the other).

It is not advisable to define several different media servers (with and without IVR) on the same logical machine.

Nota : • *For details about configuration, see 4.13.2.*

4 Configuring the wall display

Nota : • *For details about configuration, see 4.17.4.*

8.11 PORTAL CUSTOM VIEW

8.11.1 OVERALL DESCRIPTION

This development give the possibility block external transfer/conference call from the portal (under some conditions) and give possibility to warn the agent by having custom colors for the "preview value" fields and the "Calls & E-mails" field in the portal.

This development of all requirements of this functionality consists in three steps

- Inform the portal user that this caller has possibility to be transferred to an external extension; by allowing having different colors for the font and/or background of this view.
- Disable the transfer button (or consultation button) to an external extension, when caller is not allowed to.
- Give possibility to see occurrence of "External transfer/conference" in the call statistics and in the real time status.

Note: *the possibility of having custom colors (1) can be independent of blocking transfer functionality and tracing it in statistics (2) and (3).*

8.11.2 FUNCTIONALITY

8.11.2.1 NOTIFY THE PORTAL USER WITH CUSTOMIZABLE FIELD IN THE PORTAL

Any of the three customizable fields, in the frames "Click and Dial" and "Calls & E-mail" of the portal, can be used to inform the portal user that the "External transfer/conference" functionality is available. This field will have customized colors for font and/or background. The value of this field is set by the script by assigning a defined text global variable to be displayed in a portal custom field.

Note: *This text variable must have an non-empty initial value.*

For the Colors, it will be set by the portal, related to the value of a particular user variable displayed in one of the portal custom field and with the correspondence "table" set in "web.config" file of the M5000 CC WebService (by default in folder "C:\Program Flies\M5000 CC\Portal\\Webservice").

The colors will be enter by his RGB color code (for exemple "#0000FF" for blue, "FF0000" for red,…).

The principle is the following: For the particular variable (choose with *"BaseOnVariableNamedForColor"*, here it is variable *"MyVariabName"*) shown in any of the three fields, if the content of the variable corresponds exactly to the string of one of the above values (here it is *"MyVariableValueX"*), then the font and/or background colors of this field are set according to the corresponding settings. If the string is found in no values, then the default colors are used.

Note: *There is a maximum of 10 different values set for the variable.*

Note: *This development is based on "inbound voicecall", but this field customization is available for all the other media sources ("outbound voicecall", "e-mail",…).*

Note: *A default value must be defined for the script variable used for selecting colors.*

Example of configuration in "web.config" of the Webservice:

In the section <appSettings> :

<appSettings>

…

<add key="BaseOnVariableNamedForColor" value="MyVariabName"/>

<add key="FieldValue_0" value="MyVariableValue0"/>

<add key="FieldValue_0_BColor" value="#0000FF"/>

<add key="FieldValue_0_FColor" value="#FFFFFF"/>

<add key="FieldValue_1" value="MyVariableValue1"/>

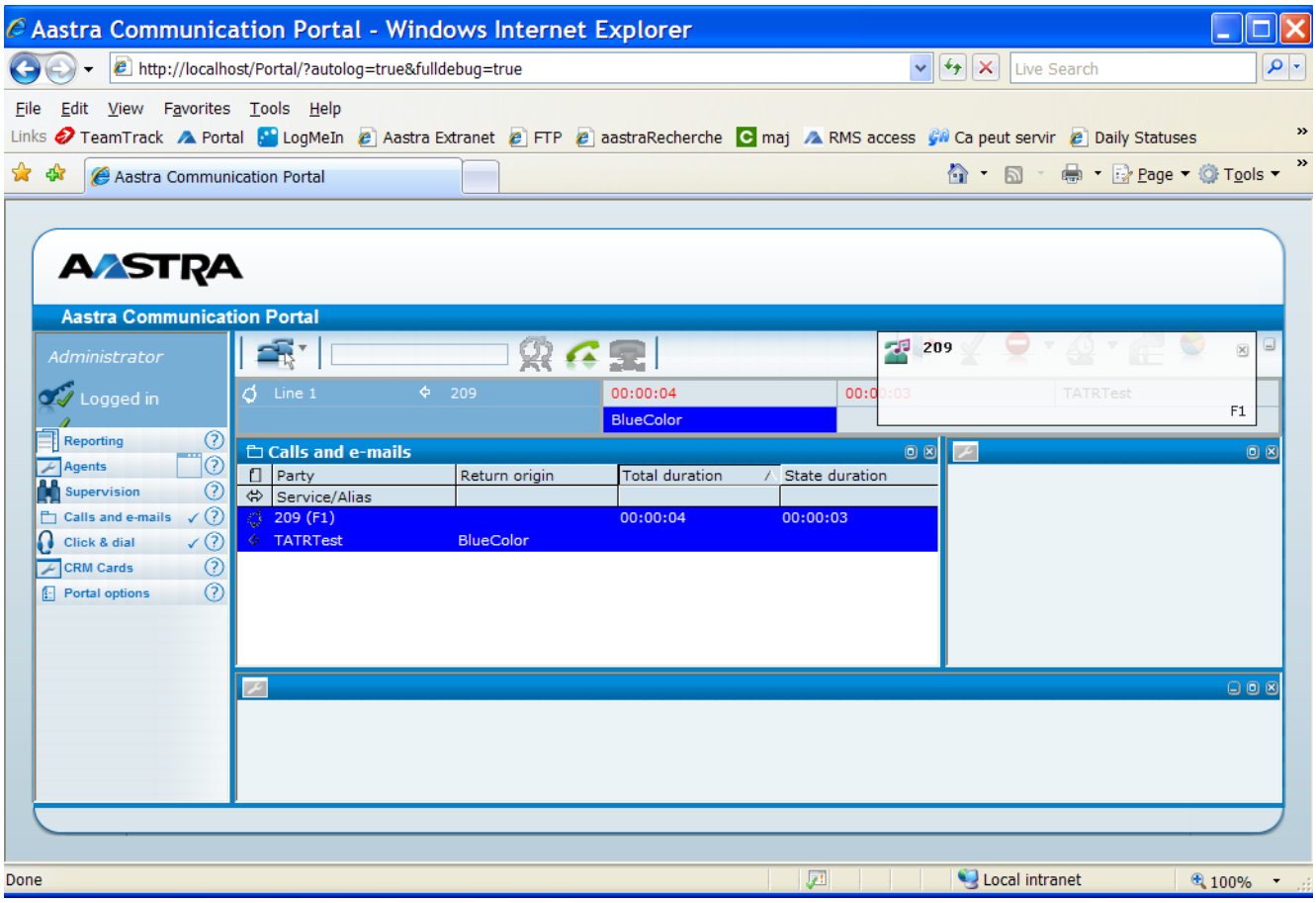
<add key="FieldValue_1_BColor" value="#FF0000"/>

<add key="FieldValue_1_FColor" value="#FFFFFF"/>

…

</appSettings>

Figure 8.31 CUSTOM COLORS



8.11.2.2 ENABLE/HIDE THE POSSIBILITY TO TRANSFER TO AN EXTERNAL EXTENSION (FOR INBOUND VOICECALL) IN THE PORTAL.

The "transfer" button will be enabled / hide based on:

- the permission of the caller
- the kind of consultation call

a) Permission of the caller :

When checking the permission of the caller, the script will use the same particular variable then in (8.11.2.1), to say if the caller has the right to be transferred to an external extension.

u If this variable value contains the "forbidden" value, the caller cannot be transferred to an external extension.

u - If no "forbidden" value is set for this variable, or this variable has any other value then the forbidden ones, the caller can be transferred to an external extension

The name of this variable is the same variable set in the (8.11.2.1) for displaying custom colours (so must be display in one of the portal custom filed).

b) Kind of consultation call :

To check if the consultation is set with an internal or an external extension, the length of the number of the remote party will be compared to the length of the numbering plan defined by the M5000 CC Administrator.

If there is a consultation call to an external extension, the transfer button will be enabled/hide depending on value set in (a); in the others cases, the transfer button will be enabled.

Example of configuration in "web.config" of the Webservice:

<appSettings>

…

<add key="BaseOnVariableNamedForColor" value="MyVariabName"/>

…

<add key="ValuesToBlockExtTransf" value="ForbiddenValue"/>

…

</appSettings>

8.11.2.3 SHOWING "EXTERNAL TRANSFER/CONFERENCE" IN STATISTICS AND REAL TIME STATUS (FOR INBOUND VOICECALL)

To be able to show "External transfer/conference" in the statistics (and in the real time status), a numerical global variable must be set in the script of the service, the name of this variable must also be defined in the "web.config" file of the M5000 CC Webservice as value of the key : *"VarExtTransForStat"*. The M5000 CC will automatically set this variable to "1" for each transfer/conference to an external extension made by the portal (and this variable is set by default to "0" in the script, so for it doesn't count internal transfers or when no transfer occurred).

By using this variable in an adequate filter, the number of "External transfer/conference" can for instance be seen in the real-time statuses and statistics.

Example of configuration in "web.config" of the Webservice:

<appSettings>

…

<add key="VarExtTransForStat" value="VariableTransfForStat"/>

…

</appSettings>

Note: *in the script of the service, the transfer node must have the option "Use agent script" set to "Yes"*

8.11.2.4 NEW CONFIGURATION OF THE CUSTOM COLOR

Configuration of the custom colors in Call & Email view of the portal has been modified and improved.

Now, configuration of the "Calls & Emails" color functionality will be completely done in the "Service Manager":

- In the "Transfer Node" for calls

- In the "Distribute email node" for emails

No variable will be need to configure colors (but on the other hand, no custom colors will be displayed in the "Custom Variable Fields" in the portal)

Note: *As no custom variable is used and displayed in the "Click and Dial" zone, this zone will not be impacted by the custom colors.*

As it'll be configured in node and not for the whole system or a whole service, each node of each service have to be configured to allow custom colors.

New Tab has been added in the specific part of the edition form of the "TransferCall node" that offer the following options:

- Activation of the custom colors by [Use Custom Call Color] check box

- Selection of the type of configuration (colors can be fixed constant or a script variable)

(see node description for more information)

Note: *The previous way to configure the custom colors are still available, but if the two ways are configured, it's the new way that will have the priority.*

8.12 DONGLE LESS LICENSING

8.12.1 OVERALL DESCRIPTION

Reasons of this development are:

- Improve delivery time (no more hardware dongle to send)
- Compliant with VMWare installation (no more Lan usb box needed)

Remarks:

- This Dongle-less licensing is compatible with current dongle licensing process; upgraded system continues to works with dongle (not changing ongoing licensing process).
- Dongle-less Licensing works with Physical server, Virtual Server and Duplicated Virtual Server.

8.12.2 FUNCTIONALITY

The dongle-less Licensing in M5000 CC use the same sales administration process as "MiVoice 5000":

1) For each new system sold, the sales administration generates a new unique system identifier: the "equipment ID" (also called "virtual dongle")
2) The M5000 CC software, on its target machine (virtual or not), generates an "installation code", which is an encrypted code comprising the equipement ID, several machine identifiers, and application-specific data.
3) This installation code is submitted to the sales administration web site, which generates an "activation key" that determines which features may be unlocked for this system.

Note: This step can be done directly from the application by using the corresponding button

4) The activation key is entered into the M5000 CC, which decrypts it and unlocks the corresponding features.

8.12.3 GENERATION OF "INSTALLATION CODE"

The "Installation code" is an encrypted string that contains enough information on a system to allow identifying the system as unique.

The installation code must be built in the final environment of the customer (final physical server, final IP address, final virtual machine and final ESX Server, vCenter(s) or MiVoice 5000 link(s) if applicable).

Note: *In a VMWare environment, at least one ESX Server or one Virtual Center (vCenter) or one MiVoice 5000 link has to be configured before generating the "Installation Code".*

The generation of the installation code and the validation of a license code in dongle less mode are based on unique identifier given by physical machine where M5000 CC runs or by VMWare (ESX Server/Virtual Center) and MiVoice 5000 environment if M5000 CC runs in a virtual machine.

The special case where M5000 CC runs in a virtual machine, the Administrator must set up links to Virtual Center or ESX Server or MiVoice 5000 in order to generate an installation code to send to Mitel.

If M5000 CC runs in a physical machine, the Administrator can immediately generate the installation code without entering previous links.

In return, the customer will receive a license code corresponding to the keys asked and compatible with its environment.

When M5000 CC runs with a physical dongle, the customer can directly enter the license code received.

8.12.4 USABALITY

8.12.4.1 ADMINISTRATOR INTERFACE

All the licensing process is performed in the M5000 CC Administrator interface.

Parameters that have to be filled are only part of parameters used to generate the "Installation Code" (some parameters are retrieved automatically without user's interaction).

If M5000 CC runs in a virtual machine, one of the following links is required.

8.12.4.1.1 VIRTUAL CENTER

The connection to virtual centers is used with fault tolerance functionality. You can set those connections through Administrator application (see U-339).

If you do not plan to use fault tolerance functionality, do not set this type of connection.

Note: *This connection is not mandatory if you set an MiVoice 5000/ESX Server connection*

8.12.4.1.2 ESX SERVER

The connection to an ESX Server is set when fault tolerance functionality is not used and if you are running M5000 CC in an ESX Server.

The parameters to set with this kind of connection is similar to the one used with the definition of a Virtual Center (see U-339) except the Data center name that is not asked.

Note: *This connection is not mandatory if you set an MiVoice 5000/Virtual Center connection.*

8.12.4.1.3 MIVOICE 5000

The connection to an MiVoice 5000 is used when no connection to an ESX Server/Virtual Center can be established.

In order to define this kind of connection, a user name with its password and a telephony link defined in M5000 CC (see U-329) must be given.

The user name to give must be defined in MiVoice 5000 with 'XML Interface' capability (MiVoice 5000 - menu 2.3.3.3).

Once this link is defined with correct parameters, M5000 CC tries to establish it. The result will appear in black (connection is succeeded) or in red (connection is failed) in the license form.

The reason of a failure can be:

- The use name has not the 'XML Interface' capability
- The user password is wrong
- The associated telephony link is not connected
- The associated telephony link is connected but no extensions are monitored
- The associated telephony link is defined to a MiVoice 5000 that does not support 'XML capability' connection (at least R5.1 is needed)

Note: *This connection is not mandatory if you set an ESX Server/Virtual Center connection.*

The "Installation code" has to be communicated to the sales administration in order to get an encrypted license key in return.

This license key has to be introduced in the Dongle-Less M5000 CC Administrator interface to unlock features.

8.12.4.2 GENUINE SERVER DETECTION

When dongle less licensing is used, M5000 CC will regularly check that the Server is genuine and doesn't go through modifications.

The elements to which the license is bound depend on the environment:

- For a non-virtualized server: the license is bound to the physical server;
- For a virtualized server without the fault tolerance functionality: the license is bound to the MiVoice 5000 link(s) or ESX server;
- For a virtualized server with the fault tolerance functionality: the license is bound to the virtual machine and to the declared vCenter(s) or MiVoice 5000 link(s).

If modifications are detected, all features will remain unlock during a period of 1 month, but alerts will be sent to the M5000 CC Administrator to revert the M5000 CC. There are two manners to solve the issue: either revert the M5000 CC Server to original environment or ask a new license for the new installation code..

If after the alert period, the issue is not solved, all features will be locked, until the issue is solved.

8.13 SIP IVR RESOURCES

8.13.1 OVERALL DESCRIPTION

Reasons of this new resources are:

- Support of a new coding law: G-726

- Possibility to secure call handling

Remarks:

- SIP IVR resources are still using Dialogic and require one more license (IP_Call_Control) compared to IP IVR resources.

8.13.2 FUNCTIONALITY

SIP IVR resources are similar to IP IVR resources:

- They are still declared in a hunting group (SIP instead of VTI/XML IP)

- They require Dialogic HMP with same licenses that the one used with IP IVR resources (Voice, RTP_G_711, Ehanced_RTP and Conferencing) and 'IP_Call_Control' license to handle SIP messages.

- They supports same functionalities that other IVR resources

  - Playing Voice messages (with Text-To-Speech)

  - Recording conversations

  - DTMF (RFC2833 and SIP INFO)

  - Strapping

  - Useable with Conference Bridge

- They allow call encryption by using a selfsigned certificate or trusted certificate (with or not mutual authentication).

Telephny link definition is done in the Administrator (see sheet U-329)

Resource definition is done in the Administrator (see sheet U-341)

Call encryption is explained in 5.10 for PBX and in 6.6 for M5000 CC

8.13.3 CODING LAWS

The coding laws supported by SIP resources are the supported coding laws by IP resources.

- G.711 (64 kbps format) mu-law and A-law (10, 20, and 30 ms frames)

Note: *Frames of 10 ms are not supported on configurations that exceed 240 channels.*

- G.723.1 (5.3 and 6.3 kbps format) 30 ms frames (1, 2, or 3 frames per packet)

- G.729A (compatible with G.729 format) and G.729AB (compatible with G.729B format) (8 kbps format) 10 ms frames (2, 3, or 4 frames per packet)

- G.726 IP Coder

8.13.4 CIPHERING LAWS

The ciphering laws supported by SIP IVR (SIP Conf) are:

- SRTP 128 bits with HMAC80

- SRTP 128 bits with HMAC32

8.14 CALL LOG

8.14.1 OVERALL DESCRIPTION

The call log is available in the Portal through a specific directory (see Sheet U-328).

Three default call logs are created in the M5000 CC Server:

- Inbound calls : call log containing all incoming calls
- Outbound calls : call log containing all outgoing calls
- Missed calls : call log containing all incoming calls not answered

These call logs are based on an ODBC connection 'LongTermStatistics' to the SQL Server that contains the statistics database (4.7.5).

8.14.2 PUTTING INTO SERVICE

8.14.2.1 EXTERNAL REPLICATION

The use of external replication to statistics database is required (4.7.5).

This connector is based on the contents of the VoiceCallsPerAgents and ODBC link table 'LongTermStatistics' (see Section 12.3.3).

8.14.2.2 AVAILABILITY IN PORTAL

Predefined call logs (Inbound calls, Outbound calls and Missed calls) must be assigned to user's group in order to be available in Portal (see Sheet U-327).

8.14.2.3 USING IN PORTAL

Call logs are displayed and used in the Portal as other directories. They have additional columns:

- Call type
- Call time
- Remote number
- Duration
- Service

It is advisable to use a shortcut to this directory type to access them more quickly (see Sheet U-942).

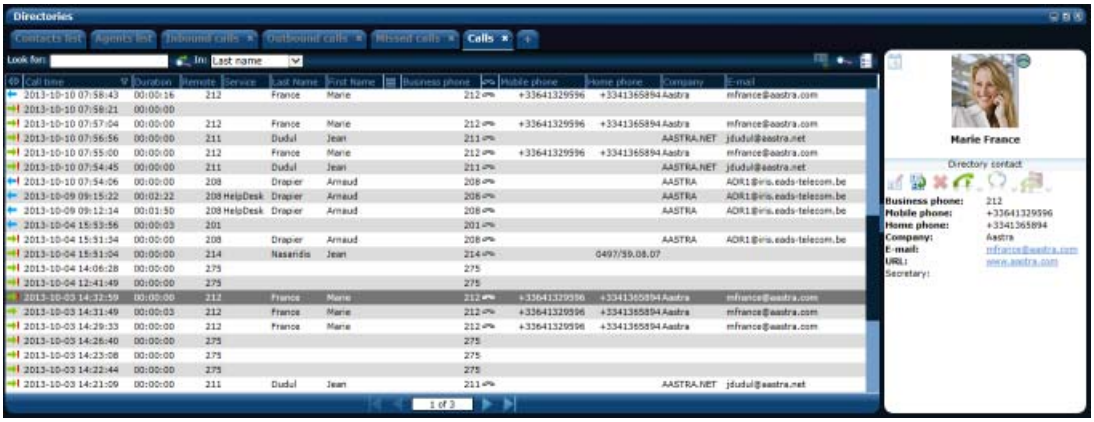


Figure 8.32 "DIRECTORIES APPLICATION FRAME WITH CALL LOG

8.14.2.4 DIALING RULES

In order to fully utilize the directories type 'Call logs', it is advisable to use dialing rules (see Sheet U-333).

Indeed, the remote number displayed is the number sent by the PBX and it may be needed to modify it before use.

8.15 MISSED CALLS LOG 'SERVICE'

8.15.1 OVERVIEW

The missed calls logs 'Service' record incoming calls to a service, which have not been treated properly. They are distinguished from other call logs that record specific calls for each agent.

These logs are accessible in the same way as other directories and call logs, using the Web application 'Directory' (see sheet U-328)

The missed calls logs 'Service' include a recall management feature (see page U-943)

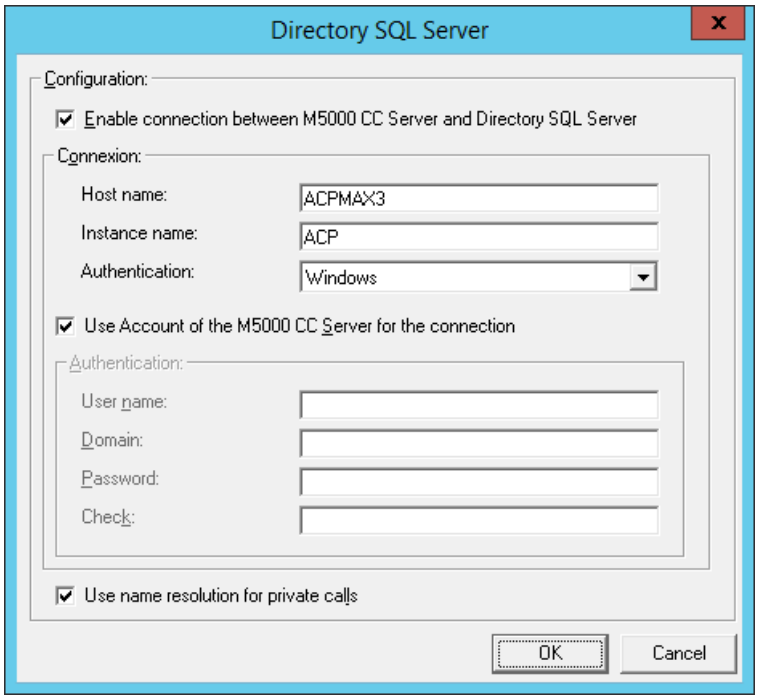
Missed call logs 'Service' use tables and stored procedures in the database '**ACP**' of the SQL Server instance '**M5000 CC**'.

8.15.2 ENABLING THE FEATURE

you can create and configure missed calls logs 'Service' with the 'Administrator' application

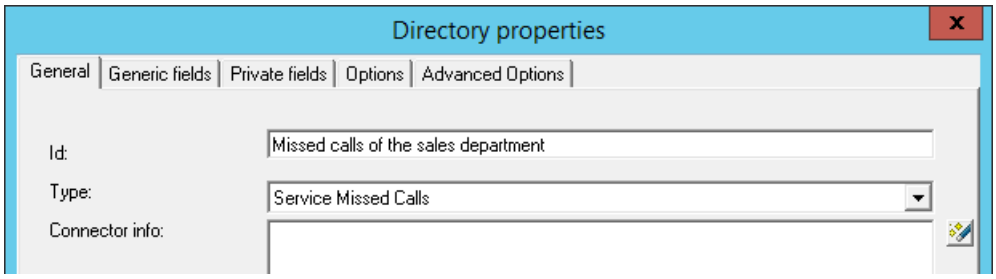
8.15.2.1 PREREQUISITES

Before defining a missed calls log 'Service', it is first necessary, enable SQL directory server. To do this, select the menu '**View / Directory SQL Server**' and enable the connection:

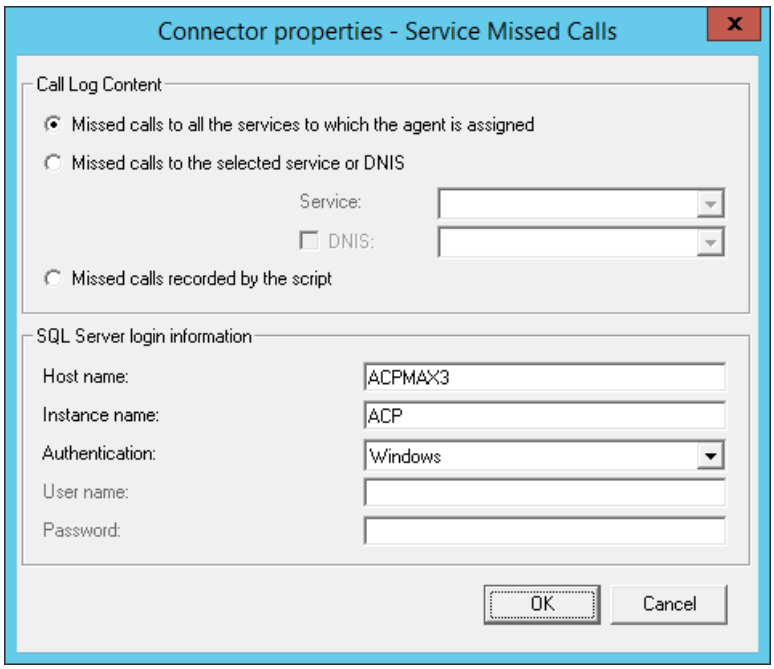


8.15.2.2 CREATING AND CONFIGURING

Select the menu '**View / Directories**'. At this level, you can add a directory or a call log. In the case of a missed calls log 'Service', select the type '**Service Missed Calls**':



Then you have to click the button  to access the configuration settings.



One can choose between three types of logging:

- Missed call to all the services that the user is an agent
- Missed call to a selected service and optionally a selected DNIS
- Missed call recorded by the script

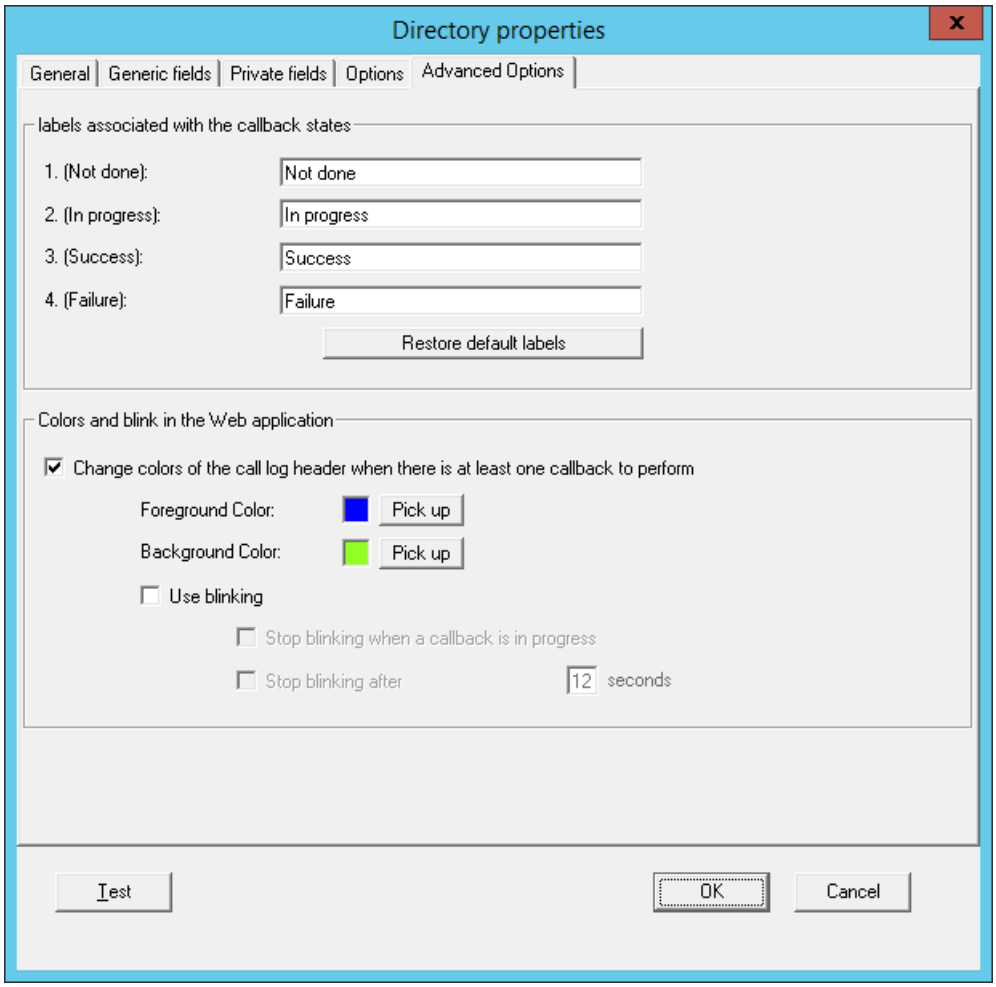
Note: For the first two modes, logging is automatic. In the latter mode, logging must be done explicitly by the script, as shown below.

The SQL Server login information is populated with default values that correspond to the SQL Server instance '**M5000 CC**' automatically created when installing the software.

These parameters reference, if necessary, another SQL Server instance. In this case, we must ensure that this instance contains a database 'ACP' with a compatible structure (tables and stored procedures).

8.15.2.3 ADVANCED OPTIONS

The administrator can set parameters that affect how the missed calls log will be displayed in the window of the WEB application ’**Directories**’. The tab '**Advanced Options**' from the properties dialog box provides access to these settings:



You can define a custom label for each of the four recall management states. The default labels for each of these four states are:

- ’Not done’
- ’In progress
- ’Success’
- ’Failure’

The options of colors and blink, control the visual appearance of the Quick Access tab to the call log into the 'Directories' WEB application. The text that appears in this tab is the name assigned by the agent during the creation of the Quick Access tab, followed by the number of entries in this log between parentheses.

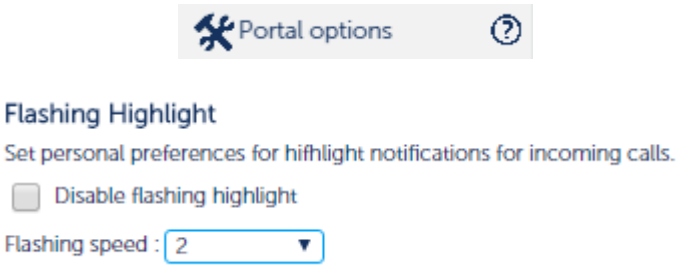
If the color change is checked then when the log contains at least one entry, the tab will be displayed with the configured colors. It will resume normal colors when the log is empty.

One can choose to cause the blinking of the Quick Access tab to the call log. The blinking is triggered only when the log is not empty. One can set additional conditions for the blinking stops:

- stop blinking when a recall is in progress
- stop blinking after expiration of a delay in seconds

Regardless of these conditions, the blinking stops when the tab is selected (call log visible).

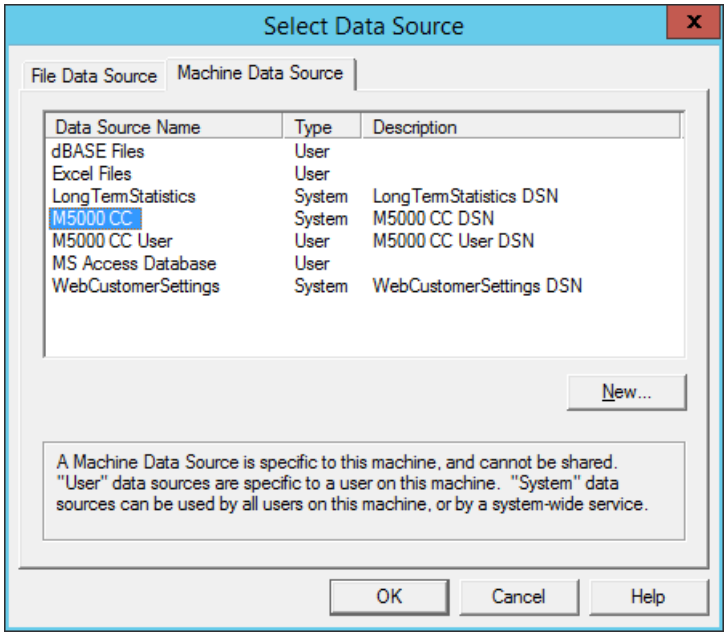
The blinking frequency reflects the choice of the agent defined in the 'Portal Options':

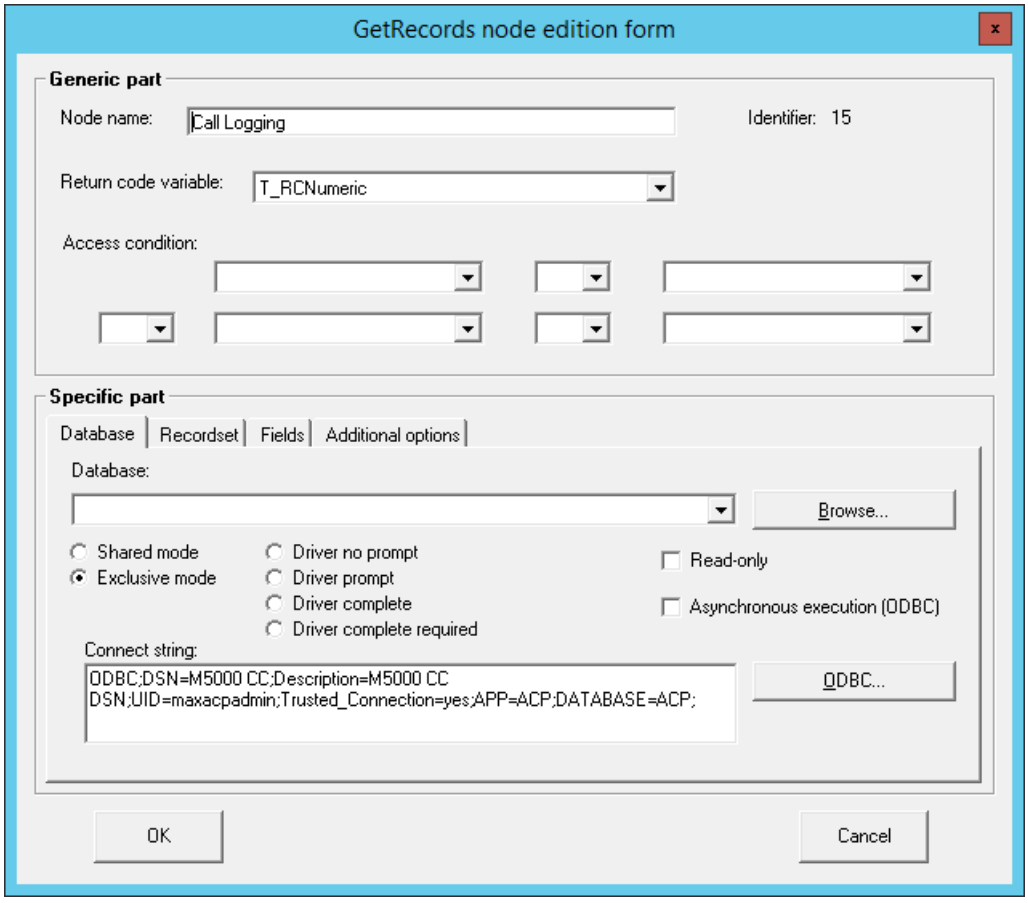


8.15.3 LOGGING IN FROM A SCRIPT

If the missed call log has been defined with '**Missed Calls recorded by the script**' then logging should be done explicitly in the service scenario. For this we must fit into the scenario a node whose type is '**GetRecords**', configured as follows:

The ODBC source '**M5000 CC**' must be selected to obtain the 'connection string' to the database:

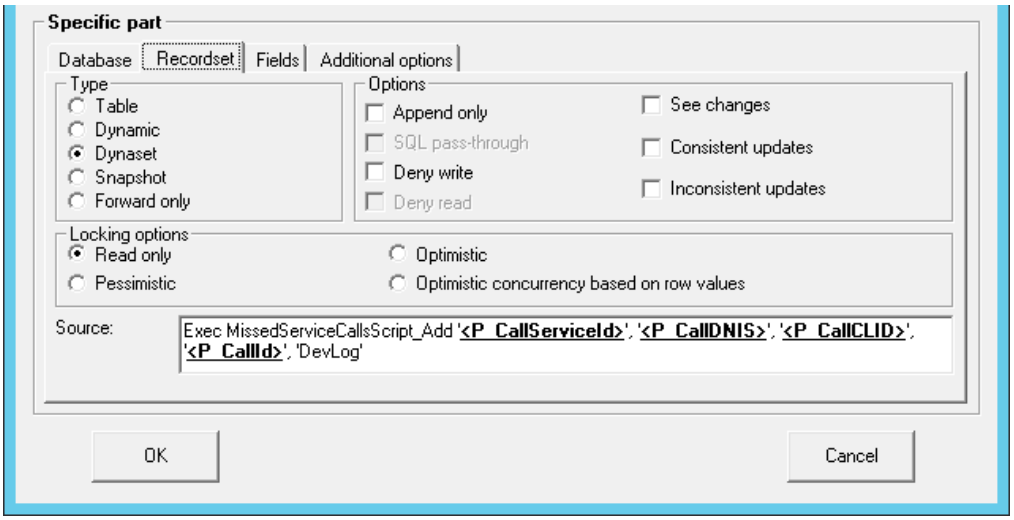




Then on tab '**Recordset**', give the following command:

```
Exec MissedServiceCallsScript_Add
'<P_CallServiceId>','<P_CallDNIS>','<P_CallCLID>','<P_CallId>','DevLog'
```

In this command, the last parameter is the name of the missed call log concerned. Its type must be '**Missed Calls recorded by the script**'



8.15.4 NIGHT PROCEDURE

During the night of procedure, log entries that are in the state '**Success**' or '**Failure**' and whose last change (identified through field '**CallTime**') dates back more than a certain configurable period, are automatically deleted.

By default, entries in the state '**Success**' are deleted after one week.

By default, entries in the state '**Failure**' are deleted after one month.

It is possible to control the lifetime of the entries in the missed calls logs 'Service' using the following parameters in the registry:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Dialog Systems\Agora\Night Procedure
LifeTime_MissedServiceCalls_CallbackSuccess = 7
LifeTime_MissedServiceCalls_CallbackFailed = 31
```

8.16 SERVICE CONFIGURATION FROM PORTAL

A new way to configure some script configuration has been added in the product in order to facilitate the service script execution.

Thanks to some new basic objects defined in the M5000 CC Service Manager and a new Web application available in the M5000 CC Portal, any users having Service Manager rights are able to change script behaviour in real time without the need to recompile any script.

These are divided as followed:

- Service Profiles
- Configuration Variables
  - String, Numeric and Date
  - Activities
- Sounds
  - Standard
  - Exceptional
- Transfer Profiles

The main entry is the Service Profile.

Each call in the system is associated to a default ‘Service Profile’ and this will set the associated Configuration Variables, sounds and Transfer Profiles

Note: *Activities are not dependent of any Service Profiles*

The script is able to change the current Service Profile by changing the corresponding Intrinsic Variable (CallServiceProfileName/CallServiceProfileId).

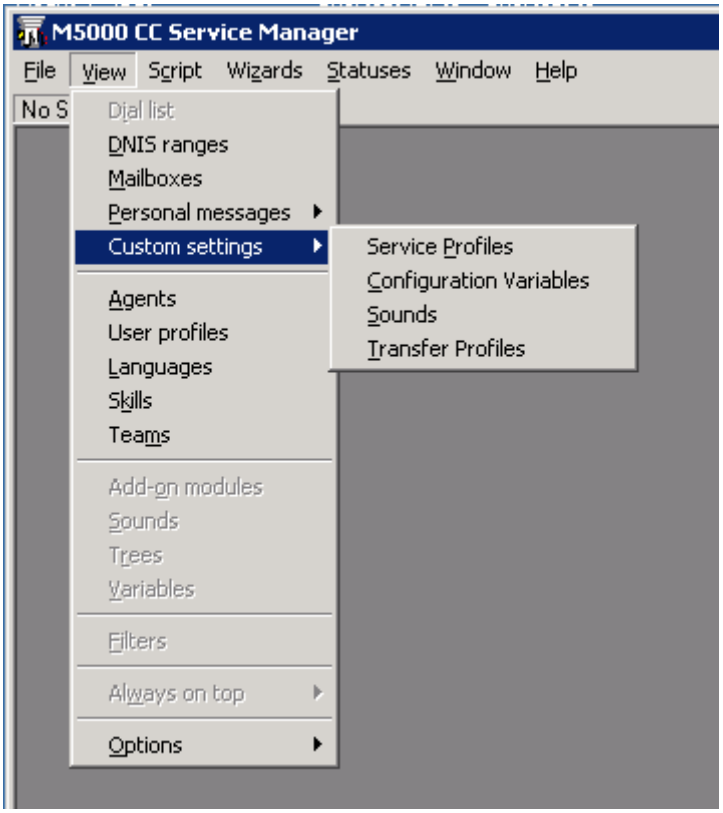
The definition is done in Service Manager application

The value assignation is done in the Customer Settings web application in the Portal.

This web application allows to define some calendar settings too (Closed days/ Opening Hours).

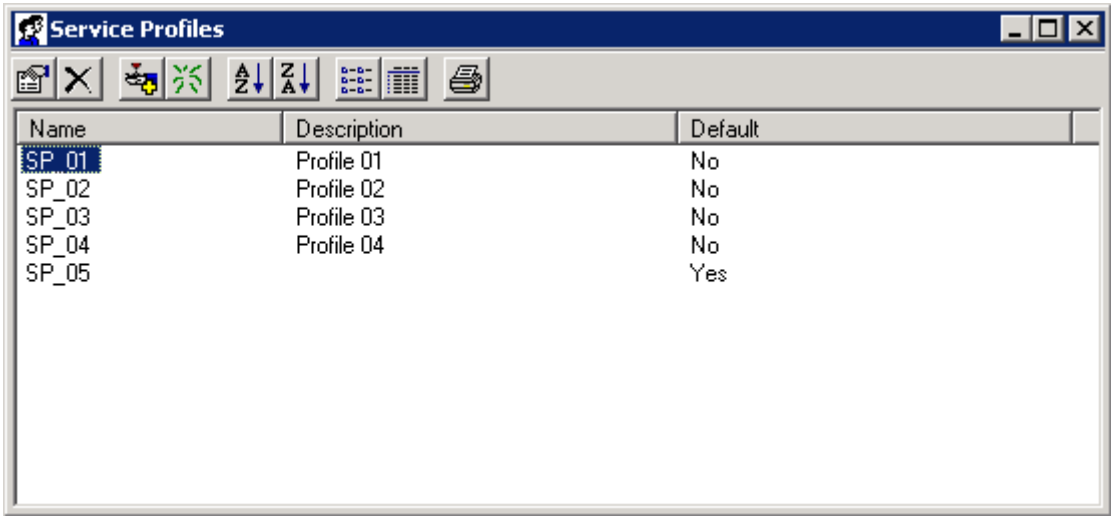
8.16.1 SERVICE MANAGER

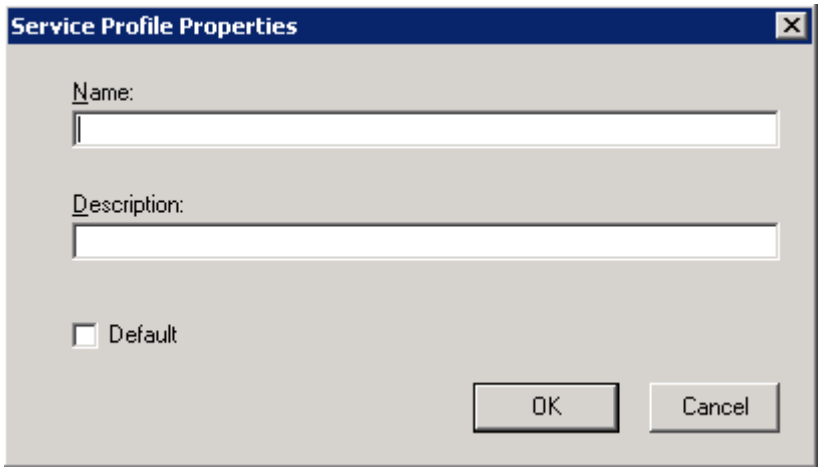
There’s a new menu in Service Manager application “View/Custom Settings” containing sub menu to all required stuff to define in order to be able to change in real time the script behaviour.



8.16.1.1 SERVICE PROFILES

All script customization is associated to a Service Profile (except Activities). When the call is set to be used with a Service Profile, the configuration variables (String, Numeric and Date), the sounds and the Transfer Profiles have their own values.



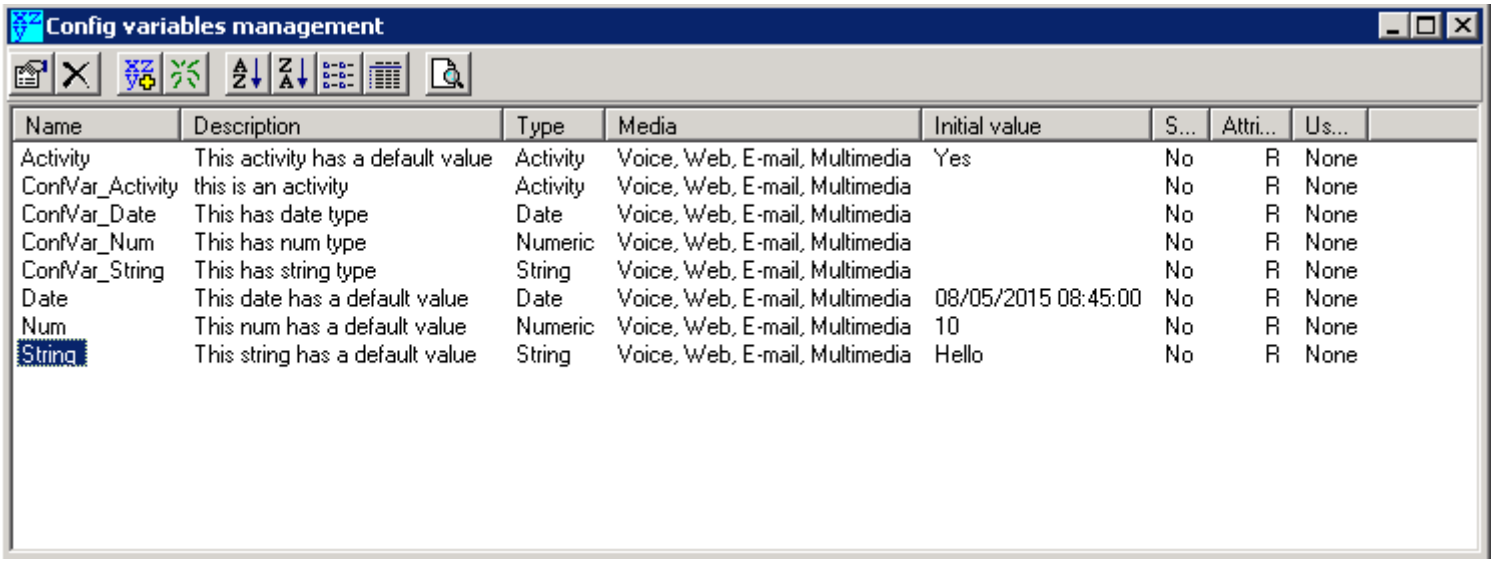


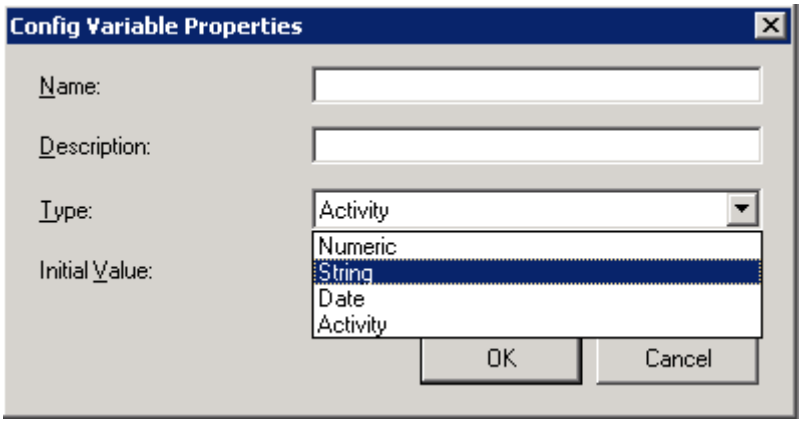
If the Service Profiles is changed during the life of the call, all dependent values are also changed.

8.16.1.2 CONFIGURATION VARIABLES

The variables represent a variable type in the script (prefix “C_”). There have the following type : String, Numeric and Date.

Such variables are usable in the scripts like any other variables but the main difference is the corresponding value is linked to the current Service Profile of the call.





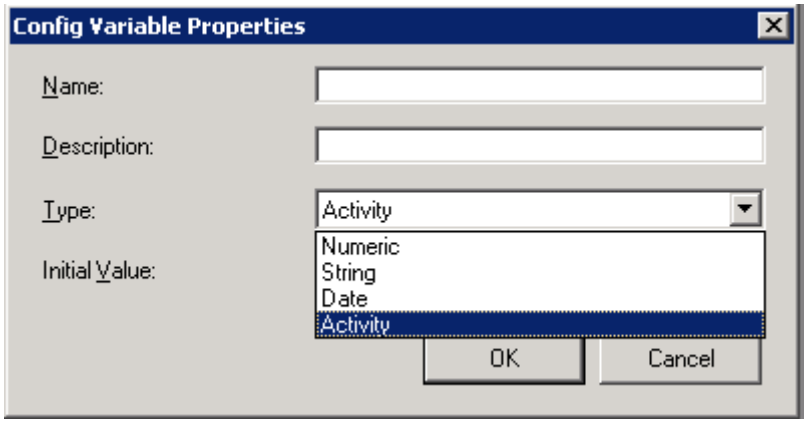
If the variable value associated to a Service Profile is changed then the effect will be directly visible in all calls

using the Service Profile at the next node execution.

8.16.1.3 ACTIVITIES

The menu Configuration Variable allows defining Activity variables.

An Activity Variable is a special variable used to activate some script part (Boolean).

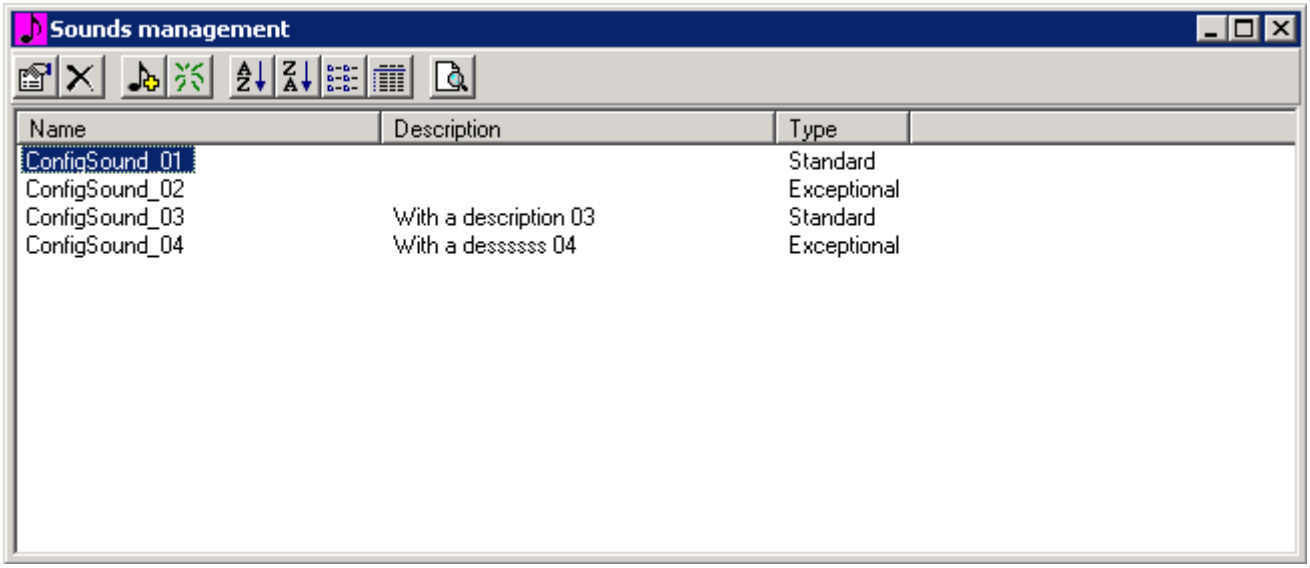


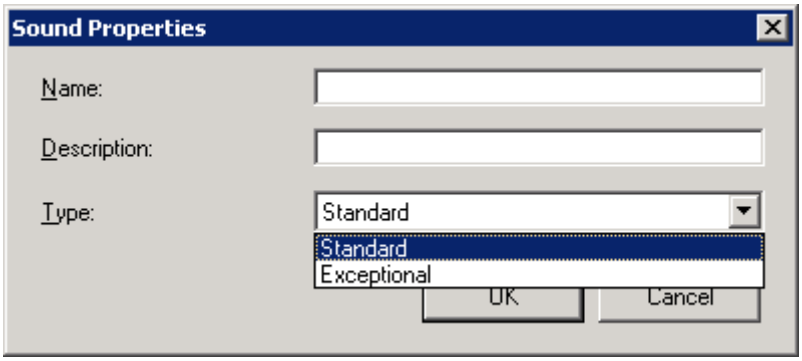
They can also be used with an end validity date. If a such date is defined (not in the Service Manager but in the Web Customer application), the corresponding value will be valid until this end date. After this end validity date, the corresponding value will always return ‘false’.

These variables are not Service Profile dependent

8.16.1.4 SOUNDS

The sounds associated to Service Profiles are a new type of sound in the product allowing to the Web Customer Settings application to change at any time the associated sound to play.





Such sound can be

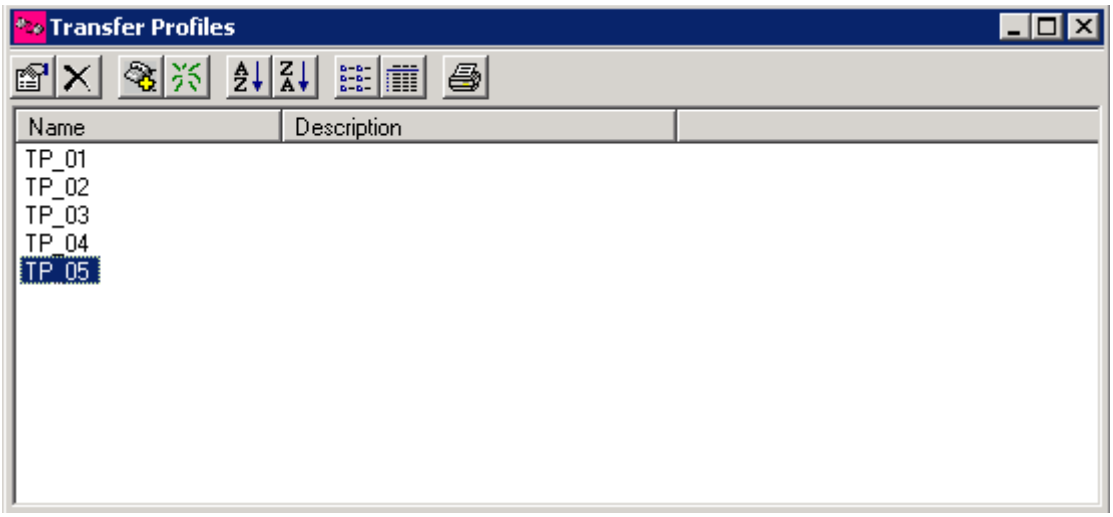
- Standard: this is sound valid at any time
- Exceptional: this is a sound with an end date validity

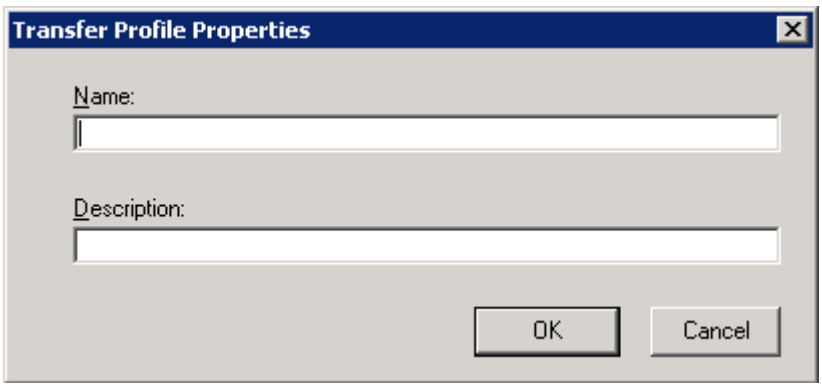
When there are used in a PlayVoiceMessage node (new option), the sound is played in all available languages in the call.

If an exceptional sound is defined with an end date validity (not in the Service Manager but in the Web Customer application), the corresponding sound will be valid until this end date. After this end validity date, the corresponding sound will not be played.

8.16.1.5 TRANSFER PROFILES

Transfer profiles associated to Service Profiles are uses to quickly customized some TransferCall node properties





Transfer Profile properties are not defined in the Service Manager but in the Web Customer application.

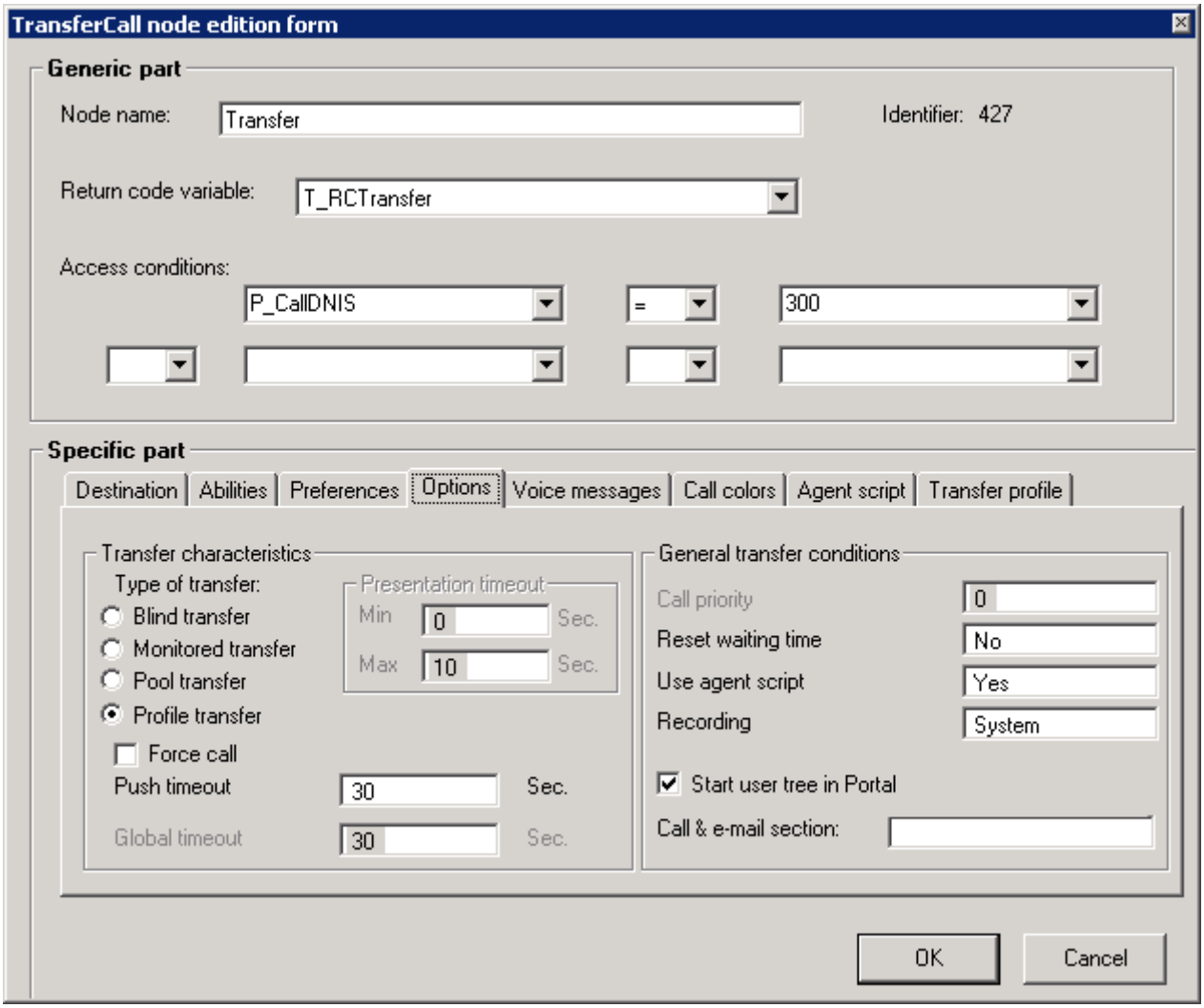
Following Transfer node properties are customizable

- Global Timeout
- Presentation Timeout
- Minimum Presentation Timeout
- Transfer type (Monitored, Blind or Pool)
- Call Priority

If a transfer profile property value associated to a Service Profile is changed then the effect will be directly visible in all calls using the Service Profile at the next TransferCall node execution.

8.16.2 TRANSFERCALL NODE

A new option is available in the TransferCall node in order to be able to associate it with the service call profile.



By choosing ‘Profile transfer’, all corresponding properties are disabled.

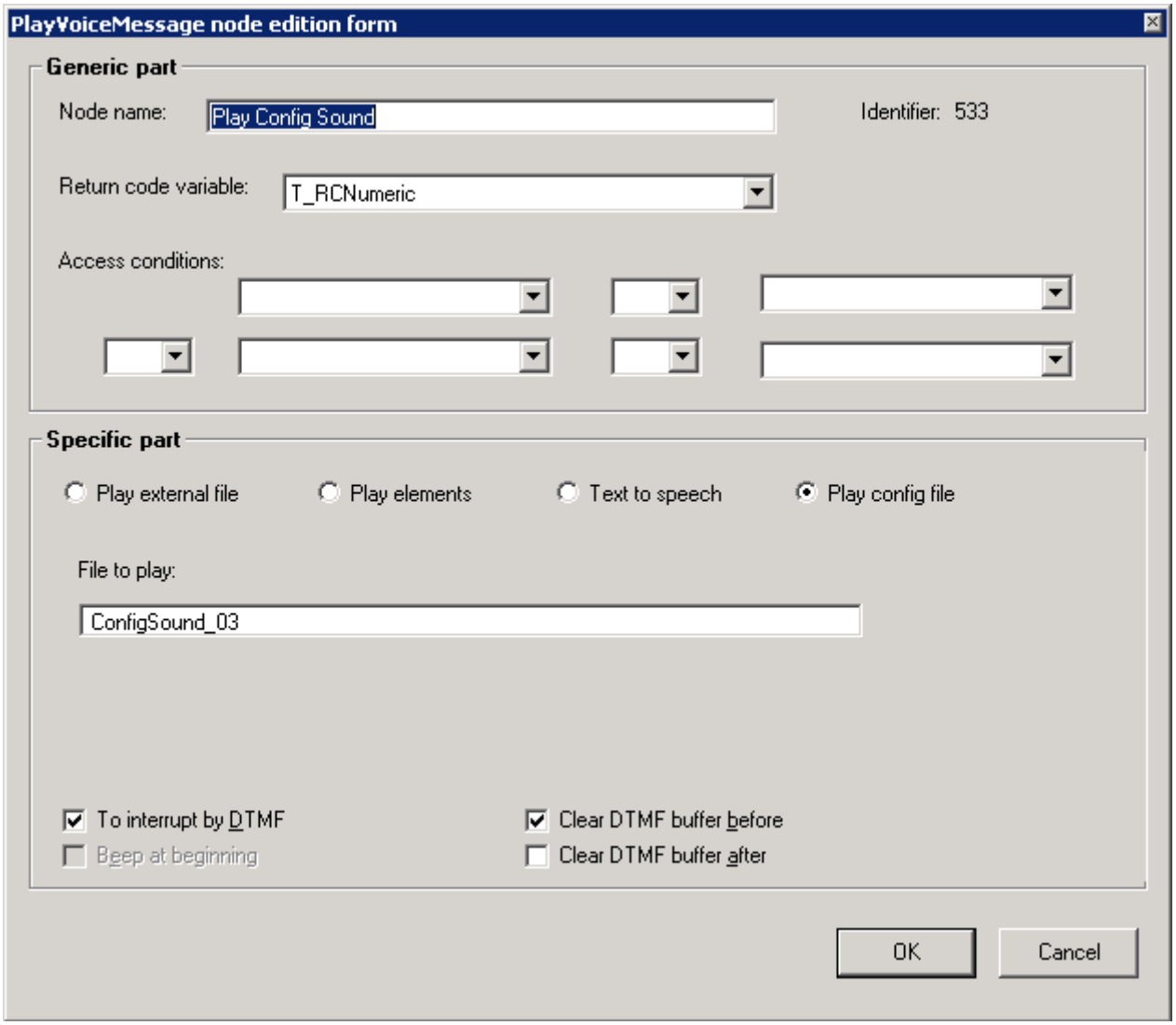
- Global Timeout
- Maximum Presentation Timeout
- Minimum Presentation Timeout
- Call Priority

The real transfer type will be set from the corresponding Transfer Profile property.

Transfer type (Monitored, Blind or Pool)

8.16.3 IVR PLAY NODE

A new option is available in the PlayVoiceMessage node in order to be able to associate it with the service call profile.



By choosing 'Play config file', the associated sound to the service profile is played in all available languages (similar to play elements).

8.16.4 INTRINSIC VARIABLES

8.16.4.1 SERVICE PROFILES

Two new read/write intrinsic variables are available.

- CallServiceProfileId
- CallServiceProfileName

These variables are initialized with the default service profile defined in the service.

They can be changed at any time by the script (assignation node).

Any change with have an impact on the associated

- Configuration variables (String, Numeric and Date)
- Sound
- Transfer profiles

8.16.4.2 CALLER INFORMATION

Some new intrinsic variables are available related to caller information

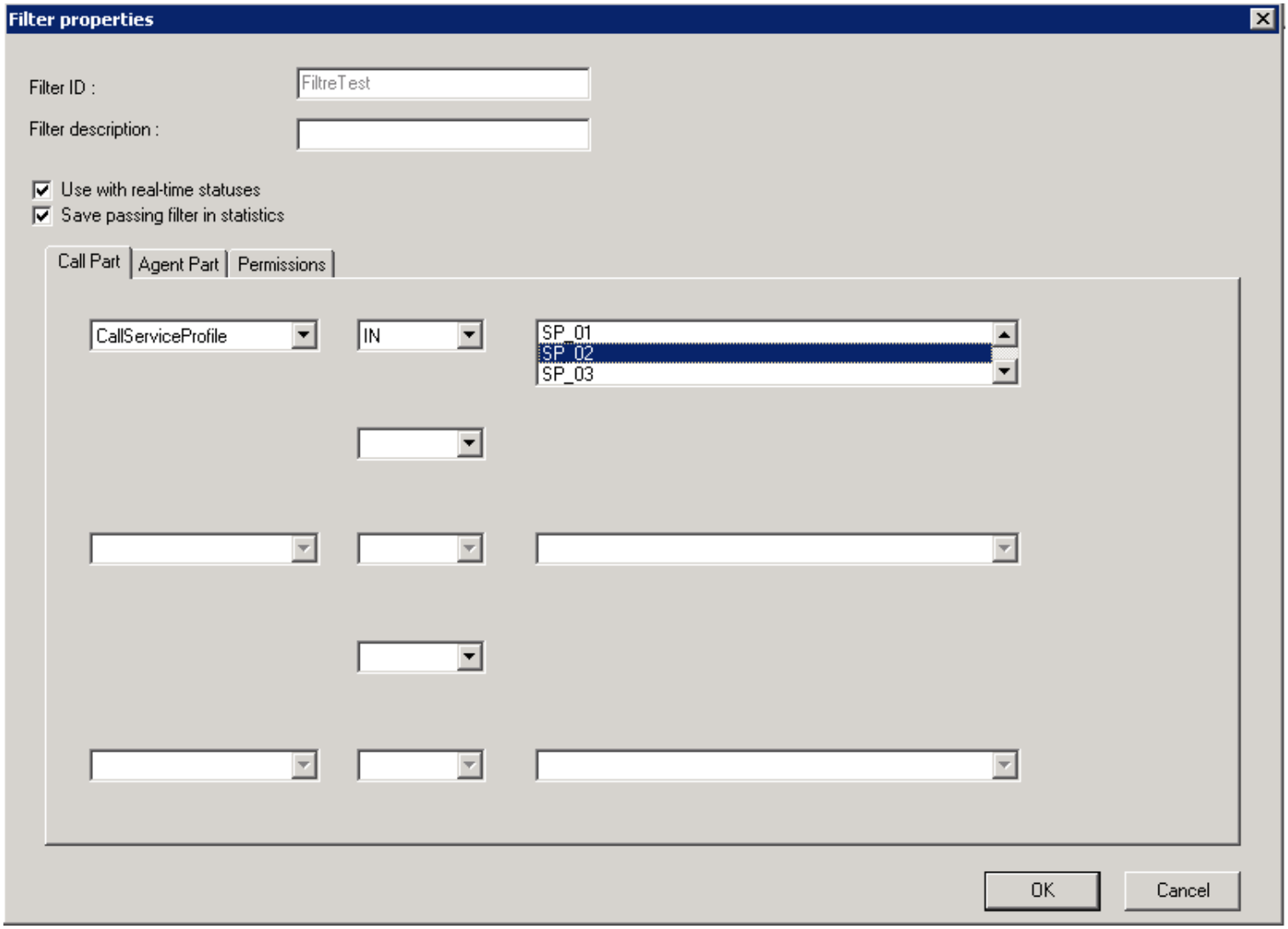
Tableau 9: Caller Information

NAME	TYPE	MEDIA	INITIAL VALUE	STATISTICS	ATTRIBUTES	USER DISPLAY
CallerCompany	String	Voice	-	No	R	None
CallerEMailAddress	String	Voice	-	No	R	None
CallerOfficePhoneNumber	String	Voice	-	No	R	None
CallerMobilePhoneNumber	String	Voice	-	No	R	None
CallerHomePhoneNumber	String	Voice	-	No	R	None
CallerPrivateFields	Set	Voice	-	No	R	None
CallerPrivateFieldValue1	String	Voice	-	No	R	None
CallerPrivateFieldValue2	String	Voice	-	No	R	None
CallerPrivateFieldValue3	String	Voice	-	No	R	None
CallerPrivateFieldValue4	String	Voice	-	No	R	None
CallerPrivateFieldValue5	String	Voice	-	No	R	None
CallerPrivateFieldValue6	String	Voice	-	No	R	None
CallerPrivateFieldValue7	String	Voice	-	No	R	None
CallerPrivateFieldValue8	String	Voice	-	No	R	None
CallerPrivateFieldValue9	String	Voice	-	No	R	None
CallerPrivateFieldValue10	String	Voice	-	No	R	None
CallerPictureURL	String	Voice	-	No	R	None

Theses variables complete all information related to a contact saved in the product.

8.16.5 FILTERS

The call part of a defined ‘Filter’ contains a ‘Service Profile’ criteria.


Filter properties
Filter ID :
FiltreTest
Filter description :
Use with real-time statuses
Save passing filter in statistics
Call Part
Agent Part
Permissions
CallServiceProfile
IN
SP_01
SP_02
SP_03
OK
Cancel

9 ADVANCED CONFIGURATION AND START-UP

9.1 OVERVIEW

This chapter indicates the different associated tasks:

- Configuring the M5000 CC applications required to start up an Mitel 5000 Contact Center
- Starting the applications and their configuration in form of a "C" sheet (see Section 9.4).

9.2 INSTALLATION

9.2.1 GENERAL INSTALLATION

See the beginning of this online help to know:

- The installation prerequisites
- The Dialogic® card hardware and software installation
- How to install the M5000 CC software (M5000 CC Server, M5000 CC Media Server, M5000 CC Media Server, M5000 CC Administrator, M5000 CC Service Manager, M5000 CC User, M5000 CC Wall Display, M5000 CC User API, User ActiveX Control) and add-on software (Snapshot, Debug viewer, etc.).

Also refer to the beginning of this online help for information on how to update, repair or remove installed software (Maintenance Mode).

9.3 CONFIGURATION

9.3.1 CONFIGURING THE M5000 CC MEDIA SERVER

The purpose of this section is to configure the M5000 CC Media Server to adapt it to the client configuration.

This configuration will be carried out via the M5000 CC Administrator application (see SheetU-300).

Using the media server configuration windows according to the media

The M5000 CC Media Server application was developed to support voice messages, e-mails and web sessions. These three types of media can either be handled separately or by the same application, depending on the network configuration and the call load. Configure the M5000 CC Media Server as detailed below in order to support a given type of medium:

- Voice calls (with and without IVR):

  Define the resources in the “Resources” window of the media server configuration in the Administrator application, according to the number and type of voice resources you wish to define. For each resource, select a particular profile from the list submitted to you.

  - Solution with IVR: define the Dialogic card resources in the M5000 CC Media Server configuration resources window and select the profile "IP for IVR" or "Analogue" (depending on whether or not the resource is using the voice over IP technology) on the “Resource profile” list.
  - Solution without IVR: define the incoming call pits in the media server configuration “Resources” window in the M5000 CC Administrator application and select the “Call pits” profile on the “Resource profile” list.
- E-mail:
  - There is no specific initialization for e-mail session management; so that all started M5000 CC Media Server applications are capable of handling such sessions (see § 9.3.5).
- Web sessions:
  - Enter the "IP address to use for web functions" and "IP port to use for web functions" properties of the media server configuration in the Administrator application, to initialise web session management (see Section 9.3.6).

9.3.2 CONFIGURING AUTOSTART MODE (OPTIONAL)

The automatic start-up procedure is based on Windows Services technology. One of the advantages of a Windows NT Service is that it can be automatically started when the operating system boots and remotely managed by an administrator. Only restarting the M5000 CC Server, M5000 CC Media Server and M5000 CC Report Server applications is automated.

Refer to the Mitel 5000 Contact Center Installation Manual, reference **PS9728**, for how to configure automatic start:

- Configuring Windows services,
- Configuring automatic start-up in M5000 CC Media Server (parameters ***{Maximum time for start-up in service(s) mode}*** and ***{Maximum time for stop in service (s) mode}*** in the **"Media server properties"**

window (see Sheet U-341).

- Configuring automatic start via the M5000 CC Administrator application:
  - Defining remote Media Server(s): see SheetU-341.
  - Configuring the automatic start-up parameters: see Sheet U-312 {Automatic start-up} tab:,
  - Configuring the M5000 CC Server shutdown parameters: see Sheet U-312 {Server Shutdown} tab:.

Note: The DCOM automatic start configuration can be performed automatically during the general installation using the "setup" programme (see installation manual).

9.3.3 CONFIGURATION OF THE EXTERNAL REPLICATION OF STATISTICS

9.3.3.1 EXTERNAL REPLICATION DATABASE

The statistics are replicated in an external database (see definition in Section 1.4) instead of (or in addition to) the standard database "LongTermStatistics.mdb" (see definition in Section 1.4). This external database has to be defined by the administrator.

Using an external database (used alone or with a standard base) presents certain advantages compared with the standard base:

- There are three types of external database: Access, Oracle or SQL Server 2000. This gives you the possibility of defining the fields that need to be replicated. The administrator can choose only the fields he needs.
- Information from different sources can be grouped in a single table of the external database (e.g. all information concerning the calls of different Services can be saved in a single global table).

If the administrator decides to use an external database, he has to create his own reports on it. The M5000 CC “Report” function cannot be used with an external database. He also has to manage the back-up and the archiving of this database. Furthermore, all the global variables with the "Save in Statistics" option checked are going to be saved in StatBuffer, but the administrator has to specify in the replication definition that he wants them to be replicated in the external database.

The administrator can work with different “Configuration databases” (see definition in Section 1.4) but he or she cannot modify the one in “Production” mode (see definition in Section 1.4). The administrator can switch at any time from the standard statistics to an external database and vice versa. He can also use the two types of replication simultaneously.

Note: Refer to the § 8.4.2.3 for more information about the roles of the Statistics Builder application in the external replication.

9.3.3.2 CONFIGURATION OF THE EXTERNAL REPLICATION

To configure external replication, proceed as follows:

- Configure a DSN (system data source) (see section 9.3.3.3),
- Select an external statistics database (see SheetU-312, ***{Statistics}*** tab),
- Managing replication in an external database (see Sheet U-320).

Note: In case of errors in replicating statistics, refer to section 11.5.

9.3.3.3 DEFINING AND CONFIGURING A DSN

The DSN is used for external replication.

Note: To access the external database, the ODBC is used to connect to a database. This model uses a DSN to establish connection to the external database. The DSN can be defined in the Windows Control Panel by clicking on the Data sources (ODBC) icon. The required driver to be connected to the database has to be specified, as well as the path to this database. In some cases, a user ID, name and password may be required.

To define a DSN, click the icon Data Sources (ODBC) 

in the Windows Control Panel.

The DSN must be defined on a PC running the Statistics Builder application.

In the **"ODBC data sources administrator" window:**

- Click on the **{DSN system}**tab, then
- Click on **[Add...]** to define a new system data source (DSN).

In the **"Create a new data source" window:**

- Select in the ***{Name}*** column a driver matching the database you wish to connect to, then click ***[End]***.

The following drivers have been tested for the external database:

- Microsoft Access driver (*.mdb) used to connect to an Access 2000 database
- Oracle ODBC driver for connecting to an Oracle database
- SQL Server for connecting to an SQL Server 2000 database.

Replicating to Access

To replicate the database in an external Access database, use “Microsoft Access Driver (*.mdb)”:

- Fill in the ***{Data source name}*** field. This name is used by M5000 CC to connect to the external database.
- Click the ***[Select...]*** button in order to enter the name of the external database that the administrator wants to use.

Replicating to Oracle

To replicate the database to an Oracle external database, use "Oracle ODBC Driver":

- Fill in the ***{Data source name}*** field. This name is used by the M5000 CC to connect to the external database.
- In the ***{Service Name}***field, type the name of the external database.
- With Oracle, you must also complete the ***{UserID}*** field.

Replicating to SQL Server 2000

To replicate the database to an external SQL Server 2000 database, use "SQL Server":

- Fill in the ***{Name}*** field (e.g. DSNSqlServer). This name is used by the M5000 CC to connect to the external database.
- Fill in the ***{Description}*** field (e.g. Agora replication db). This name is used by the M5000 CC to connect to the external database.
- Then choose, in the ***{Server}*** scrolling menu, the name of the SQL server containing the replication target database is installed.

To enable the Statistics Builder application to connect to the SQL server, you can:

- either use the NT account used to access the machine running the Statistics Builder application,
- or define your own users and passwords on the level of the SQL server.

9.3.4 CONFIGURING THE VOICE MEDIA

M5000 CC offers two VOICE solutions:

- the one called Solution "with IVR" (interactive voice server) included
- the other Solution "without SVI".

To to process voice calls properly with M5000 CC, we recommend configuring the following items, in the sequence indicated:

Tableau 9.1 VOICE MEDIA CONFIGURATION TASKS

SOLUTION WITH IVR	SOLUTION WITHOUT IVR
Install the Dialogic card or HMP drivers (see Installation Manual)	
Configure the PBX with IVR (see § 9.3.4.1.1)	Configure the PBX without IVR (see § 9.3.4.2.1)
Configure the Voice media in the M5000 CC Administrator application (see Sheet C-310).	
Configure the M5000 CC Media Server (see § 9.3.1)	
Configure the Voice media in the M5000 CC Service Manager (see Sheet C-410)	
Network the M5000 CCs (see Section 9.3.4.3.1).	
	Reject 21 (see § 9.3.4.2.2)

The VTI XML configuration and CSTA configuration of the various PBX releases applicable to an Mitel 5000 Contact Center are described in the installation manual.

9.3.4.1 CONFIGURATIONS SPECIFIC TO THE SOLUTION WITH IVR

The configurations specific to the Solution with IVR are limited to:

- The installation of Dialogic cards or HMP licences (see installation manual)
- The PBX configuration specific with IVR (see § 9.3.4.1.1),
- The configuration of the M5000 CC Media Server (see § 9.3.1).

9.3.4.1.1 CONFIGURATION OF PBX SPECIFIC WITH IVR

Principle

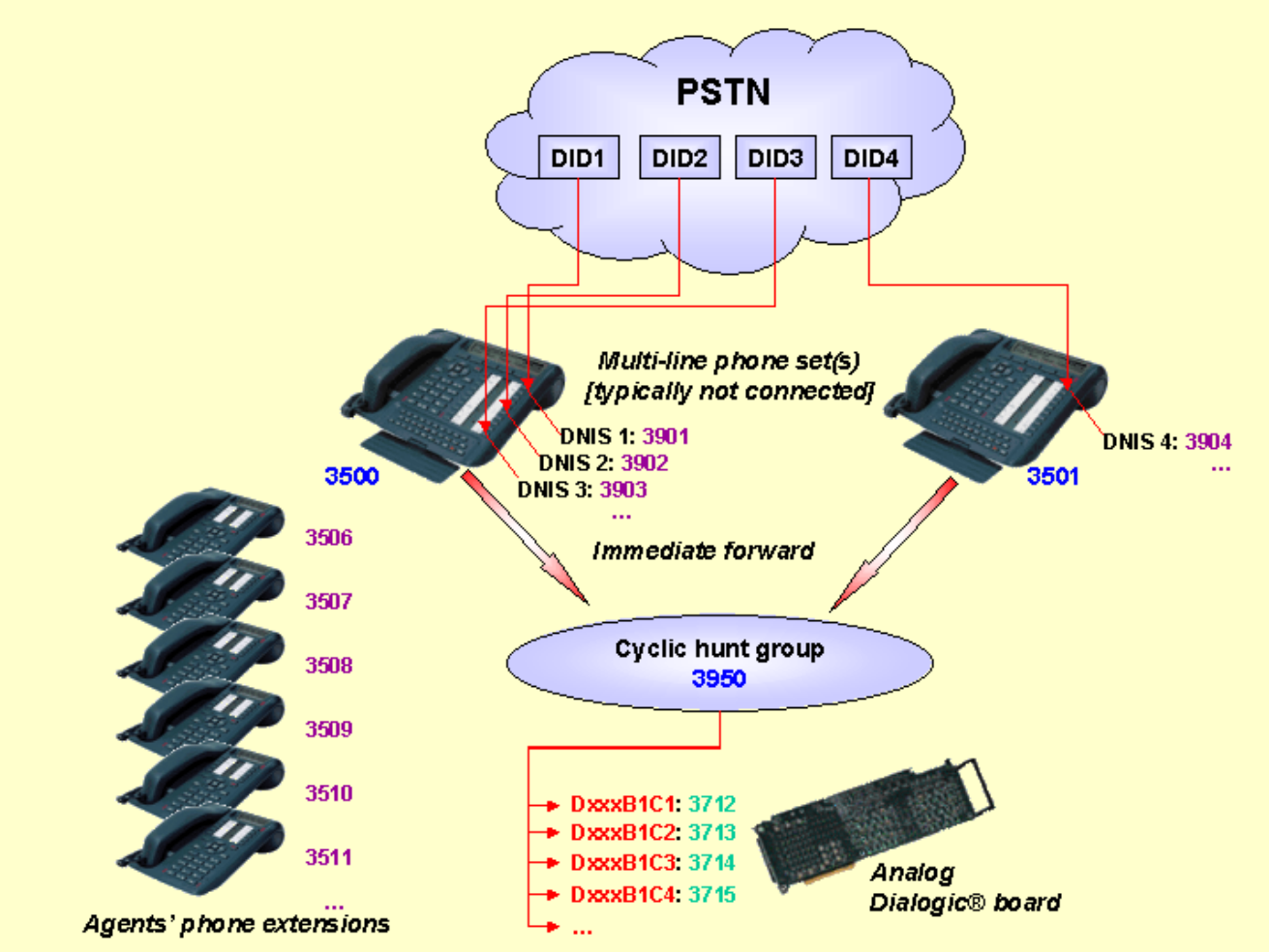


Figure 9.1 SYNOPTIC OF THE PBX CONFIGURATION WITH IVR

Caption of the colors in figure:

- The items appearing in **blue** must be defined in the PBX.
- Items appearing in **magenta** have to be defined in the M5000 CC Administrator application and in the PBX.
- The items displayed in **red** must be defined in the administrator, in the Media Server menu.
- The items displayed in **green** must be defined in the administrator, in the Media Server menu and in the PBX.

Note: The specific CSTA detailed configuration of the various versions of PBX applicable to a Mitel 5000 Contact Center is described in the installation manual.

9.3.4.2 CONFIGURATIONS SPECIFIC TO THE SOLUTION WITHOUT IVR

The configurations specific to the Solution without IVR are limited to:

- The specific PBX configuration without IVR (see § 9.3.4.2.1)
- The configuration of the M5000 CC Media Server (see § 9.3.1)
- The configuration of the "Reject21" feature (see § 9.3.4.2.2).

9.3.4.2.1 PBX CONFIGURATION - SOLUTION WITHOUT IVR

Principle

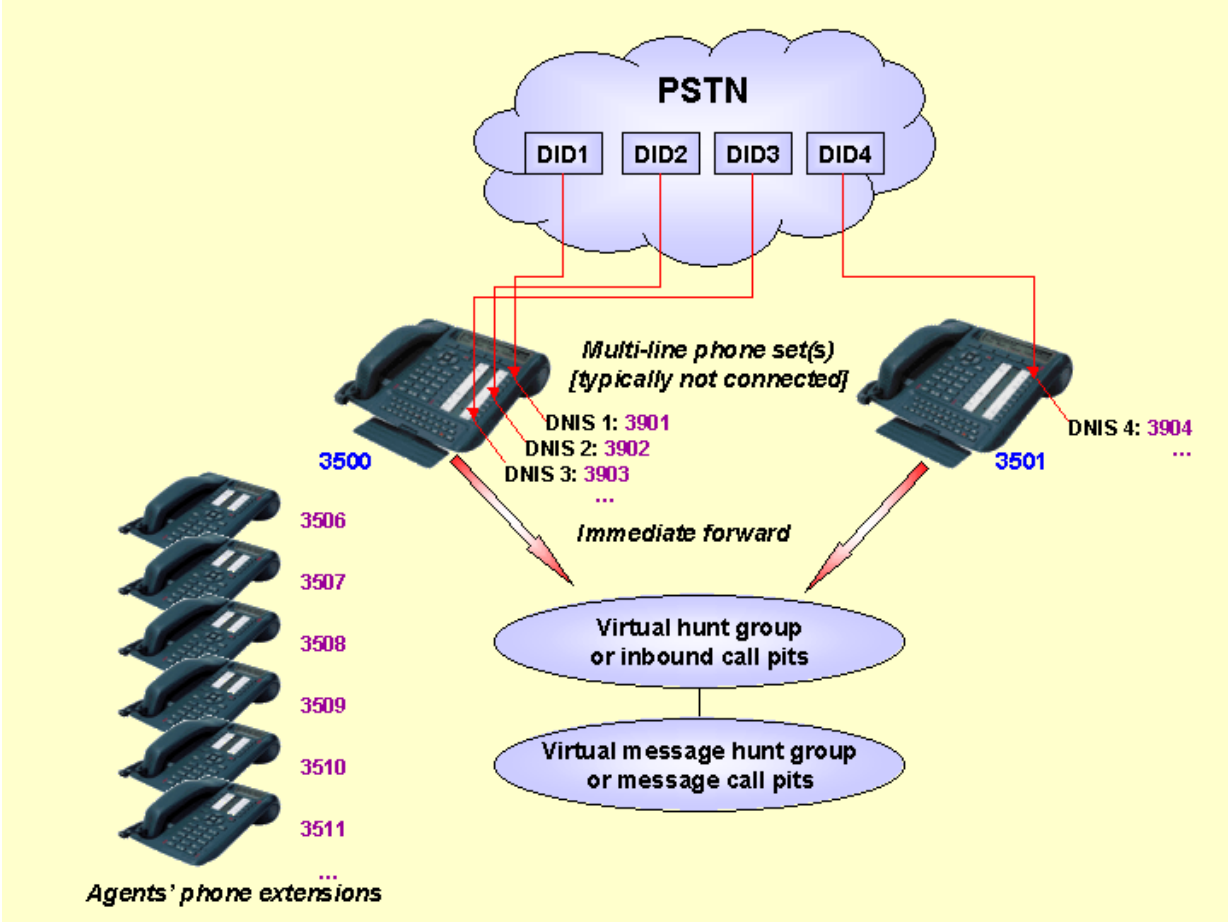


Figure 9.2 SYNOPTIC OF THE PBX CONFIGURATION WITHOUT IVR

Caption of the colors in figure:

- The items appearing in **blue** have to be defined in the PBX.
- Items appearing in **magenta** must be defined in the M5000 CC Administrator application and in the PBX.
- The items displayed in **red** must be defined in the administrator, in the Media Server menu.

Note: The specific CSTA detailed configuration of the various versions of PBX applicable to a Mitel 5000 Contact Center is described in the installation manual.

There are 2 types of call pits :

- Extensions are defined in the PBX as digital telephone sets used by M5000 CC to receive incoming calls: these call pits are called **incoming call pits** or **input call pits**.
- The other Call pit is programmed in the PBX, using a PBX card (CCI for the PBX or CCS for M6550), so that the usual tone used to play back a voice message during a call is assigned to it. It is mandatory to use multi-companies function to declare several message phones. Those call pits will be named call pits for messages.

Procedure:

1 Inbound call pits configuration

- Extension phones must have the right "use as virtual set allowed" to YES. The telephone should not be

connected.

- Incoming calls pits have as many "Monitor your multikey number" keys programmed as there are inbound calls to be processed simultaneously.

2 Call pits for messages configuration

- Extension phones must have the right "use as virtual set allowed" to YES. The telephones should not be connected.
- Call pits for messages have as many programmed keys "Monitor your multikey number" as messages to play simultaneously.
- You must have as many call pit for message as different messages to play.
- Place each one in a different company/department couple (different as 0/0).

3 Declaring agent sets

- The agent sets must belong to a grouping.
- Configuration "without CCO" or "a CCO" if in the headset mode.
- Rejected pending calls.
- Call interception between agents forbidden.

4 Replacing a call pit by a Virtual Grouping.

From version R2.1 of the PBX, inbound call pits or message call pits can or rather must be replaced by virtual groupings (without set declared) within the limit of 14 per cluster.

The % wait queue can be adjusted using the characteristics of the groupings, and x% wait queue size set to 96.

The time before ATDC return determines the time during which the call remains in the call pit: A high value is required for the message call pits: >600 s, and 15 s for an incoming call pit.

5 Example of creation of a message call pit of the type set on F3 or F4 PBX

XLIGAB: to declare phones

TELEPHONE SUBSCRIBERS

Object=Telephone Subscriber Action=Display

----------SUBSCRIBER ID----------

Entry by directory=YES Cluster=2. Card=5. Channel=0. Subscriber number=7500.....

----------SUBSCRIBER ID----------

Site number=1.. Answ=NO Status=Free

Subscriber type=Mono-user **Company=5.. Depart.=1.**.

Associated Exts.=NO

Type of set=Digital 40 keys Display=40 char. Function=Without

Model=None..... **Right to disconnect the set=YES**

Options: Minitel=NO Answer machine=NO Hands free num=NO Card reader=NO

Message languages: Vocal =.... =..... Text=Language 1=French

P_1 =NO =FT.... P_2 =NO =* P_3 =NO =* P_4 =NO =*

(*=Inex.)P_5 =NO =* P_6 =NO =* P_7 =NO =* P_8 =NO =*

RHM XPROGT: Program n set supervision keys.

RHM XSERAC: Affect CCS board messages to company/department tones 040, 042, 044 ,and 045

Object =**Welcome tones description** Action =Viewing

Sub-object=Welcome tones

---------- ACCESS TO THE SERVICE COMPANY----------

Company=5.. Service=1..

Type of tone=**Set available or OS before answer (040)** (see note)

Type of tone=**Set available or OS after answer (042)** (see note)

Type of tone=**Set busy before answer (044)**

Type of tone=**Set busy after answer (045)**

Nature of the tone=**Specific**
When using Virtual Grouping, only the tones 44 and 45 must be configured.

---------- CHARACTERISTICS OF THE TONE ----------

Source transmitter card 1=AMH Type film cluster=AMH

Source tone 1=IT04 =440_HZ_BN.....

Source tone 2=LIBELLE =440_HZ_BN.....

Source rate time 1 Tone=0.... ms Tone=0.... ms

Source rate time 2 Silence =0.... ms Silence =0.... ms

Replacement announcement=Yes

---------- CHARACTERISTICS OF THE FILM ----------

Announcement card=**CCS** Film number=**1..**

Source Cluster=3. Card Nr=0. IT non synchronized=Yes

Nr synchronized IT reserved=8. Listening time (s)=30.

Overflow to common synchronous time slots=Yes

6 Same example of creation of a message call pit on F1/F2/F5 PBX

Phones can be not connected / multi CCO as many as simultaneous calls on it / phone in different "society/service" as many as different messages to played.

Creation of call pit for messages (Virtual Phone Music):

Affect a tone between 64 and 111 to a film of CC1 board

Menu 5-5-1: TONE... **104**

SIGNAL TYPE **PHRASE**

SOURCE NUMBER 1 EXTERNAL MUSIC

PEAK DURATION (UNIT 10 MS) 0...

PEAK DURATION (UNIT 10 MS) 0...

SOURCE NUMBER 2 NON EXISTENT

PEAK DURATION (UNIT 10 MS) 0...

PEAK DURATION (UNIT 10 MS) 0...

ANNOUNCEMENT SUPPLIED BY **CC1**

EQT AND OR NO CARD BOX **MSG 00501**.

----------FT B5H-C ----------

Replace the chosen tone to the company/department which will play the messages.

Menu 5-5-5: PARTICULAR TONE **COMPANY10**

AND THE **SERVICE10** SERVICE

THE TONE **AV REP AB LIB** (see note)

AP REP AB LIB (see note)

BF ANS: EXT BUSY

AP REP AB OCC

When using a Virtual Grouping, only the busy tones (OCC) must be configured.

IS REPLACED BY THE STANDARDIZED TONE

NUMBER (64 A 111) 104

----------FT B5H-C ----------

7 IMPORTANT OBSERVATIONS

IMPORTANT: Place the agent extensions in a company/service pair different from the 0/0 pair. Therefore, a reminder ring is produced instead of messages.

Since PBX release 2.1, it is possible to replace Call pits by Virtual Groups without telephones. These groups are used, as a call pit set, to receive inbound calls and/or play messages.

9.3.4.2.2 CONFIGURING THE "REJECT21" FEATURE

Note: Reject 21 is applicable only to the solution without IVR.

The Reject 21 feature is described in § 8.3.1.8.

To use the Reject 21 feature, it must be possible to associate some call pits with the various incoming service types. This association is made in the M5000 CC Administrator application (see Sheet U-321).

The following evaluation of the Service status is valid only to configure the Reject 21, a feature offered for a CSTA configuration without IVR.

The following is required to evaluate the Service status:

- the M5000 CC must be configured in CSTA without IVR,
- at least one inbound calls pit is associated with the Service.

Opening or closing decision

- **The Service has no version in Production.**: the Service status is **closed**, regardless of the mode used by the M5000 CC Administrator and M5000 CC Service Manager.
- **The Service has a version in Production**: the decision to open or close the Services is made on two different levels:
  - On the level of the M5000 CC Administrator (see SheetU-352),
  - On the level of the M5000 CC Service Manager (see Sheet U-417 ***{Closing rules}*** tab).

If the closing decision is made by one of these two levels of decision, the status desired for the Service becomes closed. If the closing decision comes from the M5000 CC Administrator application, all Services for which Reject 21 is activated will be closed, whereas if the decision comes from the Service manager, only his Service is closed.

- In the **M5000 CC Administrator** application:
  - The mode selected in the M5000 CC Administrator application is **"System closed"**: the status of the Services becomes **closed** and this regardless of the mode defined on the level of the M5000 CC Service Manager.
  - The mode selected in the M5000 CC Administrator application is **"System open"**: the decision to open and close the various Services will be determined by the mode defined at the level of the M5000 CC Service Manager. If at the level of the M5000 CC Service Manager, closing is not required, the Service status is **open**, otherwise it is **closed**.
  - The mode selected in the M5000 CC Administrator is **"Automatic mode"**:
    - If at least **one of the rules** defined by the M5000 CC Administrator application is **respected**, the status of the Services becomes **closed**, regardless of the mode defined in the M5000 CC Service Manager.
    - If none of the rules defined by the M5000 CC Administrator application is respected, the opening or closing decision for the various Services will be determined by the mode defined in the M5000 CC Service Manager. If on the level of the M5000 CC Service Manager, closing is not required, the Service status is **open**, otherwise it is **closed**.
- In the **M5000 CC Service Manager**:
  - The mode selected on the level of the M5000 CC Service Manager is **"Close Service"**: the status of the Service becomes **closed**, regardless of the mode defined in the M5000 CC Administrator application.
  - The mode selected on the level of the M5000 CC Service Manager is **"Open Service"**: the Service opening and closing decision will be determined by the mode defined in the M5000 CC Administrator application. If in the M5000 CC Administrator application closing is not required, the Service status is **open**, otherwise it is **closed**.
  - The mode selected on the level of the M5000 CC Service Manager is **"Automatic Mode"**:
    - If at least **one of the rules** defined by the M5000 CC Service Manager is **respected**, the status of the Services becomes **closed**, regardless of the mode defined in the M5000 CC Administrator application.
    - If none of the rules defined by the M5000 CC Service Manager is respected, the opening or closing decision for the various Services will be determined by the mode defined in the M5000 CC Administrator application. If in the M5000 CC Administrator application closing is not required, the Service status is **open**, otherwise it is **closed**.

Rules for determining the status of a Service (Automatic mode)

Both the Service manager and the administrator can define a set of rules used to determine the status of a Service automatically. Two types of rules are possible: the **time** rules and **threshold** rules. These rules are defined per Service (managed by the Service managers) and also for the entire system (managed by the administrator). Among all the rules present, the Service managers and the administrator can decide to activate one, none, or several of these rules. The rules chosen will be evaluated regularly. The frequency used for this

verification is the same as the one used for broadcasts (defined in the M5000 CC Administrator application, see Sheet U-312 ***{Broadcasts}*** tab).

Note: There is also a rule intrinsic to the system, the minimum closing time (see below). This rule cannot be set as the other rules.

Time rule

A time rule is composed of one or several time intervals during which a Service must be closed. Therefore, a Service can be closed on the holidays, during lunch, etc. There are three types of time intervals possible:

- Specification of the closing times valid all days of the week (Monday to Sunday).
- Specification of a day of the week (Monday, Tuesday, etc.) and the closing time of the service in this day.
- Specification of a specific day in the year (25/12/2002, 01/01/2003, etc.) and the closing time of the service on this day.

Threshold rules

Each threshold rule corresponds to a property (a numerical value), evaluated regularly, like the time rule: if it exceeds the threshold specified, the Service is closed automatically. These rules are defined in the M5000 CC Service Manager (see Sheet U-417, ***{Closing rules}***tab) or in the M5000 CC Administrator application (see Sheet U-353).

Five different properties are envisaged:

- The longest call waiting time.
- Number of calls on hold.
- The call report: number of calls in relation to the number of agents logged on and ready (in percentage).
- The agents report: number of agents logged in, ready and with at least one of its extensions available out of the number of agents logged in (percentage).
- Number of calls per second assigned to the Service.

1) Closing threshold/opening threshold

   Two thresholds are specified for each rule: the closing threshold and the opening threshold. The opening threshold must be strictly lower than the closing threshold, except in the "**agents report"** where it is strictly above.

   When the value of a Service property exceeds the closing threshold of the corresponding rule, the Service is closed automatically. Once closed, the Service reopens automatically when the value of the corresponding property becomes lower (above in the agents report) than the opening threshold.

2) Minimum closing time

   In order to prevent too numerous and fast modifications of the status of a Service, a minimum closing time is imposed (10 seconds). The global rule is checked as long as the minimum closing time has not elapsed.

   For example, if the Service status shifts to closed then, 5 seconds later, no rule is met (time and thresholds), the Service opens only 5 seconds later.

Defining the rules used to determine a Service's status

These rules can be defined at two different levels. Either at the level of a Service (by the Service manager (see SheetU-417, ***{Closing rules}*** tab)), or at the level of all the Services (by the administrator, see SheetU-353). The rules which can be defined are identical on both levels, but of course the impact of the properties used to evaluate rules will be different. The rules defined by the Service manager are calculated based on information related with the Service, whereas the rules defined by the administrator are calculated based on global system information.

9.3.4.3 CONFIGURATIONS COMMON TO SOLUTIONS WITH/WITHOUT IVR

The configurations specific to the Solution with IVR are limited to:

- networking (see § 9.3.4.3.1 to 9.3.4.3.3),
- the configuration of the Voice media in the M5000 CC Administrator application (see Sheet C-410),
- the configuration of the Voice media in the M5000 CC Service Manager application (see SheetC-410).

9.3.4.3.1 PRESENTATION OF NETWORKING

The multi-Server configuration allows you to work with several M5000 CC Servers at the same time. They are linked to one or more PBXs. The purpose is to exchange information (e.g. calls and Service properties, Quality

of Service...) and transfer a call from one M5000 CC to the other:

- Architecture (so far, the multi-Server configuration is only available for the VOICE media) (see § 9.3.4.3.2).
- Configuration for a remote transfer to another Server (see § 9.3.4.3.3)
- Configuration of the M5000 CC Administrator application:
  - Overload servers (see SheetU-343),
  - Overload servers (see Sheet U-343),
  - DNIS (see Sheet U-321),
  - Frequency of remote broadcast (see SheetU-312, ***{Broadcasts}*** tab),
  - Local parameters (see SheetU-312, ***{Local parameters}***tab),
  - Display of Service properties of remote Servers on the Info bar (see Sheet U-348),
  - Display of Service properties of remote Servers on the wall display (see Sheet U-340).
- Configuration of the M5000 CC Service Manager application:
  - DNIS (see Sheet U-431),
  - Modifications of the "TransferCall" node (see § 13.2.2.7),
  - Modifications of the "Assign" node (see § 13.2.4.7).
- Five new intrinsic variables:
  - "CallTransferringServerName": Name of the remote Server from which a call is transferred,
  - "CallDestinationServerName": Name of the remote Server where the call is transferred to,
  - "NetworkId": Name of the Server where the call is first received, followed by the Call Id,
  - "CallTreatment": Property specifying if the call is processed locally or remotely,
  - "NumberOfRemoteTransfer": Number of remote transfers which have been done for the call.

9.3.4.3.2 NETWORKING M5000 CC - ARCHITECTURE

The different M5000 CCs must be connected to a LAN using the TCP/IP protocol. The link between the PBXs is made via the telephony network.

Each M5000 CC is independent and uses its **own File Structure**. But, the Service name defined must be the **same**, and the global variables exported during a transfer must be **declared** in all corresponding Services.

Servers inter-connection

To be able to transfer a call or information from one M5000 CC Server to another M5000 CC Server, a relation between them must be declared. This link between two Servers is defined in the M5000 CC Administrator application of each M5000 CC Server. One part of the relation indicates that the Local Server can transfer a call to another Server (OVER: an overflow Server is defined) and the other part of the relation indicates that the Local Server can receive a transferred call from another M5000 CC Server (IN: an innerflow Server is defined).

All the M5000 CC Servers are on the same level: none of them is master for the others. If one M5000 CC Server fails, all other M5000 CC Servers try to reconnect every second (and keep messages in memory for 3 minutes maximum).

9.3.4.3.3 CONFIGURING M5000 CC NETWORKING FOR A REMOTE TRANSFER TO ANOTHER SERVER

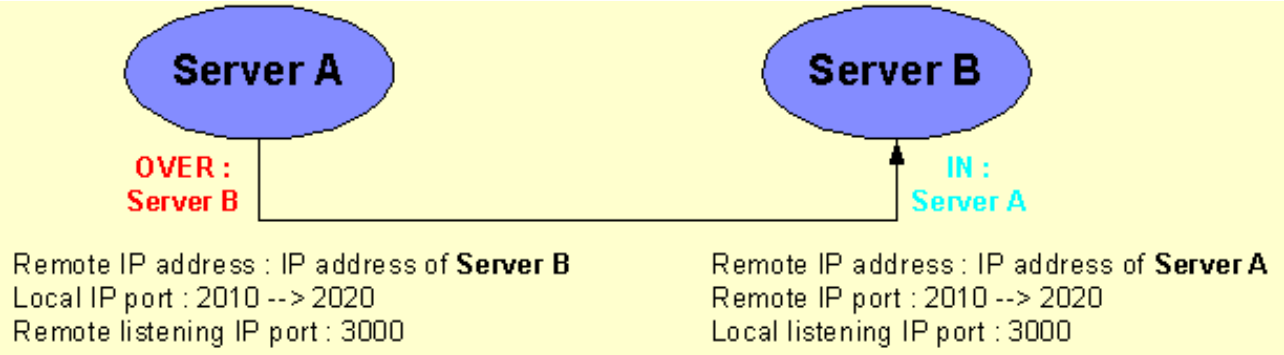


Figure 9.3 INTERCONNECTING REMOTE SERVERS

- Get two M5000 CCs installed on two computers on the same local area network (LAN using TCP/IP).
- Define the relationship between the two Servers, A and B, in the M5000 CC Administrator application of each one: (define an overflow Server in the M5000 CC Administrator application of Server A and an

innerflow Server in the M5000 CC Administrator application of Server B). If the two Servers use the same PBX, no prefix is necessary when defining the overflow Server. On the other hand, if the two Servers use two distinct PBX, the prefix of the PBX used by Server B is needed when defining the overflow Server.

- Define in the M5000 CC Administrator application a Service with the same name on the two Servers.
- Define a remote DNIS range in the M5000 CC Administrator application of the overflow Server.
- Create in the M5000 CC Service Manager application an IVR tree or a tree without IVR in the Service belonging to the Server where the overflow Server has been defined.
- Insert into this tree a TransferCall node (see § 13.2.2.7) with the option ***[Transfer to remote Service]***, and select a remote Server to which the call will be transferred. If you want to export global variables during the transfer, be sure that all these global variables are defined on the corresponding remote Service.
- To filter information, check that the filters are defined on the 2 sites (see the "Assign" node in § 13.2.4.7).
- In the M5000 CC Service Manager of the second M5000 CC, create a tree with or without IVR to manage the transferred call.
- Put the Service in Beta or Production on the two Servers.

9.3.5 CONFIGURING THE E-MAIL MEDIA

The configuration for the E-mail media requires a specific configuration of the M5000 CC as well as that of several external programmes. The configuration procedure is detailed in the following flow chart:

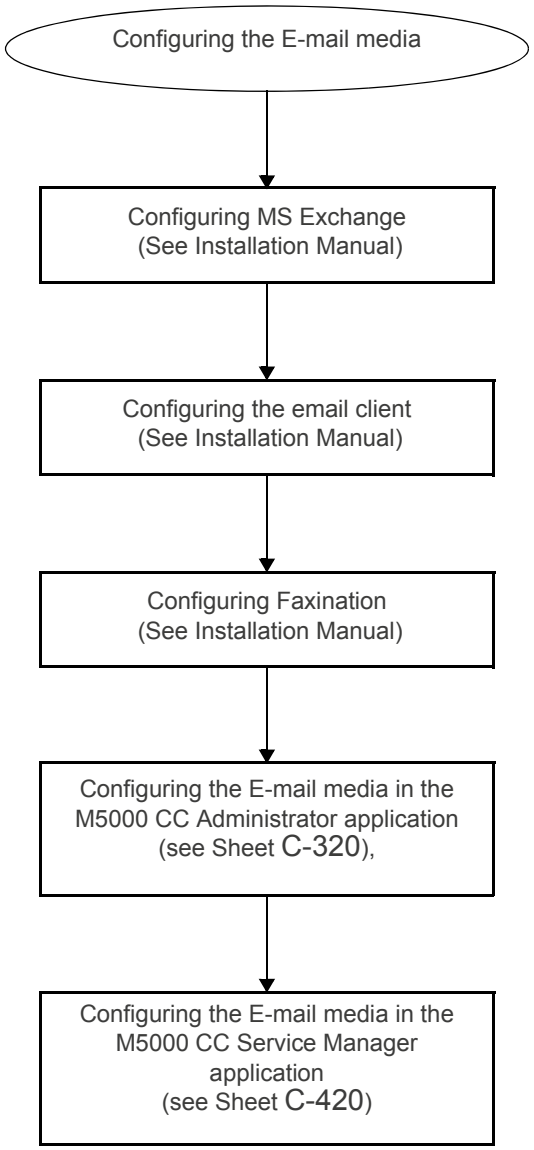


Figure 9.4 DIAGRAM OF THE E-MAIL MEDIA CONFIGURATION TASKS

9.3.6 CONFIGURING THE WEB MEDIA

The web function is based on the application of the methods indicated by M5000 CC WebCall Service from a web page.

On its own side, M5000 CC WebCall Service sets up some point-to-point data channels to the **M5000 CC Media Server** application. The M5000 CC Media Server acts as server: it must open a listening port to manage connection requests.

In M5000 CC, enter the "IP address to use for web features" and IP port to use for web features" properties of the media server configuration in the Administrator application. The customer is free to choose the rest of the configuration as follows:

- either the M5000 CC Media Server is located behind a proxy (this solution is highly recommended in terms of security),
- or, the M5000 CC Media Server is directly connected to the Network (Internet, Intranet, etc.) through a modem line or equivalent. In the latter case, no configuration is required.

9.4 START-UP

To start the Mitel 5000 Contact Center, start the applications in the following sequence:

- Starting the M5000 CC User application and connecting an agent(see Sheet C-0), then
- M5000 CC Media Server(see Sheet C-100), then
- M5000 CC Administrator(see Sheet C-300), M5000 CC Service Manager (see Sheet C-400) and M5000 CC User (see Sheet C-500) (see note),
- M5000 CC Wall Display (see Sheet C-600), if wall displays are used in the Mitel 5000 Contact Center.

Note: Several M5000 CC Service Manager or M5000 CC User applications can be opened in parallel.

During initial start-up, the administrator must define the first administrator profile(s), then the Service manager(s) (and team supervisor(s) to enable them to define agents.

9.4.1 PRESENTATION OF THE C SHEETS

The C sheets are composed (see Figure 9.5) of:

- A header containing the number and title of the record
- a set of 2 or 3 headings providing logistical information related to the task:
  - the purpose of the sheet,
  - the level required to produce the sheet,
  - any resources required to carry out the tasks in the sheet. The heading is not present when the sheet does not require any associated resources,
- a main body, describing the operations to perform, broken down into 2 sections:
  - Preliminary operations:

    This item describes the operations prior to the procedure object of the sheet (checking, connections, installation/execution/configuration of application...).
  - Procedure:

    This item describes all the operations required to perform the operation.
- a set of 2 headings which provide information which is complementary to the procedure which is the object of the sheet:
  - Comments :

    This heading describes the different parameters (values, consequences, etc.) required to carry out the procedure.

- If there is a problem :

  This heading specifies the different actions to be carried out if a problem occurs when you are carrying out the main procedure.

Not all headings are shown permanently and are only presented when needed.

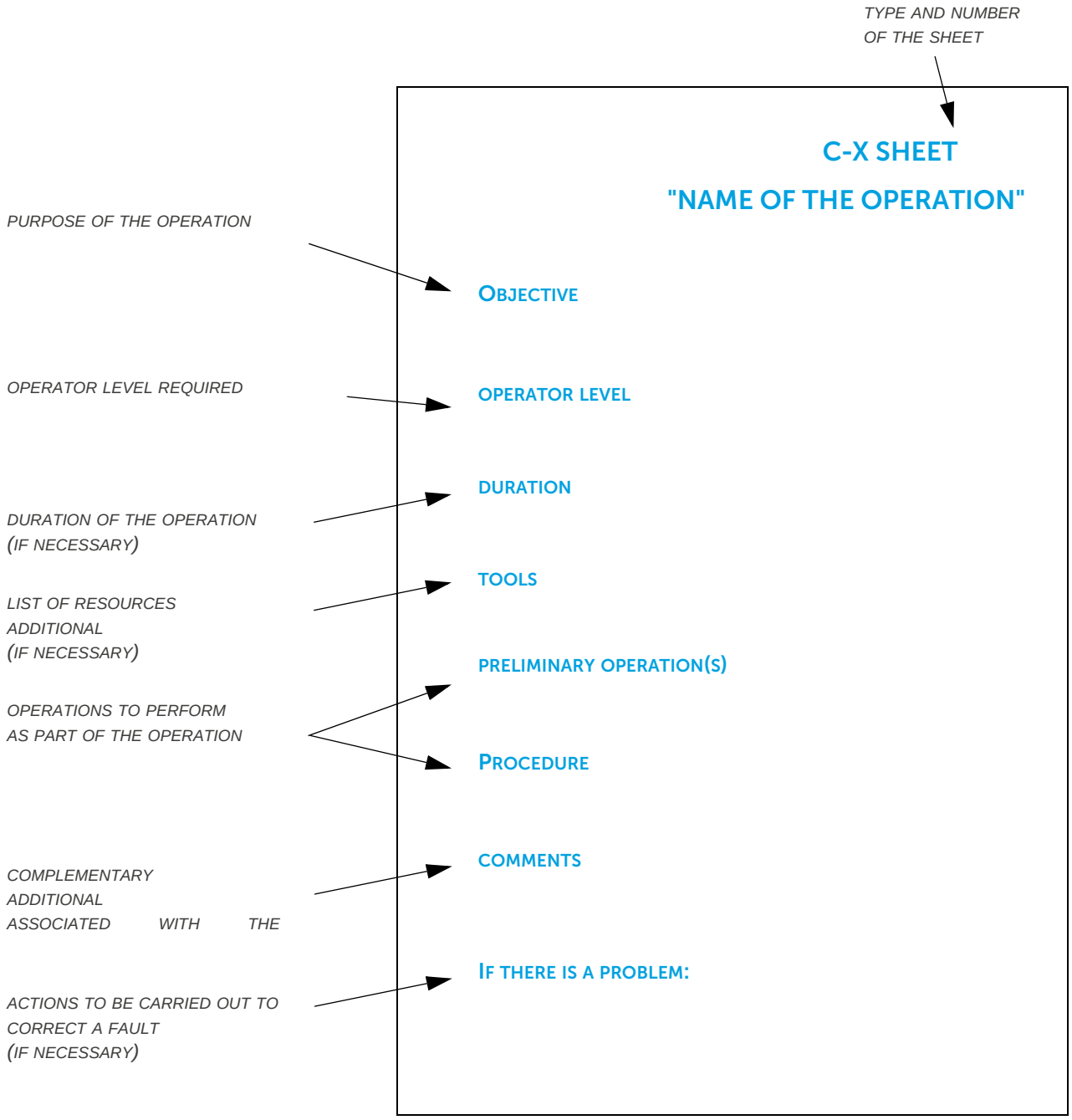


Figure 9.5 PRESENTATION OF THE C SHEETS

9.4.2 LIST OF C SHEETS

The C-sheets are numbered according to ranges used to identify the procedures related with the applications of the Mitel 5000 Contact Center or a feature (identically as the U sheets in chapter 10). These ranges are defined as follows:

- from C-0 to C-99: procedures related with the **M5000 CC Server** application,
- from C-100 to C-199: procedures related with the **M5000 CC Media Server** application,
- from C-200 to C-299: procedures related with the **M5000 CC Server** application,
- from C-300 to C-399: procedures related with the **M5000 CC Administrator** application,
- from C-400 to C-499: procedures related with the **M5000 CC Service Manager** application,
- from C-500 to C-599: procedures related with the **M5000 CC User** application,
- from C-600 to C-699: procedures related with the **M5000 CC Wall Display** application,
- from C-700 to C-799: **User ActiveX Control** interface related procedures,
- from C-800 to C-899: **JAVA Applet** procedures
- from C-900 to C-999: **M5000 CC Portal** procedures.

The ranges are numbered in "hundreds" per application:

Tableau 9.2 LIST OF C SHEETS

OPERATION	SHEET NO.
Procedures of the M5000 CC Server application	
Starting/implementing the M5000 CC Server application	C-0
Procedures of the M5000 CC Media Server application	
Starting/implementing the M5000 CC Media Server application	C-100
Procedures of the M5000 CC Administrator application	
Starting/implementing the M5000 CC Administrator application	C-300
Configuring the Voice media in the M5000 CC Administrator application	C-310
Configuring the E-mail media in the M5000 CC Administrator application	C-320
Procedures of the M5000 CC Service Manager application	
Starting/implementing the M5000 CC Service Manager application	C-400
Configuring the Voice media in the M5000 CC Service Manager application	C-410
Configuring the E-mail media in the M5000 CC Service Manager application	C-420
Procedures of the M5000 CC User application	
Starting the M5000 CC User application and connecting an agent	C-500
Procedures of the M5000 CC Wall Display application	
Starting/implementing the M5000 CC Wall Display application	C-600
Procedures of the JAVA applet	
Loading the JAVA applet using a browser	C-800
M5000 CC Portal procedures	
Connecting to the Web Portal	C-900

C-0 : STARTING/IMPLEMENTING THE M5000 CC SERVER APPLICATION

OBJECTIVE

- Starting the M5000 CC Server application and checking that the M5000 CC Server and Statistics Builder applications start very properly.

OPERATOR LEVEL

- Administrator.

TOOL(S)

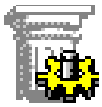
- Mitel 5000 Contact Center server PC on which the M5000 CC Server application is installed.

PRELIMINARY OPERATION(S)

- Open a Windows session.

PROCEDURE

Starting the M5000 CC Server application

- There are two ways of starting the M5000 CC Server application:
  - Double-click the **M5000 CC Server**  icon located on the desktop or
  - Start the M5000 CC Server application from the Windows **[Start]** menu.
- After starting the M5000 CC Server application, the general window of the M5000 CC Server application opens (see Sheet U-0), as well as the following 5 windows:
  - "Server connection messages"
  - "Tracing tools" (see SheetU-23)
  - "Components connected"
  - "Agent extensions" (see Sheet U-20)
  - "Key codes" (see Sheet U-22).

  Nota : • *The **"Server connection messages"** and **"Components connected"** windows cannot be closed individually (the closing buttons of their title bars is disabled).*

  • *The **"Client extensions"** window (see Sheet U-21) is only available through the **[Display >Client extensions] menu** when at least one M5000 CC Media Server is launched.*
- In the **"Server connection messages"** window check for the presence of the following messages:
  - "Server successfully started".
  - "The Statistics Builder application was successfully started in standard mode."

C-100 : STARTING/IMPLEMENTING THE M5000 CC MEDIA SERVER APPLICATION

OBJECTIVE

- Starting the M5000 CC Media Server application.

OPERATOR LEVEL

- Service Manager

TOOL(S)

- Mitel 5000 Contact Center PC on which the M5000 CC Media Server application is installed.

PRELIMINARY OPERATION(S)

- The M5000 CC Server application must be started by the administrator.

PROCEDURE

Starting the M5000 CC Media Server application

- There are two ways of starting the M5000 CC Media Server application:
  - Double-click the **M5000 CC Media Server**  icon located on the desktop or
  - Start the M5000 CC Media Server application from the Windows **[Start]** menu.
- After starting the M5000 CC Media Server application, the general window of the M5000 CC Media Server application opens, as well as the window below:
  - "Media Server Messages".

Note: The **"Message Server Messages"** window cannot be closed (the closing button in their title bars is disabled).

- The use of the commands in the general window menus of the M5000 CC Media Server application is described in Sheet U-100 managed by the administrator.

C-300 : STARTING/IMPLEMENTING THE M5000 CC ADMINISTRATOR APPLICATION

OBJECTIVE

- Starting the M5000 CC Administrator application.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- Mitel 5000 Contact Center PC on which the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- First start the M5000 CC Server application (see Sheet C-0).

PROCEDURE

Starting the M5000 CC Administrator application

- There are two ways of starting the M5000 CC Administrator application:
  - Double-click the **M5000 CC Administrator**  icon located on the desktop or
  - Start the M5000 CC Administrator application from the Windows **[Start]** menu.
- After starting the M5000 CC Administrator application, the general window of the M5000 CC Administrator application opens (see Sheet U-300), as well as the following 2 windows:
  - "Server messages"
  - "Broadcast messages".

Note: The **"Server messages"** and **"Broadcast messages"** windows cannot be closed individually (the closing button in their title bars is disabled).

- Refer to the basic operations of the M5000 CC Administrator application (see Sheet U-301) to known the mandatory sequence of the start-up tasks (change of language, connection to server; identification, etc.).

C-310 : CONFIGURING THE E-MAIL MEDIA IN THE M5000 CC ADMINISTRATOR APPLICATION

OBJECTIVE

- Configuring the elements required to configure Voice media in the M5000 CC Administrator application.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- Mitel 5000 Contact Center PC on which the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- First start the M5000 CC Administrator application (see Sheet C-300).

PROCEDURE

- To implement the Voice feature properly, apply the following configuration steps:

Tableau 9.3 CONFIGURING VOICE MEDIA IN THE M5000 CC ADMINISTRATOR APPLICATION

FUNCTION	TASK	WITH IVR	WITHOUT IVR	ASSOCIATED SHEET
Creating the service	Add a service to the system	X	X	Sheet U-321
Human resources management:	Define a DNIS (interval) per Service	X	X	Sheet U-321
	Define the private/public telephones	X		Sheet U-324
	Define the private/public/message call pits telephones		X	Sheet U-324
	Defining extensions	X	X	Sheet U-325
	Define CSTA links	X	X	Sheet U-329
	Define message call pit groups		X	Sheet U-326
	Configure the wall displays	X	X	Sheet U-340
Human resources management	Define at least one Service manager	X	X	Sheet U-321
	Define users	X	X	Sheet U-322
	Distribute agents to the various services	X	X	Sheet U-321 or U-322

Tableau 9.3 CONFIGURING VOICE MEDIA IN THE M5000 CC ADMINISTRATOR APPLICATION

FUNCTION	TASK	WITH IVR	WITHOUT IVR	ASSOCIATED SHEET
Managing the system properties	Configure agent recording	X		Sheet U-312 (Record***{tab}***)
	Configure Night mode (Maintenance mode)	X	X	Sheet U-312 ({Night mode}***tab)***
	Configure the size of buffers	X	X	Sheet U-312 ({Buffer size}***tab***)
	Define storage parameters	X	X	Sheet U-312 (Archiving***{tab}***)
	Define broadcast parameters	X	X	Sheet U-312 (Broadcast***{tab}***)
	Select replication type	X	X	Sheet U-312 (Statistics***{tab}***)
	Define the Reports Server	X	X	Sheet U-336
	Reject 21		X	Sheets U-352 andU-353

C-320 : CONFIGURING THE E-MAIL MEDIA IN THE M5000 CC ADMINISTRATOR APPLICATION

OBJECTIVE

- Configuring the elements required to configure e-mail media in the M5000 CC Administrator application.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- Mitel 5000 Contact Center PC on which the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- First start the M5000 CC Administrator application (see Sheet C-300).

PROCEDURE

- To implement the e-mail feature properly, apply the following configuration steps:

Tableau 9.4 CONFIGURING THE E-MAIL MEDIA IN THE M5000 CC ADMINISTRATOR APPLICATION

FUNCTION	TASK	ASSOCIATED SHEET
Creating the service	Add a service to the system	Sheet U-321
Human resources management	Define at least one Service manager	Sheet U-321
	Define users	Sheet U-322
	Assign agents to services	Sheet U-321 or U-322
Human resources management:	Define and assign a profile	Sheet U-331
	Assign an e-mail inbox to a Service	Sheet U-321
	Configure the wall displays	Sheet U-340
Managing the properties of the Service	Configure e-mail options	Sheet U-312 (tab ***{e-mail options}***)
	Configure Night mode (Maintenance mode)	Sheet U-312 ({Night mode}***tab)***
	Configure the size of buffers	Sheet U-312 ({Buffer size}***tab***)
	Define storage parameters	Sheet U-312 (Archiving***{tab}***)
	Define broadcast parameters	Sheet U-312 (Broadcast***{tab}***)
	Define statistics parameters	Sheet U-312 (Statistics***{tab}***)

C-400 : STARTING/IMPLEMENTING THE M5000 CC SERVICE MANAGER APPLICATION

OBJECTIVE

- Starting the M5000 CC Service Manager application.

OPERATOR LEVEL

- Service manager, or team manager or supervisor.

TOOL(S)

- Mitel 5000 Contact Center PC on which the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- The M5000 CC Server application must be started by the administrator.

PROCEDURE

Starting the M5000 CC Service Manager application

- There are two ways of starting the M5000 CC Service Manager application:
  - Double-click the **M5000 CC Service Manager**  icon located on the desktop or
  - Start the M5000 CC Service Manager application from the Windows **[Start]** menu.
- After starting the M5000 CC Service Manager application, the general window of the M5000 CC Service Manager application opens (see Sheet U-400), as well as the following 2 windows:
  - **"Server messages"**,
  - **"Broadcast messages"**.

Note: The **"Server messages"** and **"Broadcast messages"** windows cannot be closed individually (the closing button in their title bars is disabled).

- Refer to the basic operations of the M5000 CC Service Manager application (see SheetU-401) to known the mandatory sequence of the start-up tasks (change of language, connection to server; identification, etc.).

C-410 : CONFIGURING THE VOICE MEDIA IN THE M5000 CC SERVICE MANAGER APPLICATION

OBJECTIVE

- Configuring the elements required to configure Voice media in the M5000 CC Service Manager application.

OPERATOR LEVEL

- Service Manager

TOOL(S)

- Mitel 5000 Contact Center PC on which the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- First start the M5000 CC Service Manager application (see Sheet C-400).

PROCEDURE

Tableau 9.5 to Tableau 9.7 summarise the actions a Service manager can take to achieve an effective voice call management service. The service manager's main roles are to write scripts using the **scripting tool**, to manage **human resources** and supervise the contact centre thanks to the **supervision tool** integrated into M5000 CC:

- **Scripting tool**: the solution contains a step-by-step action plan which we advise you to use to ensure optimum script management. However, it is not necessary to follow the sequence of the different actions to the letter. Note that the script must always be loaded first before you can carry on with the other actions.
- **Human resources management**: the elements defined in relation with the agents have a crucial impact on the voice call script (especially in the "TransferCall" node see Section 13.2.2.7) as well as on the contact center supervision.
- **Supervision tool**: combines configuration and display. It is, of course, not mandatory for a Service manager to make use of all the supervision tools available at the same time. It is up to each Service manager to configure a supervision system suited to his or her needs. The "Production" status is the only prerequisite for real-time display of coherent data.

Before accessing the tasks defined in Tableau 9.5 to Tableau 9.7, you must first take the following two steps:

- Open a Service (see Sheet U-411), and
- Open a Version (see Sheet U-412).

Tableau 9.5 to Tableau 9.7 show an action plan which the Service manager must abide by when he or she is in charge of a customer call management service.

The tasks in Tableau 9.5 must be performed in the sequence specified:

Tableau 9.5 CONFIGURING THE VOICE MEDIA SCRIPTING TOOLS

FUNCTION	TASK	ASSOCIATED SHEET
Scripting tool	Load the script.	Sheet U-450
	Create a start tree without IVR.	Sheet U-441
	Develop the script with/without IVR.	§ 8.5.1
	Change the Version and DNIS statuses to 'Beta'.	Sheets U-413 andU-431
	Save and compile the script.	Sheet U-451
	Update the client applications and test the script.	Sheet U-452
	Change the Version and DNIS statuses to "Production".	Sheets U-413 andU-431
	Update the client applications.	Sheet U-452

Tableau 9.6 CONFIGURING VOICE MEDIA HUMAN RESOURCES MANAGEMENT

FUNCTION	TASK	ASSOCIATED SHEET
Human resources management	Assign agents to the Service.	Sheet U-434
	Define the languages used by agents in the Service.	Sheet U-436
	Assign a level of language to each agent.	Sheet U-436
	Define the skills required in the Service.	Sheet U-437
	Assign a level of skill to each agent.	Sheet U-437
	Define teams.	Sheet U-438
	Assign agents to teams.	Sheet U-434

Tableau 9.7 CONFIGURING THE VOICE MEDIA SUPERVISION TOOL

FUNCTION	TASK	ASSOCIATED SHEET
Supervision tool	The status of the Version is in "Production".	Sheet U-413
	Define filters.	Sheet U-443
	Displaying a filter in the info bar	Sheet U-404
	Display a filter on the wall displays.	Sheet U-483
	Choose the properties to display.	Sheet U-483
	Displaying the properties in the info bar	Sheet U-483
	Display the properties on the wall displays.	Sheet U-483
	Personal messages	Sheet U-484
	Configure real-time statuses. Real-time statuses	Sheet U-484 Section 8.3.7.2.2

C-420 : CONFIGURING THE E-MAIL MEDIA IN THE M5000 CC SERVICE MANAGER APPLICATION

OBJECTIVE

- Configuring the elements required to configure e-mail media in the M5000 CC Service Manager application.

OPERATOR LEVEL

- Service Manager

TOOL(S)

- Mitel 5000 Contact Center PC on which the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- First start the M5000 CC Service Manager application (see Sheet C-400).

PROCEDURE

Tableau 9.8 to Tableau 9.10 summarise the actions a Service manager can take to have an efficient e-mail Service. The main roles of the service manager are to write scripts using the **scripting tool**, **manage human resources** and supervise Mitel 5000 Contact Center thanks to the **supervision tool** integrated into M5000 CC.

- **Scripting tool** : the solution contains a step-by-step action plan which we advise you to use to ensure optimum script management. However, it is not necessary to follow the sequence of the different actions to the letter. Note that the script must always be loaded first before you can carry on with the other actions.
- **Human resources management**: the defined elements in relation to the agents have a crucial impact on the e-mail script (especially within the DistributeEmail node see § 13.2.7.2) as well as on the Mitel 5000 Contact Center supervision.
- **Supervision tool**: combines configuration and display. It is, of course, not mandatory for a Service manager to make use of all the supervision tools available at the same time. It is up to each Service manager to configure a supervision system suited to his or her needs. The “Production” status is the only prerequisite for real-time display of coherent data.

Before accessing the tasks defined in Tableau 9.8 to Tableau 9.10, you must first take the following two steps:

- Open a Service (see Sheet U-411), and
- Open a Version (see Sheet U-412).

The Tableau 9.8 to Tableau 9.10 displays an action plan which has to be performed by the Service manager in order to run a Service handling customers' requests via e-mails.

The tasks in Tableau 9.8 must be performed in the sequence specified:

Tableau 9.8 TASKS FOR CONFIGURING THE E-MAIL MEDIA SCRIPTING TOOLS

FUNCTION	TASK	ASSOCIATED SHEET
Scripting tool	Load the script.	Sheet U-450
	Creating another start-up E-mail Server	Sheet U-450
	Developing the E-mail script	§ 8.5.1
	Change the Version and e-mail box statuses to "Beta".	Sheets U-413 andU-432
	Save and compile the script.	Sheet U-451
	Update the client applications and test the script.	Sheet U-452
	Change the Version and e-mail box statuses to "Production".	Sheets U-413 andU-432
	Update the client applications.	Sheet U-452

Tableau 9.9 TASKS FOR CONFIGURING HUMAN RESOURCES MANAGEMENT OF THE E-MAIL MEDIA

FUNCTION	TASK	ASSOCIATED SHEET
Human resources management	Assign agents to the Service.	Sheet U-434
	Define the languages used by agents in the Service.	Sheet U-436
	Assign a level of language to each agent.	Sheet U-436
	Define the skills required in the Service.	Sheet U-437
	Assign a level of skill to each agent.	Sheet U-437
	Define teams.	Sheet U-438
	Assign agents to teams.	Sheet U-434

Tableau 9.10 TASKS FOR CONFIGURING THE SUPERVISION TOOL FOR THE E-MAIL MEDIA

FUNCTION	TASK	ASSOCIATED SHEET
Supervision tool	The status of the Version is in "Production".	Sheet U-413
	Define filters.	Sheet U-443
	Displaying a filter in the info bar	Sheet U-404
	Display a filter on the wall displays.	Sheet U-483
	Choose the properties to display.	Sheet U-483
	Displaying the properties in the info bar	Sheet U-483
	Display the properties on the wall displays.	Sheet U-483
	Personal messages	Sheet U-433
	Configure real-time statuses. Real-time statuses	Sheet U-484 § 8.3.7.2.2

C-500 : STARTING THE M5000 CC USER APPLICATION AND CONNECTING AN AGENT

OBJECTIVE

- Starting the M5000 CC User application and logging on as a fat client agent.

Note: Information on how to log on as a thin client agent is given in Sheet C-900.

OPERATOR LEVEL

- Agent

TOOL(S)

- Mitel 5000 Contact Center PC on which the M5000 CC User application is installed.

PRELIMINARY OPERATION(S)

- The M5000 CC Server application must be started by the administrator.

PROCEDURE

Starting the M5000 CC User application

- There are two ways of starting the M5000 CC User application:

  - Double-click the **M5000 CC User**  icon located on the desktop or
  - Start the M5000 CC User from the Windows **[Start]** menu.

  The **"User connection"** dialog box appears (see Figure 9.6).

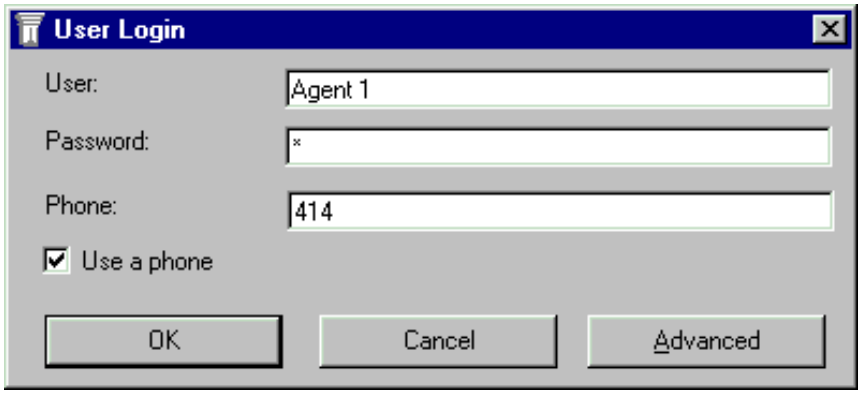


Figure 9.6 USER LOG-IN WINDOW

- Configure the following fields or box:
  - ***{User}***field: enter your user identifier or alias number.
  - ***{Password}***field: enter your password (defined by the Administrator).
  - ***{Telephone}***field: enter the identifier of the telephone you will use to work, based on what was defined by the administrator.
  - ***[Use a telephone]***checkbox: This option is used to connect with or without a telephone. If this option is not ticked, you will only be able to manage e-mails (and no voice calls).
- To define additional parameters, click ***[Plus]*** (see Figure 9.7):
  - If not yet done, enter the full path of the "Version.CFG" file in the ***{Path of the file of the version}*** field which has just appeared, or click ***[Browse...]*** and select the file using the dialogue box.
  - If required, change the language, by clicking the ***[Modify the language]***button.

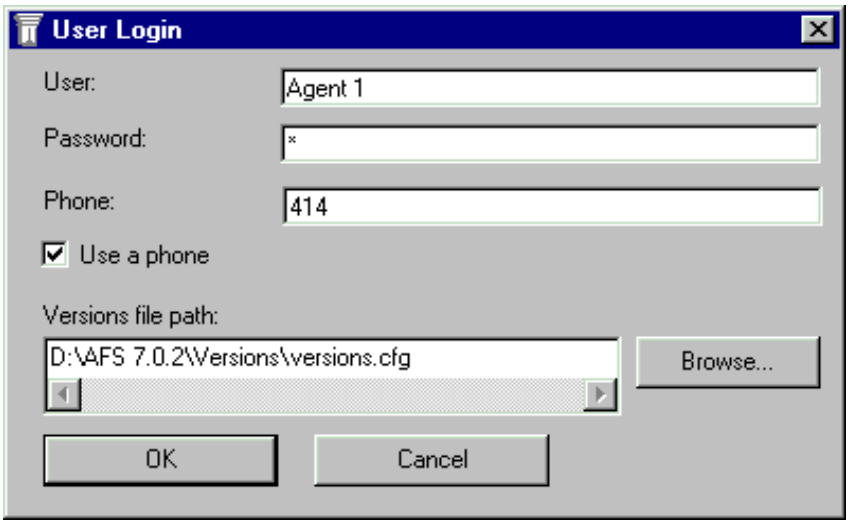


Figure 9.7 PATH OF THE VERSION FILE IN THE USER'S LOG-IN WINDOW

Note: The **[Validate]** button remains greyed out as long as you have not entered all the data required.

- Click ***[Validate]*** to start the M5000 CC User application: the M5000 CC User application main window opens (see Sheet U-500), as well as the following 2 windows:
  - "Server messages"
  - "Broadcast messages".

Note: The **"Server messages"** and **"Broadcast messages"** windows cannot be closed individually (the closing button in their title bars is disabled).

- Refer to Sheet U-500 for information on how to use the menu commands in the M5000 CC User application main window.

C-600 : STARTING/IMPLEMENTING THE M5000 CC WALL DISPLAY APPLICATION

OBJECTIVE

- Starting the M5000 CC Wall Display application.

OPERATOR LEVEL

- Administrator or service manager, or team supervisor or manager.

TOOL(S)

- Mitel 5000 Contact Center PC on which the M5000 CC Wall Display application is installed.

PRELIMINARY OPERATION(S)

- The M5000 CC Server application must be started by the administrator.

PROCEDURE

Starting the M5000 CC Wall Display application

- There are two ways of starting the M5000 CC Wall Display application:
  - Double-click the **M5000 CC User** icon  located on the desktop or
  - Start the M5000 CC Wall Display application from the Windows **[Start]** menu.
- After starting the M5000 CC Wall Display application, the M5000 CC Wall Display application main window opens (see Sheet U-600), as well as the window below:
  - "Server messages".

Nota : • *The **"Server Messages"** window cannot be closed (the close button in their title bars is disabled).*

- Refer to the basic operations required for managing the wall displays in the M5000 CC Administrator and M5000 CC Service Manager applications (see Sheet U-600).
- Refer to Sheet U-600 for information on how to use M5000 CC Wall Display application menus.

C-800 : LOADING THE JAVA APPLET USING A BROWSER

OBJECTIVE

- Reacting to the reactions of each browser (Microsoft Internet Explorer or Netscape Navigator) to the loading of the JAVA applet.

Note: Netscape Navigator is compatible with the Mitel 5000 Contact Center web module but not with the thin client M5000 CC Portal.

OPERATOR LEVEL

- System administrator or website administrator

TOOL(S)

- Client PC.

PRELIMINARY OPERATION(S)

- Start the browser on the client PC.

PROCEDURE

Netscape and Microsoft have a different management approach to applets, follow the instructions below according to the reactions of each browser to a loading operation.

Archive loaded by Internet Explorer

When the archive is loaded by Internet Explorer, it will immediately ask the user if he or she trusts the developer, by displaying the "**Security Warning**" dialogue box.

- If the customer answers ***[Yes]***, the applet runs with full access to the user's PC.
- If the user answers ***[No]***, Explorer runs the applet in the sandbox and no network connection can be set up with Mitel 5000 Contact Center (unless the website is hosted on the same system as M5000 CC Media Server).
- Users can choose to trust all subsequent downloading of software from "Mitel Belgium".
- They can also choose to trust all software certified by "Mitel Belgium".
- Users can check the certificate and its validity, simply by going to Mitel Belgium's website (http://www.mitel.be).

Applet loaded by Navigator:

When the applet is loaded by Navigator, it is constrained by the sandbox. When the applet asks for permission to do something "dangerous", the following **Java Security** dialog box is displayed to the user, asking him or her whether he or she trusts the developer.

- If the answer is ***[Deny]***, the network connection fails (but the applet keeps running).
- If the answer is ***[Grant]***, the request is granted and the applet might execute the "dangerous" function required to set up a connection with Mitel 5000 Contact Center.
  If the user ticks the ***[Remember this decision]*** checkbox and then clicks ***[Grant]*** , access to the specified target is permitted indefinitely (unless the user explicitly specifies otherwise in the Security Information dialogue box).

To obtain more information before taking a decision, the user can click the ***[Certificate]*** button. In this case, another dialogue box appears, displaying additional information on the certificate.

C-900 : CONNECTING TO THE WEB PORTAL

OBJECTIVE

- Accessing M5000 CC Portal and other web applications hosted there.

OPERATOR LEVEL

- Any user belonging to a Windows security group defined by the administrator

TOOL(S)

- PC running with Internet Explorer 6.0, for access to the M5000 CC Portal site.

PRELIMINARY OPERATION(S)

- None.

PROCEDURE

1 Accessing the site

- Open an internet browser then enter the M5000 CC Portal site name.

Note: While connecting for the first time to M5000 CC Portal (Java applet loading by the browser), see Sheet C-800 describing the display of an authentication certificate.

2 Connection

The first time a user connects to the portal, he or she is asked the following question during start-up: **"Are you the Mitel 5000 Contact Center software user?"**.

- If the user answers ***[Yes]***, he or she must identify himself/herself using his or her ID (or alias number) and M5000 CC password.

  The user is henceforth associated with Mitel 5000 Contact Center, and portal start-up continues, presenting Mitel 5000 Contact Center specific applications, among others.

- If the user answers ***[No]*** or clicks the ***[Cancel]*** button, the portal start-up operation continues, but the user is not associated with Mitel 5000 Contact Center (and is, thus, not considered as an agent, manager, etc.).

In all cases (if the answer is ***[Yes]*** or ***[No]***), this question will not be asked any longer when next M5000 CC Portal is started by this user.

3 Telephone

Instead of always using the telephone defined in Active Directory to process calls, an Mitel 5000 Contact Center agent may use any of the public telephones defined in the system by the administrator.

By default, when the portal is started, the agent is prompted to indicate the phone number he or she wishes to use. Only the public telephones defined in the system, or the agent's number (defined in Active Directory) may be chosen at this stage. In case of error, the agent is prompted to choose another phone number.

If the same telephone is still used by the agent, he or she can specify it on options page. In this case, the telephone must not be specified upon portal start-up (see Sheet U-900).

4 Starting without a telephone

The agent can start the portal without a telephone by unticking the ***[Use a telephone]*** box, or by closing the window without clicking the ***[OK]*** button. This enables him, for example, to limit him/herself to e-mail processing.

In this case, the "Click & dial" application (see Sheet U-900) is considered as not started. The agent can start this application any time (and choose a telephone), by clicking the corresponding button in the menu area.

10 USE

10.1 GENERAL INFORMATION

This chapter indicates the different tasks associated with the use of the various applications.

The operations which require specific actions are given in a User sheet (refer to the presentation in paragraph 10.2).

The list of sheets is provided in paragraph 10.3.

10.2 PRESENTATION OF THE USE SHEETS

The U sheets are made up of (see Figure 10.1):

- A header containing the sheet number and title
- a set of 3 or 4 headings providing logistical information related to the task:
  - the purpose of the sheet,
  - the level/profile required to carry out the tasks in the sheet (administrator, team supervisor or manager, etc.),
  - any resources required to carry out the tasks in the sheet. The heading is not present when the sheet does not require any associated resources,
- a main body, describing the operations to perform, broken down into 2 sections:
  - Preliminary operations:

    This heading describes the operations you must carry out before carrying out the procedure which is the objective of the sheet.
  - Procedure:

    This section describes all the operations required to carry out the check.
- a set of 2 headings which provide information which is complementary to the procedure which is the object of the sheet:
  - Comments :

    This heading describes the different parameters (values, consequences, etc.) required to carry out the procedure.
  - If there is a problem :

    This heading specifies the different actions to be carried out if a problem occurs when you are carrying out the main procedure.

Not all headings are shown permanently and are only presented when needed.

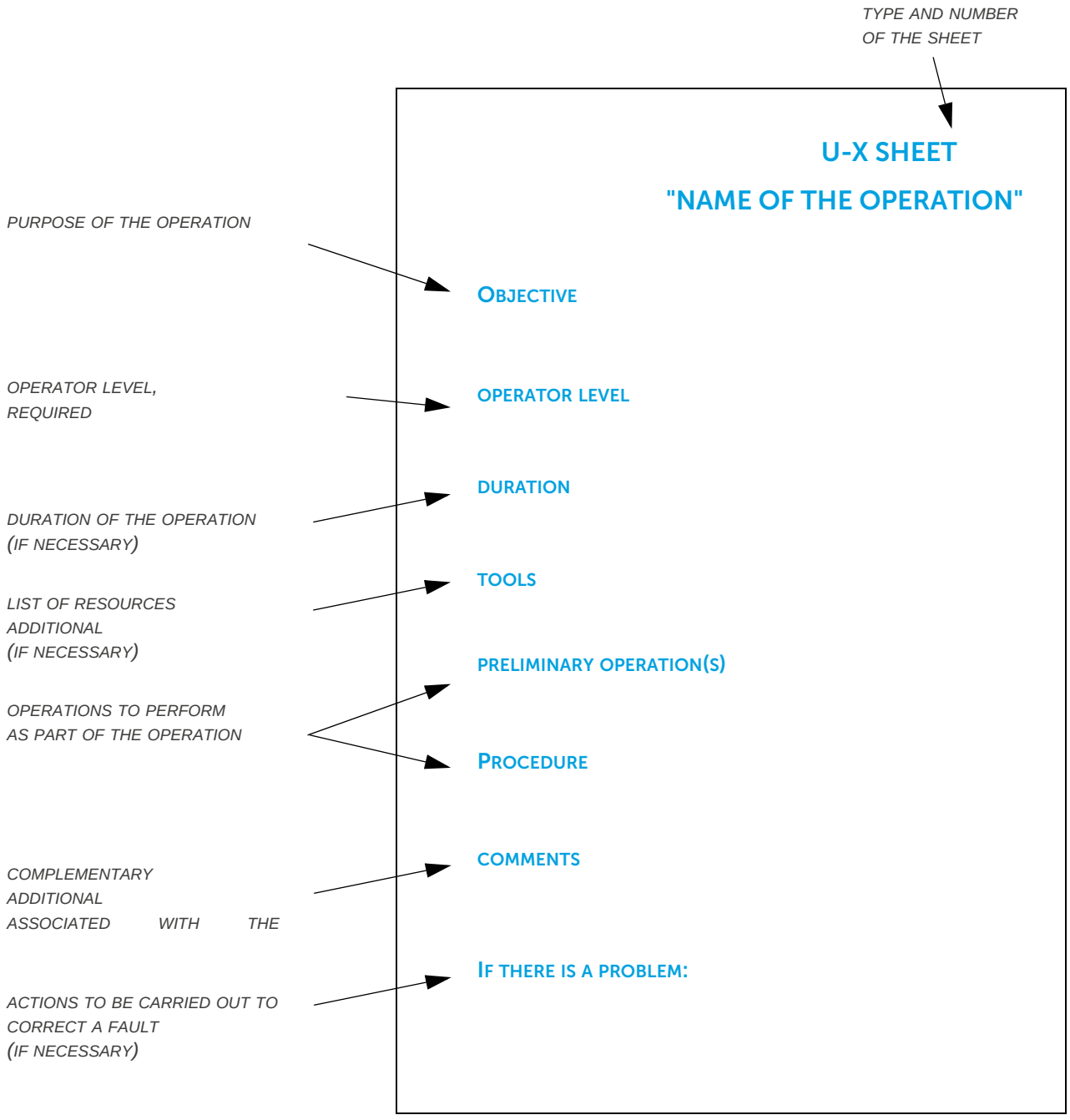


Figure 10.1 PRESENTATION OF THE U SHEETS

10.3 LIST OF THE U SHEETS

The U sheets are numbered according to ranges used to identify the procedures related to one of the Mitel 5000 Contact Center applications or a feature (in the same way as the C sheets in Section 9). These ranges

are defined as follows:

- from U-0 to U-99: procedures related to the **M5000 CC Server** application (see Tableau 10.1)
- from U-100 to U-199: procedures related to the **M5000 CC Media Server** application (see Tableau 10.2)
- from U-200 to U-299: procedures related to the **M5000 CC Report Server** application (see Tableau 10.3)
- from U-300 to U-399: procedures related to the **M5000 CC Administrator** application (see Tableau 10.4)
- from U-400 to U-499: procedures related to the **M5000 CC Service Manager** application (see Tableau 10.5)
- from U-500 to U-599: procedures related to the **M5000 CC User** application (see Tableau 10.6)
- from U-600 to U-699: procedures related to the **M5000 CC Wall Display** application (see Tableau 10.7)
- from U-700 to U-799: procedures related to the interface **User ActiveX Control** (see Tableau 10.8)
- from U-900 to U-999: **M5000 CC Portal** procedures (see Tableau 10.8).

The ranges are numbered in "hundreds" per application then in "tens" per menu of this application (or in "twenties" if the menu is a long one).

Note: Depending on the user profile, the menus of certain applications and their associated U sheets are not applied (for example, see Tableau 10.5).

Tableau 10.1 LIST OF APPLICATION U SHEETS M5000 CC SERVER

OPERATION	SHEET NO.
General M5000 CC Server application procedures	
• Using the menus of the M5000 CC Server application	U-0
"File" menu procedures	
• File Menu: Print	U-10
• File Menu: Exit	U-11
"View" menu procedures	
• Display Menu: Agent extension	U-20
• Display Menu: Client extension	U-21
• Display Menu: Key codes	U-22
• Display Menu: Tracking tool	U-23
• Display Menu: Performance measurement	U-24
Tools" menu procedures	
• Tools Menu: Demonstration Mode	U-30

Tableau 10.2 LIST OF APPLICATION U SHEETS M5000 CC MEDIA SERVER

OPERATION	SHEET NO.
General M5000 CC Media Server application procedures	
• Using the menus in the M5000 CC Media application	U-100
"File" menu procedures	
• File Menu: Print	U-110
• File Menu: Exit	U-111
"View" menu procedures	
• Display Menu: Call Server Messages or Media Server Status	U-120
• Display Menu: Runs	U-121
• Display Menu: Tracking messages	U-122
"Status" menu procedures	
• Status Menu: "IVR port load" and "Settings"	U-130

Tableau 10.3 LIST OF APPLICATION U SHEETS M5000 CC REPORT SERVER

OPERATION	SHEET NO.
General M5000 CC Report Server application procedures	
• Remote report viewing	U-200
• Modification of report printing rights	U-201
• Instant report editing	U-202
• Automatic and scheduled report editing	U-203
Specific procedure for managing the reports database	
• Create, add, and test a customized report in the "LongTermReporting.mdb" database	U-210

Tableau 10.4 LIST OF THE U SHEETS IN THE M5000 CC ADMINISTRATOR APPLICATION (1/3)

OPERATION	SHEET NO.
General M5000 CC Administrator application procedures	
• Using M5000 CC Administrator application menus	U-300
• Basic operations and starting the M5000 CC Administrator	U-301
• Defining physical and human resources	U-302
• Managing system settings	U-303
• Managing information about M5000 CC activity	U-304
"File" menu procedures	
• File Menu: Connection	U-310
• File Menu: Backup	U-311

Tableau 10.4 LIST OF THE U SHEETS IN THE M5000 CC ADMINISTRATOR APPLICATION (2/3)

OPERATION	SHEET NO.
• File Menu: Properties	U-312
• File Menu: Print	U-313
• File Menu: Change language	U-314
• File Menu: Server shutdown	U-315
"View" menu procedures	
• Display Menu: Statistics	U-320
• Display Menu: Services	U-321
• Display Menu: Users	U-322
• Display Menu: User profiles	U-323
• Display Menu: Telephones	U-324
• Display Menu: Extensions	U-325
• Display Menu: Message call pit groups	U-326
• Display Menu: User groups	U-327
• Display Menu: Directories	U-328
• Display Menu: Telephone links	U-329
• Display Menu: Key codes	U-330
• Display Menu: E-Mail Profiles	U-331
• Display Menu: SMS Profiles	U-332
• Display Menu: Dialling rules:	U-333
• Display Menu: PNIA: Configuring	U-350
• Display Menu: PNIA: transformation rules	U-351
• Display Menu: User defined URL	U-334
• Display Menu: Calls & E-mails Section	U-335
• Display Menu: Report Server	U-336
• Display Menu: Directory Server	U-337
• Display Menu: Calendar Server	U-338
• Display Menu: Virtual centres	U-339
• Display Menu: Wall displays	U-340
• Display Menu: Media Servers	U-341
• Display Menu: Voice synthesis channels	U-342
• Display Menu: Networking	U-343
• Display Menu: Sub-networks	U-344
• Display Menu: Options	U-345
"Status" menu procedures	
• Status Menu: Display	U-346

Tableau 10.4 LIST OF THE U SHEETS IN THE M5000 CC ADMINISTRATOR APPLICATION (3/3)

OPERATION	SHEET NO.
• Status Menu: UDP Properties	U-347
• Status Menu: Display properties	U-348
• Status Menu: Parameter	U-349
"Rejet21" menu procedures	
• Reject21 Menu: "Automatic mode", "System open" or "System closed"	U-352
• Reject21 Menu: Defining the rules	U-353
"Supervision" menu procedures	
• Using the commands in the "Supervision" menu	U-360
"Trace messages" menu procedures	
• Using the commands in the "Tracking message" menu	U-370

Tableau 10.5 LIST OF APPLICATION U SHEETS M5000 CC SERVICE MANAGER (1/3)

OPERATION	MANAGER DEPARTMENT	TEAM MANAGER	TEAM SUP.	SHEET NO.
General M5000 CC Service Manager application procedures	X	X	X	
• Using the menus in the M5000 CC Service Manager application	X	X		U-400
• Basic operations and starting the M5000 CC Service Manager	X	X	X	U-401
• Configuring a Service	X	X	X	U-402
• Service supervision	X	X	X	U-403
• Filtering information	X			U-404
• Script management guidelines	X			U-405
"File" menu procedures	X	X	X	
• File Menu: Connect	X	X	X	U-410
• File Menu: Open service	X	X	X	U-411
• File Menu: Open version	X	X	X	U-412
• File Menu: Version status	X			U-413
• File Menu: Service status	X			U-414
• File Menu: New Version	X			U-415
• File Menu: Delete Version	X			U-416
• File Menu: Properties	X			U-417
• File Menu: Print	X	X	X	U-418
• File Menu: Change Language	X	X	X	U-419

Tableau 10.5 LIST OF APPLICATION U SHEETS M5000 CC SERVICE MANAGER (2/3)

OPERATION	MANAGER DEPARTMENT	TEAM MANAGER	TEAM SUP.	SHEET NO.
• File Menu: Exit	X	X	X	U-420
"View" menu procedures	X	X		
• Display Menu: Outbound call list	X			U-430
• Display Menu: DNIS range	X			U-431
• Display Menu: Mailbox	X			U-432
• Display Menu: Personal messages	X	X		U-433
• Display Menu: Agents	X	X		U-434
• Display Menu : User profiles	X			U-435
• Display Menu: Languages	X	X		U-436
• Display Menu: Skills	X	X		U-437
• Display Menu: Teams	X	X		U-438
• Display Menu: Add-on Modules *(Reserved)*	X			
• Display Menu: Sounds	X			U-440
• Display Menu: Tree structures	X			U-441
• Display Menu: Variables	X			U-442
• Display Menu: Filters	X			U-443
• Display Menu: Options	X	X	X	U-443
"Scenarios" menu procedures	X			
• Script Menu: "Load" or "Unload"	X			U-450
• Script Menu: "Compile" and "Save"	X			U-451
• Script Menu: Update clients	X			U-452
"Wizards" menu procedures	X			
• Wizards Menu: SimpleRout	X			U-460
"Status" menu procedures	X	X	X	
• Status Menu: Agents	X	X	X	U-470
• Status Menu: Calls	X	X	X	U-471
• Status Menu: E-mail	X	X	X	U-472
• Status Menu: Extensions	X	X	X	U-473
• Status Menu: Web sessions	X	X	X	U-474
• Status Menu: Quality of Service	X	X	X	U-475
• Status Menu: Quality of Service for E-mails	X	X	X	U-476
• Status Menu: Waiting time	X	X	X	U-477
• Status Menu: E-mail Treatment times	X	X	X	U-478
• Status Menu: Service status	X	X	X	U-479

Tableau 10.5 LIST OF APPLICATION U SHEETS M5000 CC SERVICE MANAGER (3/3)

OPERATION	MANAGER DEPARTMENT	TEAM MANAGER	TEAM SUP.	SHEET NO.
• Status Menu: Display	X	X	X	U-480
• Status Menu: Wall Display	X	X	X	U-481
• Status Menu: Display properties	X			U-482
• Status Menu: Parameter	X			U-483
• Status Menu: Reports	X	X		U-484
• Status Menu: &Configuration statuses of the day	X			U-485

Note: The applicability and accessibility of certain menus or menu commands according to whether the user profile is "Service manager " or "team supervisor" is specified by an X in the " SERVICE " and "TEAM SUPERVISOR" columns in this table.

Tableau 10.6 LIST OF APPLICATION U SHEETS M5000 CC USER

OPERATION	SHEET NO.
General M5000 CC User application procedures	
• Using the menus and tool bars in the M5000 CC User application	U-500
• Using voice call management windows	U-501
• Using e-mail management windows	U-502
• Using the "Information" node in the M5000 CC User application	U-503
"File" menu procedures	
• File Menu: "Log-in" / "Log-off"	U-510
• File Menu: Print	U-511
"View" menu procedures	
• Display Menu: "Extensions" / "Tracking tool" / "Pool"	U-520
"User" menu procedures	
• User Menu: "Ready" or "Not ready"	U-530
• User Menu: PCP (Post Call Processing)	U-531
"Status" menu procedures	
• Status Menu: Display	U-540

Tableau 10.7 LIST OF U SHEETS CONCERNING THE WALL DISPLAYS

OPERATION	SHEET NO.
General M5000 CC Wall Display application procedures	
• Using the M5000 CC Wall Display application	U-600
• Basic operations required for managing wall displays	U-601
"View" menu procedures	

Tableau 10.7 LIST OF U SHEETS CONCERNING THE WALL DISPLAYS

• Display Menu: Always on top.	U-610
"Wall Display" menu procedures	
• Wall Display Menu: Options	U-620
"Status" menu procedures	
• Status Menu: Display	U-630

Tableau 10.8 LIST OF USER ACTIVEX CONTROL INTERFACE U SHEETS

OPERATION	SHEET NO.
General procedure for the User ActiveX Control interface	
• Using the User ActiveX Control interface	U-700

Tableau 10.9 LIST OF U SHEETS CONCERNING THE M5000 CC PORTAL

OPERATION	SHEET NO.
General procedures concerning the use of M5000 CC Portal	
• General use of the Web Portal	U-900
Click & dial web application procedures	
• Using the web application Click & dial	U-910
Calls and e-mails web application procedures	
• Using the Web Calls and e-mail application	U-920
Supervision web application procedures	
• Using the real-time Web Supervision application	U-930
M5000 CC Anywhere application procedures	
• Using the M5000 CC Anywhere application	U-935
Procedures of the M5000 CC User application	
• Using the agent toolbar	U-940
• Using the multimedia toolbar	U-941
Directories web application procedures	
• Using the Web Directory application	U-942
• Using the missed calls logs 'Service'	U-943
Procedures of the Conference Bridge application	
• Using the Conference bridge application	U-943
Agent Web Supervision application procedures	
• Using the agent Web Supervision application	U-960
CRM record web application procedures	
• Using the CRM records web application	U-970

Tableau 10.9 LIST OF U SHEETS CONCERNING THE M5000 CC PORTAL

OPERATION	SHEET NO.
User profiles application	
• Using the user profiles application	U-980
Service Manager Web Application	
• Using the Service Manager Web Application	U-990
Script Settings web application	
• Using the Script Settings Web Application	-

U-0 : USING THE MENUS OF THE M5000 CC SERVER APPLICATION

OBJECTIVE

- To present all the application's menu commands, specifying transfers or links to procedures associated with these commands.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Server application is installed.

PRELIMINARY OPERATION(S)

- Commission the M5000 CC Server application (see Sheet C-0).

PROCEDURE

- The M5000 CC Server is the first application which is to be launched. The M5000 CC Server application is the core of the system. If you try to close it, no call, e-mail or Web session will be handled by the agents because they will be disconnected.
- The general M5000 CC Server application window contains the following menus (see Figure 10.4 and Tableau 10.10):

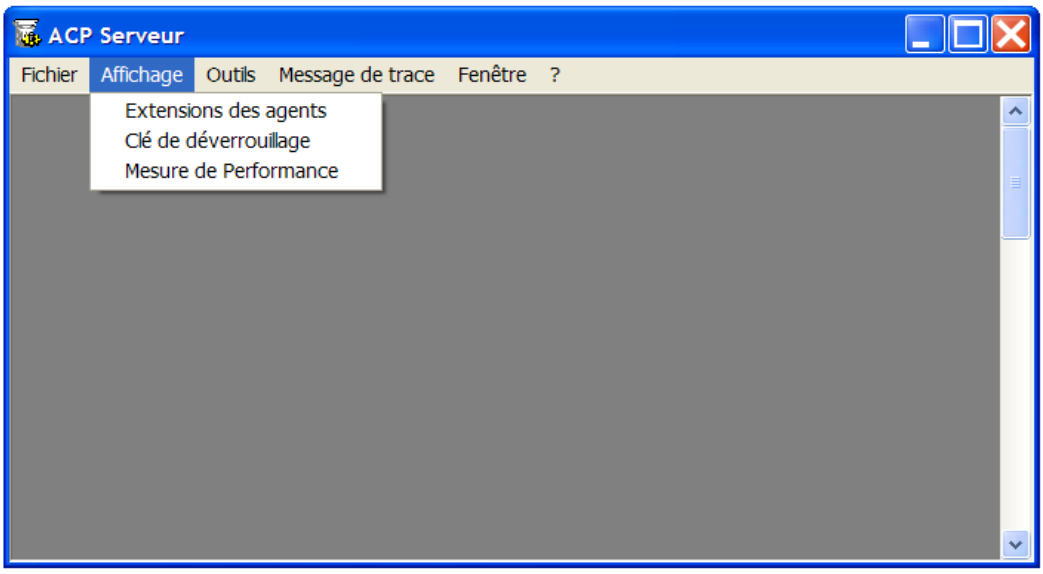


Figure 10.2 GENERAL OVERVIEW OF THE M5000 CC SERVER APPLICATION WINDOW

- Refer to the corresponding U sheets when you need more information on a particular command:

Tableau 10.10 LIST OF APPLICATION MENU COMMANDS M5000 CC SERVER

MENUS AND COMMANDS	FUNCTION OR COMMENT	SHEET NO.
File :	Access to general commands	
Print	Command to print 4 types of document ("Key code", "Server connection messages", "Agent extensions " or "Connected components")	U-10
Exit	Command to close the application	U-11
View :	Access to commands to open the following Server state display windows (see note)	
Agent extensions	Opens the "Agent extensions" management window	U-20
Client extension	Opens the "Client extensions" management window	U-21
Key code	Opens the "Key code" management window	U-22
Tracking tool	Opens the "Tracking tool" debug help window	U-23
Performance measurement	Opens the "Performance measurements" configuration and display window	U-24
Tools:	Access to the "Demonstration mode" tool	
Demonstration mode	Command to activate/deactivate the "Demonstration mode"	U-30
Window :	Access to commands which describe the windows that are open on the screen:	
Cascade	"Cascade" display commands	
Tile Horizontally mode	Command to display in Tile Horizontally mode	
Tile Vertically	Command to display in "Tile Vertically"	
<List of open windows for this application>	Command used to activate in the foreground the window selected from the list of open windows	
?	Access to "A bout" the application	

Note: The "Server logged messages " and "Connected components" windows are opened automatically at the same time as the main M5000 CC Server application window (see the following descriptions).

Description of "Server - Logged messages window"

The **"Server Logged Messages"** window shows you the basic parameters on start-up, and the M5000 CC Server status (see Figure 10.3).

These messages are particularly interesting in that they are used to check the proper startup of M5000 CC Server, of the Statistics Builder application and the CSTA link connection during initial installation, or during maintenance following a restart. We recommend that you perform these checks before starting other Mitel 5000 Contact Center applications.

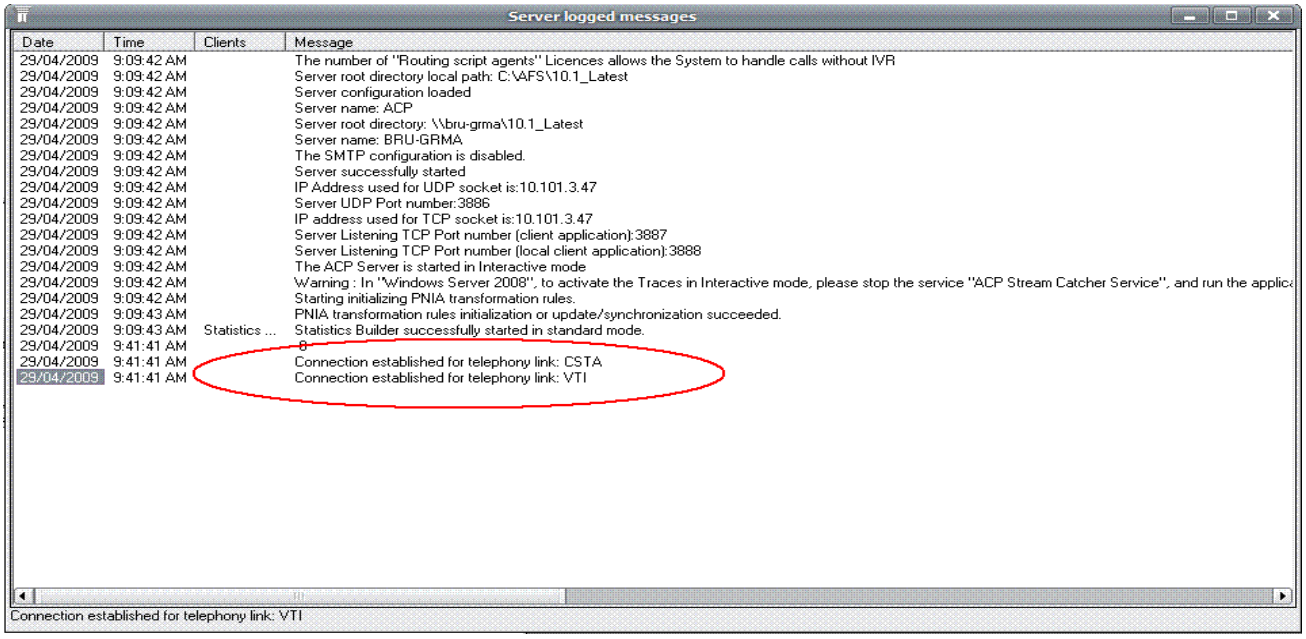


Figure 10.3 THE APPLICATION'S "SERVER LOGGED MESSAGES" WINDOW: M5000 CC SERVER

Description of the "Connected components" window

The **"Connected components"** window indicates the applications that are connected to the M5000 CC Server, such as M5000 CC Media Server, the Statistics Builder application, M5000 CC User, M5000 CC Administrator, M5000 CC Service Manager and the different e-mail manager components that appear with the associated profile name.

U-10 : FILE MENU: PRINT

OBJECTIVE

- Print one of the 4 documents available ("Key codes", "Server logged messages", "Agent extensions " or "Connected components").

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Server application is installed.

PRELIMINARY OPERATION(S)

- Commission the M5000 CC Server application (see Sheet C-0).

PROCEDURE

- Select the **[Print]** command in the **[File]** menu of the M5000 CC Server application, then any of the 4 options from the drop-down menu:
  - **[Key code]**,
  - **[Server connection messages]**,
  - **[Agent extensions]**, or
  - **[Connected components]**.
- An HTML document is edited in Internet Explorer when you select this command.
- To print this document, use the normal Internet Explorer print option.

U-11 : FILE MENU : EXIT

OBJECTIVE

- Closes the M5000 CC Server application.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Server application is installed.

PRELIMINARY OPERATION(S)

- Commission the M5000 CC Server application (see Sheet C-0).
- If necessary, first configure the "Server shutdown parameters " in the M5000 CC Administrator application (see Sheet U-312).

PROCEDURE

- Select the **[Exit]** command from the **[File]** menu of the M5000 CC Server application.

COMMENTS

When the M5000 CC Server shutdown procedure is started, the M5000 CC Server sends a notification to all the connected components. The interactive components connected (M5000 CC Administrator, M5000 CC Service Manager, M5000 CC User, M5000 CC User API and M5000 CC Wall Display) are informed of the closure of the M5000 CC Server and a messages asks them to close their application.

Then, the M5000 CC Server checks a stop execution rule before stopping. This rule respects two configurable parameters (see the **{Server shutdown}** tab, Sheet U-312):

- ***{Maximum number of interactive connected components before stop}*** *(MaxConnectedComponentsBeforeStop)* field:
- ***Maximum stop pending duration*** *(MaxStopPendingTime)* (default value = 60 [Seconds])

The "MaxStopPendingTime" parameter represents the maximum time we accept to wait before the number of interactive connected components is inferior or equal to the "MaxConnectedComponentsBeforeStop" parameter value. Once this time has elapsed, if the shutdown execution rule has not yet been respected, the shutdown procedure is stopped and the M5000 CC Server keeps running normally.

Connected M5000 CC Media Server are also alerted about the initiation of the M5000 CC Server shutdown procedure. Once they have received this notification, they will take no new calls.

- If the M5000 CC Server shutdown rule is not checked before the maximum stop pending time is reached, a message stating that **"The Server application shutdown has been cancelled, the termination rule was not checked"** indicates that the M5000 CC Server shutdown has been cancelled. The M5000 CC Media Servers then return to their normal activity.
- If the M5000 CC Server shutdown execution rule is checked before reaching the maximum stop pending time, the M5000 CC Server and the M5000 CC Administrator shut down immediately and the M5000 CC Media Servers are stopped.

The M5000 CC Server closes the Statistics Builder application before terminating. If this latter is busy, the M5000 CC Server application waits for 30 seconds and then shuts down.

During the shutdown phase, the M5000 CC Server checks the MaxConnectedComponentsBeforeStop and MaxStopPendingTime parameters:

U-20 : DISPLAY MENU: AGENT EXTENSION

OBJECTIVE

- Accessing the **"Agent Extension"** window enables you to consult the connection statuses of agents and their extensions.

  Note: *This window opens automatically when the M5000 CC Server application starts. This menu command is therefore useful if this windows was closed in the meantime by the user.*

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Server application is installed.

PRELIMINARY OPERATION(S)

- Commission the M5000 CC Server application (see Sheet C-0).

PROCEDURE

- Select the **[Agent Extensions]** command in the M5000 CC Server application's **[View]** menu.

COMMENTS

The **"Agent Extensions"** window gives you the state (and other information) of the extensions the M5000 CC Server has at its disposal to transfer the calls. The columns in the window display the following main parameters :

- ***{Ext. number (DN)}***: phone number associated to the extension
- ***{Connection status}***: used to find out whether or not an agent is connected to the extension
- ***{Status}*** : indicates one of the following extension statuses:
  - "Free": no call is using the extension at the moment
  - "Reserved": a call has the status "Reserved" on the extension
  - "DCP" The agent is having a conversation on the extension,
  - "On hold": the agent has put the call on hold
  - "Private Inbound Call": the agent is using the extension for inbound "private" calls, i.e. he receives calls which are not distributed by the application
  - "Private Outbound Call": The agent is using the extension for outbound "private" calls, i.e. he is making calls which are not distributed by the application (for outbound campaigns).

U-21 : DISPLAY MENU: CLIENT EXTENSION

OBJECTIVE

- Accessing the **"Client Extension"** window enables you to consult the connection statuses of clients and their extensions.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Server application is installed.

PRELIMINARY OPERATION(S)

- Commission the M5000 CC Server application (see Sheet C-0).

PROCEDURE

- Select the **[Client Extensions]** command in the M5000 CC Server application's **[View]** menu.

COMMENTS

The **"Client Extensions"** window is only available when a M5000 CC Media Server is launched. The columns in the window display the following main parameters :

- ***{DN}***: represents the extension number
- ***Monitored***: specifies whether or not the extension is monitored
- ***Client Specific Id***: resource name given in the administrator, media server menu
- ***{Client ID}***: M5000 CC Media Server identifier in which the extension is defined (identical to the one given in the M5000 CC Media Server in the connected components window)
- ***Call state***: specifies the status of the extension
- ***{# calls}***: specifies the number of calls present on this extension
- ***Opening/closing status***: specifies the opening/closing status of inbound call type extensions (see Section 8.3.1.9.2).

U-22 : DISPLAY MENU: DONGLE

OBJECTIVE

- Access the **"Key code"** window to consult the key code and characteristics of the functions installed in Mitel 5000 Contact Center.

Nota :
- *You can also access this window to activate or modify the key code via the M5000 CC Administrator application (see Sheet U-330).*
- *This window opens automatically when the M5000 CC Server application starts. This menu command is therefore useful if this windows was closed in the meantime by the user.*

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Server application is installed.

PRELIMINARY OPERATION(S)

- Commission the M5000 CC Server application (see Sheet C-0).

PROCEDURE

- Select the **[Kcode]** command in the M5000 CC Server application's **[View]** menu:

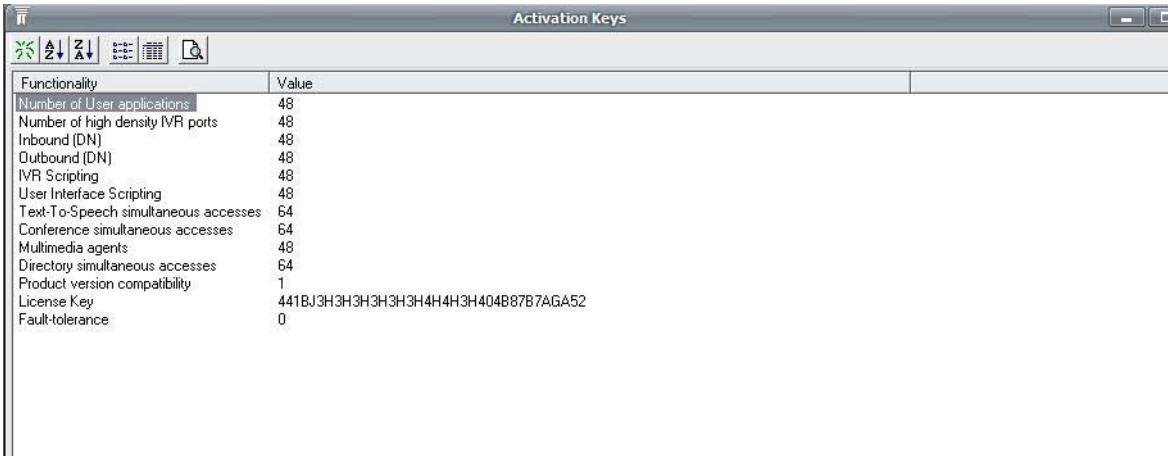


Figure 10.4 THE APPLICATION'S "KEY CODE" WINDOW M5000 CC SERVER

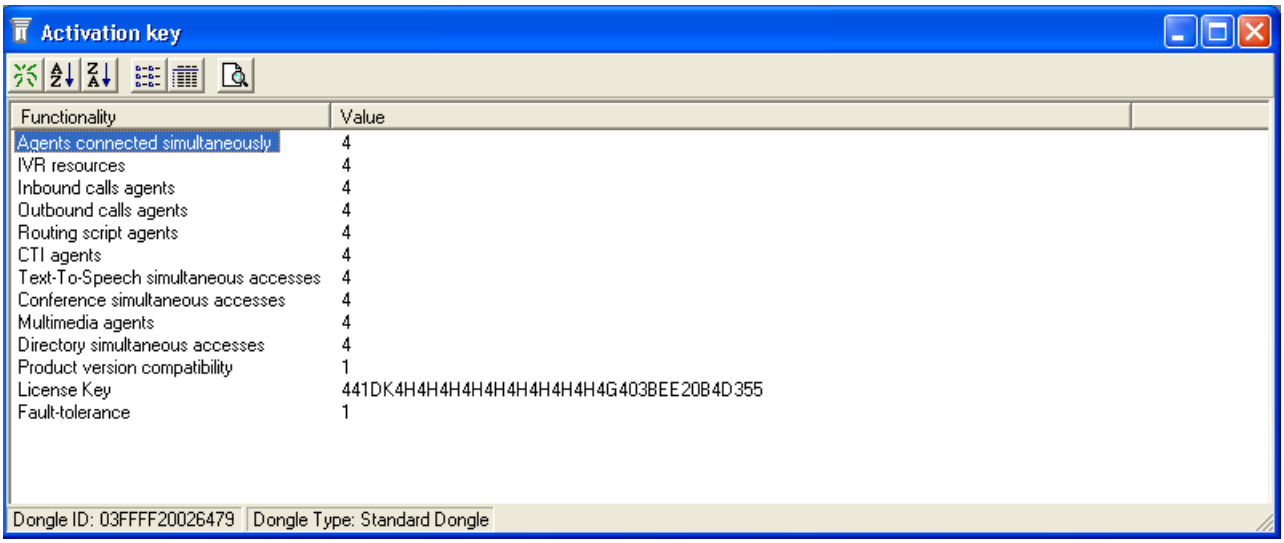
COMMENTS

The **"Key code"** window lets you view the Mitel 5000 Contact Center functions according to the dongle specifications.

Note: Refer to the general information about the "Dongle" and "key codes" in Section 8.3.8.1.

The columns in the window display the following main parameters :

- ***{Functionality}***: names of the functions installed
- ***{Value}***: Version or quantity applicable to the functionalities installed (e.g. : Number of IVR ports)


Activation key
Functionality
Value
Agents connected simultaneously 4
IVR resources 4
Inbound calls agents 4
Outbound calls agents 4
Routing script agents 4
CTI agents 4
Text-To-Speech simultaneous accesses 4
Conference simultaneous accesses 4
Multimedia agents 4
Directory simultaneous accesses 4
Product version compatibility 1
License Key 441DK4H4H4H4H4H4H4H4H4H4G403BEE20B4D355
Fault-tolerance 1
Dongle ID: 03FFFF20026479
Dongle Type: Standard Dongle

U-23 : DISPLAY MENU: TRACKING TOOL

OBJECTIVE

- Accessing the **"Tracking tool"** window lets you record tracking messages on the system's extensions.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Server application is installed.

PRELIMINARY OPERATION(S)

- Commission the M5000 CC Server application (see Sheet C-0).
- You must run the **"Streamcatcher"** application before starting the tracking tool (see the beginning of this online help).

PROCEDURE

- Select the **[Tracking tool]** command in the M5000 CC Server application's **[View]** menu.

COMMENTS

The **"Tracking Tool"** window contains the following information:

- ***{Date}***: message log date
- ***Time***: message log time
- ***Clients***: application which logs the message (if the message is logged by the M5000 CC Server, the field remains empty)
- ***{DN}***: extension monitored by CSTA,
- ***{Messages}***: message logged

As you can see, the pop-up menu displays all agent extensions and all key telephone extensions that are monitored by the M5000 CC Server.

- By right-clicking in the window, you can choose the type of tracking to activate the extension for which you want to have tracking messages.
- By selecting **All Extensions (/No Extension)**, you can activate (/deactivate) in one operation the tracking of all extensions (agent and client).
- By selecting **All Agent Extensions**, you can activate in one operation the tracking of all agent extensions.
- By selecting **All Key Telephone Extensions**, you can activate the traces of all key systems phones. The extensions of these key telephones are added in the list of the extensions that can be tracked in this same pop-up menu. We can thus activate the traces on a single key system extension.

U-24 : DISPLAY MENU: PERFORMANCE MEASUREMENT

OBJECTIVE

- Accessing the **"Performance measurement"** window lets you parameter and display the system performance measurements.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Server application is installed.

PRELIMINARY OPERATION(S)

- Commission the M5000 CC Server application (see Sheet C-0).
- You must run the **"Debug Viewer"** application before starting the tracking tool (see the beginning of this online help).

PROCEDURE

- Select the **[Performance Measurement]** command in the M5000 CC Server application's **[View]** menu.

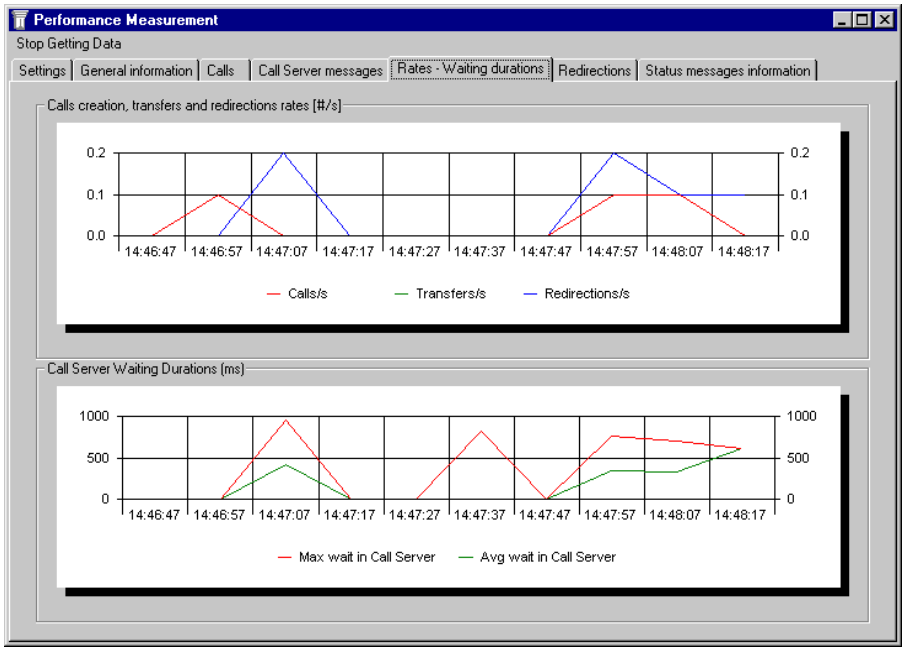


Figure 10.5 M5000 CC SERVER APPLICATION "PERFORMANCE MEASUREMENT" WINDOW

1 ***{Parameters}*** **tab**

Before starting the performance measurements, some parameters must be set in the ***{Settings}*** part of the **"Performance Measurement"** window. These parameters concern the timers used for the measurements as well as the different histograms.

Two different timers are used in order to indicate the period between two successive value calculations. The first one concerns the computing of the number of calls in the system as well as the number of messages processed by the connected Call Servers. These values are also called instant values.

The second timer is responsible for the computing of the different rates and the waiting duration values.

The period of each timer must be selected. Change the ***{Timer period for instant values}*** value and give the period you need for the instant values timer. The rate timer period can be indicated in the ***Rate and Wait duration timer period*** textbox. The value of these two parameters must be between 0 and 60 seconds.

The number of visible columns in each histogram can also be selected. For the "Number of calls" (see the {Calls} ***tab*** be-low) and {Number of calls server messages} ***tab*** be-low), histograms, indicate the number of columns in the ***{Number of columns (for calls)}*** text box. Likewise, the number of columns of the "Call creation and transfer rates [#/s]" and the "Call Server Waiting durations (ms)" histograms (see the {Creation and transfer rates - Waiting durations} ***tab*** be-low) can be changed in the ***{Number of columns (for rate)}*** text box.

The number of columns must be set between 0 and 100.

When these values are set, click on the ***[Stop Getting Data]*** menu to start calculating performances.

Note: *The settings can be modified at any time but the new values are going to be taken into account only when the* ***Start Getting Data*** *menu is clicked.*

2 ***{General information}*** **tab**

All the displayed information is very useful when executing load tests on the M5000 CC Server and M5000 CC Media Server applications. For instance, depending on the call arrival rate, the Number of messages from theM5000 CC Media Server may increase and the waiting durations may be longer. This way, the M5000 CC Media Server's load becomes high.

{Calls} part:

The following information is displayed concerning the calls:

- The number of calls handled by the system.
- The number of calls that arrived in the system, per second, since the last refresh (arrival rate).

Broadcasts} part:

The following information is displayed about the broadcasts:

- Number of datagrams to send
- Broadcasts length
- Remote broadcasts length
- Number of Connected Innerflow Servers

{Call Server messages queues} part:

The following information is displayed for each connected M5000 CC Media Server:

- The number of messages in the M5000 CC Media Server Queue.
- The arrival rate of these messages in the M5000 CC Media Server.
- The average waiting time before a message is processed.
- The maximum waiting time before a message is processed.

{Transfers} or ***{Redirections}*** part:

Rate requested for the transfer or redirection sent to CSTA.

{Call distribution part:

The displayed instant values are:

- The duration of the last search of a call for an idle agent.
- The duration of the last search of an agent for a new call.
- The duration of the last change of status (when for example a call is distributed to an agent).

3 ***{Calls}*** **tab**

The histogram indicates the number of calls currently handled by the system. The number of columns and the refresh period depend on the parameters set.

4 ***{Latency rates}*** **tab**

The ***Call creation, redirection and transfer*** histogram indicates the number of calls per second, the number of transfers per second (with IVR) and the number of redirections (without IVR) since the last refresh of the histogram (during a timer period). The number of columns and the timer period are indicated in the settings.

Moreover, the ***{Call creation latency (ms)}*** histogram gives the maximum and average time taken by the M5000 CC Media Server to react to the creation of a call in the server. This time is only calculated for the first M5000 CC Media Serverconnected. Moreover, this time is only realistic if a configuration without IVR resources (Dialogic) is used.

5 ***{Redirections}*** **tab**

The histogram provides information about the average and maximum waiting times for the execution of a redirection. The average and maximum values are calculated within a time slot which is defined in the parameters. The number of columns may also be defined in the parameters.

6 ***{Status message information}*** **tab**

The status messages contain real-time information about the agents, the Services, the filters and the remote servers. Only information about statuses which have been modified since the last time information was sent is included in the new status message. The **"Change rate"**, included in the **"Status message rate"**, indicates (as a %) the amount of information which has been modified since the last broadcast message.

Each message sent is coded: the **"Compression rate"** indicates (as a %) the gain in message length reached thanks to the coding.

The ***{Bandwidth measurements}*** histogram shows the bandwidth used when the status messages are sent by broadcast (Bandwidth for datagram) and the bandwidth used when client applications receive status messages by making a DCOM call (bandwidth for DCOM). The bandwidth is expressed in bytes/sec.

The counter is the same as the one defined as the ***{Rate and waiting duration counter}*** in the ***{Settings}*** tab.

U-30 : TOOLS MENU: DEMONSTRATION MODE

OBJECTIVE

- Activating or deactivating the **"Demonstration Mode"**.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Server application is installed.

PRELIMINARY OPERATION(S)

- Commission the M5000 CC Server application (see Sheet C-0).

PROCEDURE

- Select the **[Demonstration Mode]** command of the M5000 CC Server application's **[Tools]** menu to reverse the current active (menu name checked) or inactive (menu name unchecked) state to "Demonstration Mode".

COMMENTS

The M5000 CC Server application can generate random values for Service statuses (see Note) in Demo Mode. Demo Mode is useful for showing the real-time statuses functionalities of the program when it is not in Production.

Note: This is information about a Service status at a given time. For example, this information includes the number of calls, the average waiting time before transfer, etc.. The Service "instants" are taken at regular intervals (every 5 seconds). They can be a basis for dynamic supervision. They are stored in the statistics database and can be used for reporting (only if the standard statistics database is used). The statuses are computed by the M5000 CC Server.

U-100 : USING THE MENUS IN THE M5000 CC MEDIA APPLICATION

OBJECTIVE

- To present all the application's menu commands, specifying transfers or links to procedures associated with these commands.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Media Server application is installed.

PRELIMINARY OPERATION(S)

Note: *The M5000 CC Server application must be launched before any other application ; there is an automatic startup of the Server, should you forget to launch it.*

- Commission the M5000 CC Media Server application (see Sheet C-100).

PROCEDURE

- The general M5000 CC Media Server application window contains the following menus (see Figure 10.4 and Tableau 10.11):

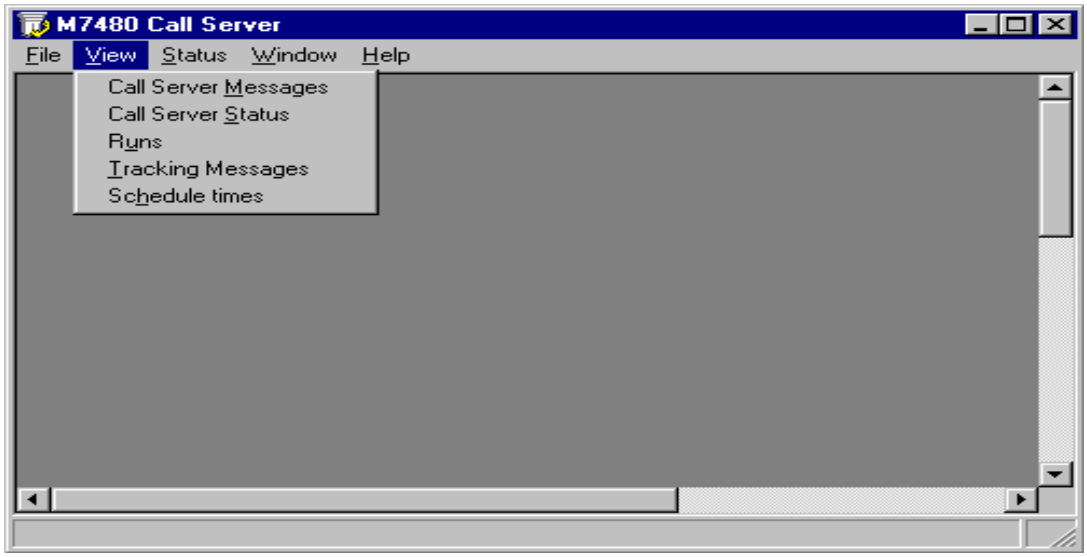


Figure 10.6 GENERAL OVERVIEW OF THE M5000 CC MEDIA SERVER APPLICATION WINDOW

- Refer to the corresponding U sheets when you need more information on a particular command:

Tableau 10.11 LIST OF M5000 CC MEDIA SERVER APPLICATION MENU COMMANDS

MENUS AND COMMANDS	FUNCTION OR COMMENT	SHEET NO.
File :	Access to general commands	
Print	Command to print 4 types of document ("Media Server Messages", "Media Server Status", "Runs View" or "Tracking Messages")	U-110
Exit	Command to close the application	U-111
View :	Access to commands to open the following M5000 CC Media Server status display windows:	
Media Server Messages	Opens the M5000 CC Media Servermessage monitoring window	U-120

Tableau 10.11 LIST OF M5000 CC MEDIA SERVER APPLICATION MENU COMMANDS

Media server status	Opens the "Media Server Status" window.	U-120
Runs	Opens the "Runs" window (a Run corresponds to the execution of a scenario on a client application)	U-121
Trace messages	Opens the M5000 CC Media Servertrace window	U-122
Times	Opens the "Times" window	
Status :	Accesses M5000 CC Media Server status configuration and display	
IVR ports load	Opens one of the "IVR port load" display histogram windows	U-130
Settings	Opens the window for configuring the display of the "IVR port load" histogram	U-130
Window :	Access to commands which describe (cascade horizontal) and activate the windows that are open on the screen:	
?	Access to "A bout" the application	

U-110 : FILE MENU: PRINT

OBJECTIVE

- Printing any of the 4 documents available ("Media Server Messages", "Media Server Status", "Runs Display" or "Tracking Messages")

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Media Server application is installed.

PRELIMINARY OPERATION(S)

- Commission the M5000 CC Media Server application (see Sheet C-100).

PROCEDURE

To print the Media Server Messages:

- Select the **[Media Server Messages]** option under the **[Print]** command in the **[File]** menu of the M5000 CC Media Server application.
- An HTMLdocument is displayed in Internet Explorer when you select this command. To print this document, use the normal Internet Explorer print option.

To print the Media Server status:

- Select the **[Media Server Status]** option under the **[Print]** command in the **[File]** menu of the M5000 CC Media Server application.
- An HTMLdocument is displayed in Internet Explorer when you select this command. To print this document, use the normal Internet Explorer print option.

To print the Runs visualization window:

This menu is enabled only when the **Runs Visualization** window is opened. If the window is not open the user will not be able to print the Runs information. There are two possible ways of printing Run information:

- From the **"Runs Display"** window (see Sheet U-121):
  - Right click in the **"Runs Vizualisation"** window and select the **[Print]** command from the scroll down menu,
  - An HTMLdocument is displayed in Internet Explorer when you select this command. To print this document, use the normal Internet Explorer print option.
- From the **[File]** menu in the main window:
  - Select the **[Runs]** option under the **[Print]** command in the **[File]** menu of the M5000 CC Media Server application.
  - An HTMLdocument is displayed in Internet Explorer when you select this command. To print this document, use the normal Internet Explorer print option.

To print the tracking messages

This menu is enabled only when the **Tracking Messages window** is opened. Otherwise, the user can't print the tracking messages. There are two possible ways of printing Tracking message information:

- From the **"Tracking Message"** window (see Sheet U-122):
  - Click the print button  .
  - An HTMLdocument is displayed in Internet Explorer when you select this command. To print this document, use the normal Internet Explorer print option.
- From the **[File]** menu in the main window:
  - Select the **[TrackingMessages]** option under the **[Print]** command in the **[File]** menu of the M5000 CC Media Server application.
  - An HTMLdocument is displayed in Internet Explorer when you select this command. To print this document, use the normal Internet Explorer print option.

U-111 : FILE MENU : EXIT

OBJECTIVE

- Closes the M5000 CC Media Server application.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Media Server application is installed.

PRELIMINARY OPERATION(S)

- Commission the M5000 CC Media Server application (see Sheet C-100).
- If necessary, first configure the "Server shutdown parameters " in the M5000 CC Administrator application (see Sheet U-312).

PROCEDURE

- Select the **[Exit]** command from the **[File]** menu of the M5000 CC Media Server application. An M5000 CC Media Server shutdown mode selection window opens.
- In this window, tick any of the following two radio buttons:
  - ***[Immediately]***,
  - ***[After the end of the current scenarios]*** (this option lets you finish the processing of the last call).
- Click ***[Validate]*** to confirm the shutdown of the M5000 CC Media Server application.

U-120 : DISPLAY MENU: CALL SERVER MESSAGES OR MEDIA SERVER STATUS

OBJECTIVE

- Accessing the M5000 CC Media Server application's two information windows **"Media Server Messages"** and **"Media Server Status"**.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Media Server application is installed.

PRELIMINARY OPERATION(S)

- Commission the M5000 CC Media Server application (see Sheet C-100).

PROCEDURE

- Select the **[Media Server Messages]** or **[Media Server Status]** command from the M5000 CC Media Server application's **[View]** menu.

COMMENTS

"Media Server Messages" windows:

The **Media Server Messages** window gives you information about:

- The startup of the M5000 CC Media Server.
- The IVR script loading state.
- Each message relating to calls received by the M5000 CC Media Server.

Note: *if the M5000 CC Media Server Messages window has been closed, it appears when a new message arrives.*

"Media Server status" window:

The **"Media Server Status** " window gives information about the different resources monitored by the M5000 CC Media Server. The information contained therein includes:

- information on resource: its activity, type, etc.
- information on the currently executed tree and node
- information on the executed "Run"
- other call related information such as the DNIS (Dialed Number Identification Service), the Service, etc.

For the **"Strapping"** function (see § 8.5.8), two pieces of information are especially important: traffic type and resource activity.

The type of traffic depends on what has been defined by the administrator in the **"Resources"** window (see Sheet U-341). An IVR resource may either process only inbound calls, or "strapping calls, or any call type (see § 8.5.8.2.2). The activity of the resource depends on its type:

- "Inbound call" type resources always have the status **"Ready"** (except when they are initialised).
- "Strapping" type resources always have the status **"Not Ready"** (except when they are initialised). In this status, the resources will never handle inbound calls. On the other hand, they will be available for change of resource.
- The status of "mixed" type resources change regularly. If their status is **"Ready"**, then they are either idle (no call is processed), or an inbound call is being processed. If the status of a "mixed" resource is **"Not Ready"**, it means that this resource has been reserved to handle a change of resource in a call pit towards an IVR resource. The status will again be returned to **"Ready"** when no change of resource needs to be executed.

U-121 : DISPLAY MENU: RUNS

OBJECTIVE

- Accessing the M5000 CC Media Server application's current "Runs" (IVR, e-mail and web) configuration and display window.

Note: *A **"Run** corresponds to the "**execution**" of a script in one client application (actually in the M5000 CC User application or M5000 CC Media Server). Each call has its own Run object(s). A Run can be associated with Voice, Web or E-mail media.*

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Media Server application is installed.

PRELIMINARY OPERATION(S)

- Commission the M5000 CC Media Server application (see Sheet C-100).

PROCEDURE

- Select the **[Runs]** command in the M5000 CC Media Server application's **[View]** menu to open the **"Runs Visualization"** window.

COMMENTS

Some of the details displayed in the **"Runs Visualization"** window concern each current Run (Run Id, Stat time, used resource if defined), whereas others concern the tree and the node that are currently executed (Tree Id, Node Id, Node name, Node type, Node start time). The refreshing of this window can be manual or automatic, according to the user's choice.

For each current run, the following information is displayed:

- ***{Run Id}***: the identifier of the Run currently executed in the M5000 CC Media Server.
- ***{Media}***: Voice, E-mail or Web. It is the Media of the current Run.
- ***{Call Id}*** (Call Identifier): the identifier given by the M5000 CC Server for each call presented in the window.
- ***{Resource}***: the resource identifier used for the Run if there is one (for Voice Runs only).
- ***{Tree Id}*** (Tree Identifier): the identifier of the tree that is currently executed for each Run.
- ***{Node Id}*** (Node Identifier): the identifier of the node that is executed in the current tree.
- ***{Node Type}***: the type of node executed in the current tree.
- ***{Node Name}***: the name given to the node that is executed in the current tree.
- ***{Node Start}***: the date when each node started being executed.
- ***{Run Start}***: the date when each Run started being executed.

The window can be updated automatically or manually. The manual mode is set by default. Click the Change refresh mode button  in the toolbar to switch to automatic mode. The same button is used to turn back to manual mode, and so on. The current mode figures on the left corner of the status bar.

"Manual" refresh mode:

The user decides when the refresh occurs. He can update the window by clicking the Refresh button immediately  . The last refresh date is displayed in the middle of the status bar. It is updated each time the Refresh button is clicked. The duration of the next automatic mode (see next paragraph) also appears to the right of the status bar.

"Automatic" refresh mode:

When the automatic mode is set, the window is refreshed every second. The "Refresh duration", "Increase automatic mode duration"  and "Decrease automatic mode duration"  buttons are disabled.

Automatic mode cannot remain selected for too long as it is time consuming. So, the user must define when the

mode will automatically turn back to manual. There are 10 possible durations:

- 5, 10 or 20 seconds, or
- 1, 5, 10 or 30 minute(s), or
- 1, 2 or 10 hour(s).

The user can see in the status bar when the automatic mode will turn off and when the last refresh occurred.

By default, the automatic mode duration is set to 30 seconds. The user can increase it or decrease it by using the appropriate buttons:

-  to increase the duration or
-  to reduce the duration.

Note: *When you change the duration's value, it is saved in the registry in order to set it as the new default value.*

U-122 : DISPLAY MENU: TRACKING MESSAGES

OBJECTIVE

- To access the **"Tracking Messages"** window which is used to display and store the M5000 CC Media Server application's tracking messages.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Media Server application is installed.

PRELIMINARY OPERATION(S)

- Commission the M5000 CC Media Server application (see Sheet C-100).
- In order to view and store the traces in a file, you must run the **"Debug Viewer"** application before starting the tracking tool (see the Installation Manual). The **[Force Carriage Returns]** option in its **[Options]** menu must be selected.

PROCEDURE

- Select the **[Tracking messages]** command from the **[View]** menu of the M5000 CC Media Server application to open the **"Tracking Messages"** window.

COMMENTS

The M5000 CC Media Server has a tracking tool. When you select the **Tracking Messages window**, the tracking session works automatically. Once the tracking session is started, it will run until the **"Tracking Messages"** window is shut down (tracking session stopped).

The tracking messages which can be viewed are:

- "Dialogic" board messages,
- CSTA messages
- M5000 CC Media Server high level messages.

The operator accesses commands using the following buttons in the toolbar of this window (from left to right): ***[Start tracking tool]***, ***[Stop tracking tool]***, ***[Erase list]*** and ***[Print]***.

U-130 : STATUS MENU: "IVR PORT LOAD" AND "SETTINGS"

OBJECTIVE

- First accessing the configuration window for IVR port load display histograms
- Accessing any of the two windows **"Average number of ports used"** or **"Average number of calls per port"** used to display the IVR port load in form of histograms

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Media Server application is installed.

PRELIMINARY OPERATION(S)

- Commission the M5000 CC Media Server application (see Sheet C-100).
- Select the **[Settings...]** command from the M5000 CC Media Server application's **[Status]** menu to open the **"Status Settings"** window:
  - In the ***{Number of statuses seen in the histogram} field,*** enter the number of statuses to be shown in the histograms, that is the number of status screenshots to be displayed. By default, this value is set to 50.
  - Click on ***[Validate]*** to confirm the modification of the value.

PROCEDURE

- Select the **[IVR** Port Load] command from the M5000 CC Media Server application's **[Status]** menu, then select one of the following two options to open the histogram window concerned:
  - ***Average number of ports used***, or
  - ***[Average number of calls per port]***.

    Note: *The "Broadcast" frequency is listed again in these windows.*

U-200 : REMOTE REPORT VIEWING

OBJECTIVE

- Editing or modifying a report
- Adding or modifying report programming
- Modifying the rights to edit the reports existing in the "LongTermReporting.mdb" database (see Section 8.4.5.1.2)

OPERATOR LEVEL

- Administrator, service manager, team manager or supervisor authorised to edit reports.
- Report administrator, for modifying report editing rights.

TOOL(S)

- Mitel 5000 Contact Center Web Server, M5000 CC Report Server and Internet Explorer.

PRELIMINARY OPERATION(S)

Note: *The M5000 CC Report Server does not have a graphical interface (see § 8.4.5). An executable which operates in "service mode" (Reporting Web service) is responsible for building the report. The statistical reports are available on a website managed by a web server and the M5000 CC Report Server. Therefore, the windows used by the consulting party are not those of the M5000 CC Report Server but those of the browser used to browse the site.*

- Open a web browser, enter the portal website name and select the [**M5000 CC reports**] link.

PROCEDURE

Selecting an action

Figure 10.7 “M5000 CC REPORT” WINDOW ON THE WEB PORTAL

The buttons in the **"M5000 CC report"** window toolbar are used as follows:

- **Immediate report**  button: for creating a new immediate report (see Sheet U-202)
- **Scheduled report**  button: for creating a new scheduled report (see Sheet U-203)
- **Rights**  button: for modifying report edition rights (see Sheet U-201)

On the list of reports, the buttons of each report are used for the following actions:

- **Edit** button: for modifying the report
- **Delete** button: for deleting the report.

Editing a detailed report as team manager or supervisor

Team managers and supervisors can only edit detailed reports if they are using a filter or if a team or agent has been chosen.

COMMENTS

Storing the settings in the web reporting service

the last settings entered by a user are proposed to him or her as default value when he or she edits a new report, or when he or she defines a new schedule. The following rules are applied to settings backup and restore.

Parameters that are independent of the report

Parameters that are independent of the report are stored in the Schedule.cfg database located on the reporting server. The "Service closing period" report (consolidated report) and "Service openings and closings (details)" report are only made up of all the independent parameters.

These parameters are backed up regardless of the report and selected service. However, backup and restore are different for editing reports and for defining a new schedule.

For edition of consolidated reports, the start and end date, as well as the start and end time, are backed up according to the consolidation level chosen.

Parameters that depend on the report

These parameters are also backed up in the Schedule.cfg. database. They are backed up and restored according to the service and report selected. However, this backup is the same for editing reports and for defining a new consolidation.

Considerations relating to the execution of requests by the M5000 CC Report Server :

- When the M5000 CC Report Server is started, only one "LongTermReporting" database instance is launched. This means that only one report generation may be launched at a time, and that this generation must be the result of an immediate request via a browser or a saved programming. If several report generation requests are received by the M5000 CC Report Server, these are placed in a queue and will be processed one after the other, from the oldest to the most recent.
- Note that any requests other than report generations are processed immediately by the M5000 CC Report Server and whether or not there are any elements in the queue has no effect on these requests.
- In order to give priority to immediate reports over programmed reports, if there are already any requests waiting in the M5000 CC Report Server a maximum of one programmed report generation will be added to the queue. The next report generation will therefore only be executed or placed in the queue once the queue no longer contains any more programmed generations to be executed. Obviously, if the queue is empty, the programming will be carried out straight away.
- The maximum number of immediate report generation requests that may be made by a user who is connected via a browser is limited to three to make sure that no single user can saturate the M5000 CC Report Server and prevent other users from generating reports quickly.

U-201 : MODIFICATION OF REPORT PRINTING RIGHTS

OBJECTIVE

- Defining report availability per service
- Defining the minimum supervision level required for report editing

OPERATOR LEVEL

- Report Administrator

TOOL(S)

- M5000 CC web server, M5000 CC Report Server and a web browser

PRELIMINARY OPERATION(S)

- Start the portal and select the **[M5000 CC reports]**, then click **Rights**  button in the toolbar.

PROCEDURE

- All the reports are displayed in three categories: consolidated reports, detailed reports, and independent reports of a service.
- For each report, you can modify the minimum supervision level by selecting the right value among Administrator, Service Manager, Team Manager or Team Supervisor.
- For each service-related report, you can open and modify the list of services for which the report is available, by clicking on the button.
- Then to confirm the changes, click ***[OK]***.

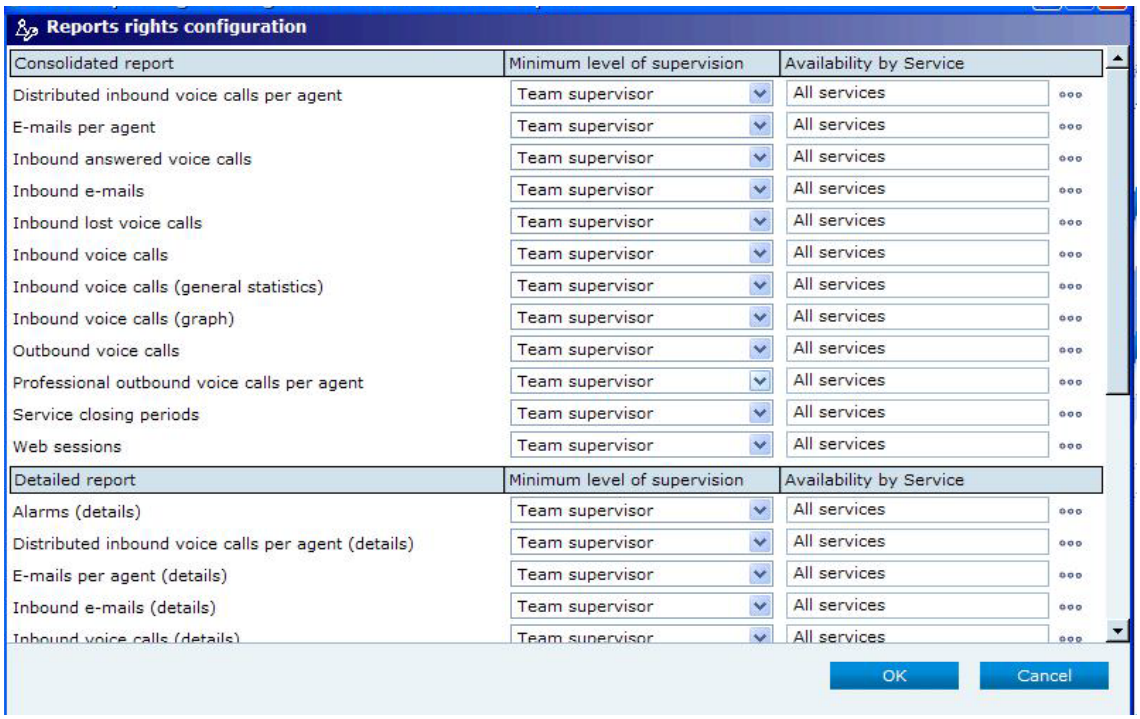


Figure 10.8 REPORT EDITING RIGHTS MODIFICATION WINDOW

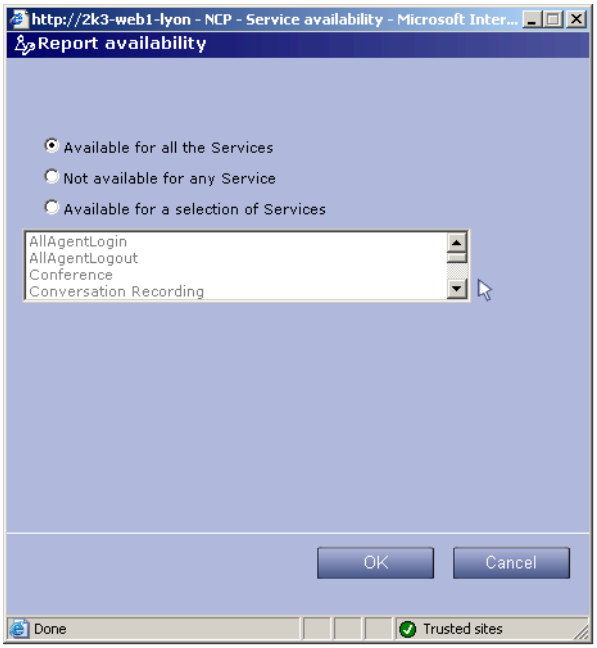


Figure 10.9 WINDOW FOR SELECTING THE SERVICES FOR WHICH A REPORT IS AVAILABLE

U-202 : INSTANT REPORT EDITING

OBJECTIVE

- To edit immediately one of the reports which exists in the LongTermReporting.mdb" database (see § 8.4.5.1.2).

OPERATOR LEVEL

- Service Manager, Team manager, or authorized Team Supervisor.

TOOL(S)

- Mitel 5000 Contact Center Web Server, M5000 CC Report Server and an Internet browser.

PRELIMINARY OPERATION(S)

- Start the portal and select the **[M5000 CC reports**] link, then click the **Rights**  button in the toolbar (see Figure 10.7 of Sheet U-200).

Note: If you are using the "Snapshot format" (see definition in Section 1.4) while editing the report, the application "Microsoft Access Snapshot Viewer" must be installed beforehand. If it is not already installed, open the **"Install Snapshot Viewer"** link on the website to download this application (see Figure 10.10).

Note: If you use the PDF format when creating report, an application capable to read PDF document such Adobe Acrobat Reader must be installed.

PROCEDURE

Selecting the report (see Figure 10.10):

- In the ***{Service name}*** drop-down list, select the Service from which you want to extract the statistical data. Only the Services of which you are manager or in which you are supervisor or manager of at least one team are proposed.
- Check the type of report:
  - ***[Consolidated]*** or
  - ***[Detailed]***,
- Select a report from the ones displayed in the ***{Report Name}*** scroll down list (see note).
- Click the ***[***Validate***]*** button to confirm: the name of the selected Service appears in the status bar.

Note: *The reports which are listed are all the reports which exist in the "LongTermReporting.mdb" database (see § 8.4.5.1.2 and details of reports in the appendix to chapter 12), and for which the language is identical to the language of the web site.*

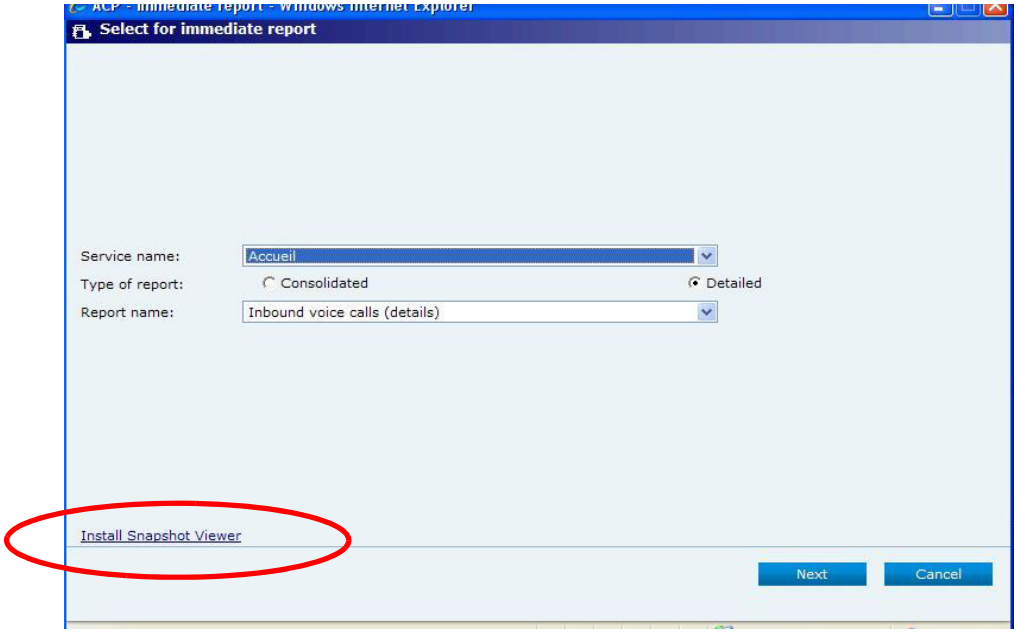


Figure 10.10 REPORT SELECTION WINDOW

Configuring the output of a "consolidated" report

- Parameters common to all reports:
  - the ***{Consolidation}*** (precision) level of the report, to be selected from the following values in a scroll down list:
    - u "1/4 h",
    - u "1/2 h",
    - u "Hour",
    - u "Day",
    - u "Week",
    - u "Month".

    Note: *if you select consolidation per quarter hour for a year, an enormous number of records will need to be loaded, which may make the M5000 CC Report Server inoperable for a time,*
  - the start and end ***{***date***}*** of the statistical data to be included in the report
  - the start and end ***{***time***}*** of the statistical data to be included in the report

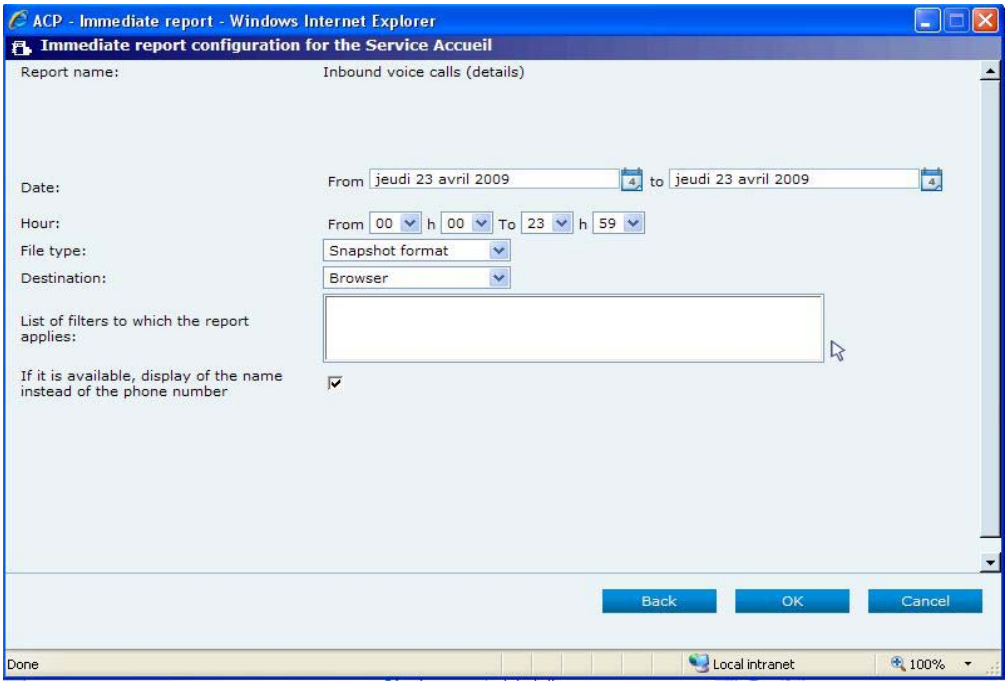


Figure 10.11 REPORT EDITING CONFIGURATION WINDOW

Nota :

- *Both of these fields may only be modified if a 1/4 h, 1/2 h or Hour type consolidation level is selected. For the other consolidation levels, the period taken into account is automatically set as being from 00.00 to 23.59.*
- *The reports always include the whole period (determined by the consolidation level) which contains the start and end times. In addition, the consolidation periods always start either on the hour, the quarter hour, or the half hour (i.e. 0.00, 0.15, 0.30, 0.45, 1.00, 1.15, etc. and not 0.01, 0.16, 0.31, etc.).*

  Therefore, if you want to have, for example, a report which is consolidated every half hour for calls answered between 8.00 and 17.00, you must specify as start time a value between 8.00 and 8.29 and as end time a value between 16.30 and 16.59. You will then have a report which is based on consolidated data, starting at 8.00 and finishing at 16.30 (this will include statistical data up to 16.59 and 59 seconds).

- The ***{***file ***type}*** to be exported from "Microsoft Access": to be selected from the following values:
  - u "Snapshot Format" or "PDF Format" depending on the Report server configuration (see Generating PDF report)
  - u "Microsoft Excel" (see note below and § "Comments" at the end of the Sheet).

Note: *The "Microsoft Excel" format is only intended for users who want to rework data extracted from the statistical database. It is in no way adapted to the presentation of this data as a report (see § "Comments" at the end of the Sheet).*

- the ***{***d***estination}*** to which the report is to be sent, to be selected from the following drop-down list:
  - "Mailbox": enter the e-mail address to which the report is to be sent. Several addresses can be entered, separated by the punctuation marks ";"or ",",
  - "Network printer": enter the name of the printer from which the report is to be printed, from he network printers available for the PC hosting the M5000 CC Report Server,
  - "Web browser",
  - "Shared directory": the path to the directory where the report is to be saved. This directory must be available on the PC hosting the M5000 CC Report Server. The "Reporting Server Attached Files" directory is suggested by default. This directory is located in the M5000 CC File Structure.

Note: *If the "Microsoft Excel" format is selected, you will not be able to send the report to a printer as this format is not intended to be a medium for presenting statistical data (see § "Comments" at the end of the Sheet).*

- Parameters which depend on the report selected:

- the **{filter}** to be applied to the statistical data, to be chosen from the filters defined in the current Service and for which the user has user rights
- upper and lower **{bounds}** used to sort the calls
- the **{agents}** to whom the report must apply, to be chosen among the agents for whom the user has supervision rights. Several agents can be selected from the list proposed. A button also enables you to select/deselect all the agents. Another button is used to include the agents deleted from the system in this list or to exclude them from it.
- the **{teams}** to whom the report must apply, to be chosen from the teams for which the user has supervision rights. Several teams can be selected from the list proposed. A button also enables you to select or deselect all the teams. The content of these teams are the system's agents, but also agents deleted from the system.
- the activity codes **{Not Ready}** and **{TPA}** to which the report must apply, from the list proposed.
  If these codes are labelled, the label will appear on the website interface.

• Click o*[*Validate*]* to start the edition.

COMMENTS

Configuring the edition of a "detailed" report

• The configuration of these types of report is identical to that of a "consolidated" report, except for the consolidation aspect which does not apply to a "detailed" report.

Exporting the Report in Microsoft Excel format:

A report may be exported in "Excel" format via the M5000 CC Report Server. The file which is obtained is not a report itself, but contains all the data needed to draft a report.

This file may be sent to an e-mail mailbox, saved in a shared directory or displayed in the Web browser. However, it cannot be sent to a printer.

This file contains two sheets:

• the **arguments** sheet and

• the **data** sheet.

Nota : • *You need Microsoft Excel 2000 to benefit from all the possible functionalities such as custom reports.*

• *Even if Microsoft Excel is not installed on the M5000 CC Report Server PC you can still export a report in Microsoft Excel format. However, only the data sheet is available at that time and certain headers, such as the format of certain cells are different.*

1 Argument Sheet:

This sheet contains the arguments used to create the report:

- name of the report,
- department,
- filter,
- start and end of the date intervals,
- start and end of the time intervals,
- precision level,
- list of selected agents,
- list of selected teams.

These arguments are always present in the sheet.

Bounds used to sort the data: both bounds, as well as the common identifier are displayed. The identifier is used to find the corresponding data.

Other arguments which belong to the report.

2 Data Sheet:

This sheet contains the data which is used to create the corresponding report. This data is produced by a request made to the "LongTermStatistics" database. If the corresponding report is a predefined report, the headers for most of the fields will correspond to fields in the report's own table. Consult the on-line help for the complete description of this field. For a customized report, the headers depend on the names selected by the report developer.

Some reports use bounds to sort data. Three fields are present in the data sheet for each pair of bounds:

- Identifier <=Lower bound,
- Lower bound < Identifier <= Upper bound,
- Identifier > Upper bound.

For the description of the bounds, find the description which corresponds to the identifier in the "Arguments" table. The three fields contain the number of records for which the variable considered (Ringing duration for the example above) is lower than or equal to the lower bound, between the two bounds (including the upper bound) and greater than the upper bound.

U-203 : AUTOMATIC AND SCHEDULED REPORT EDITING

OBJECTIVE

- To edit automatically, by configuring a schedule, one of the reports which exists in the LongTermReporting.mdb" database (see § 8.4.5.1.2).

Note: *With the web reporting service reports can be edited automatically according to a selected frequency. Each user can add, modify or delete automatic schedules.*

OPERATOR LEVEL

- Service Manager, Team manager, or authorized Team Supervisor.

TOOL(S)

- Mitel 5000 Contact Center Web Server, M5000 CC Report Server and an Internet browser.

PRELIMINARY OPERATION(S)

- Start the portal and select the **[M5000 CC reports]** link, then click **Scheduled report**  button in the toolbar or select an existing schedule from the schedules list(see Figure 10.7 of Sheet U-200).

Note: If you are using the "Snapshot format" (see definition in Section 1.4) while editing the report, the application "Microsoft Access Snapshot Viewer" must be installed beforehand. If it is not already installed, open the **"Install Snapshot Viewer"** link on the website to download this application (see Figure 10.10).

Note: If you use the PDF format when creating report, an application capable to read PDF document such Adobe Acrobat Reader must be installed.

PROCEDURE

Report scheduling

With the web reporting service reports can be edited automatically according to a selected frequency. Each user can add, modify or delete schedules. These are, however, user-specific. Users may therefore only delete schedules which they themselves have defined (see step **4** in this Sheet).

1 Adding a new planning key

Once you click on the ***[Scheduled report]*** button in the tool bar, you can add a new schedule (see examples of fields in Figure 10.10 of Sheet U-202):

- In the ***{Service name}*** scroll down list, select the Service from which you want to extract the statistical data. Only the Services of which you are manager or in which you are supervisor or manager of at least one team are proposed.
- check the type of report:
  - ***[Consolidated]*** or
  - ***[Detailed]***,
- select a report from the ones displayed in the ***{Report Name}*** scroll down list (see note).
- Click the ***[***Validate***]*** button to confirm:

Note: *The reports which are listed are all the reports which exist in the "LongTermReporting.mdb" database (see § 8.4.5.1.2 and details of reports in the appendix to chapter 12), and for which the language is identical to the language of the web site.*

If a Service name is needed for the new schedule in the selected report, it will appear in the status bar. You may then start to configure the schedule (see step **3** in this Sheet).

2 Modifying an existing schedule

In the **"M5000 CC reports"** application main window (see Figure 10.7 of Sheet U-200), you can delete one of the schedules you have personally defined by clicking the **[Delete] button** on the right side of the scheduling line concerned (see Figure 10.7 of Sheet U-200):

If you choose to modify one of them, the schedule configuration window will appear, listing the data which you entered earlier (see step **3** in this Sheet).

3 Configuring a schedule

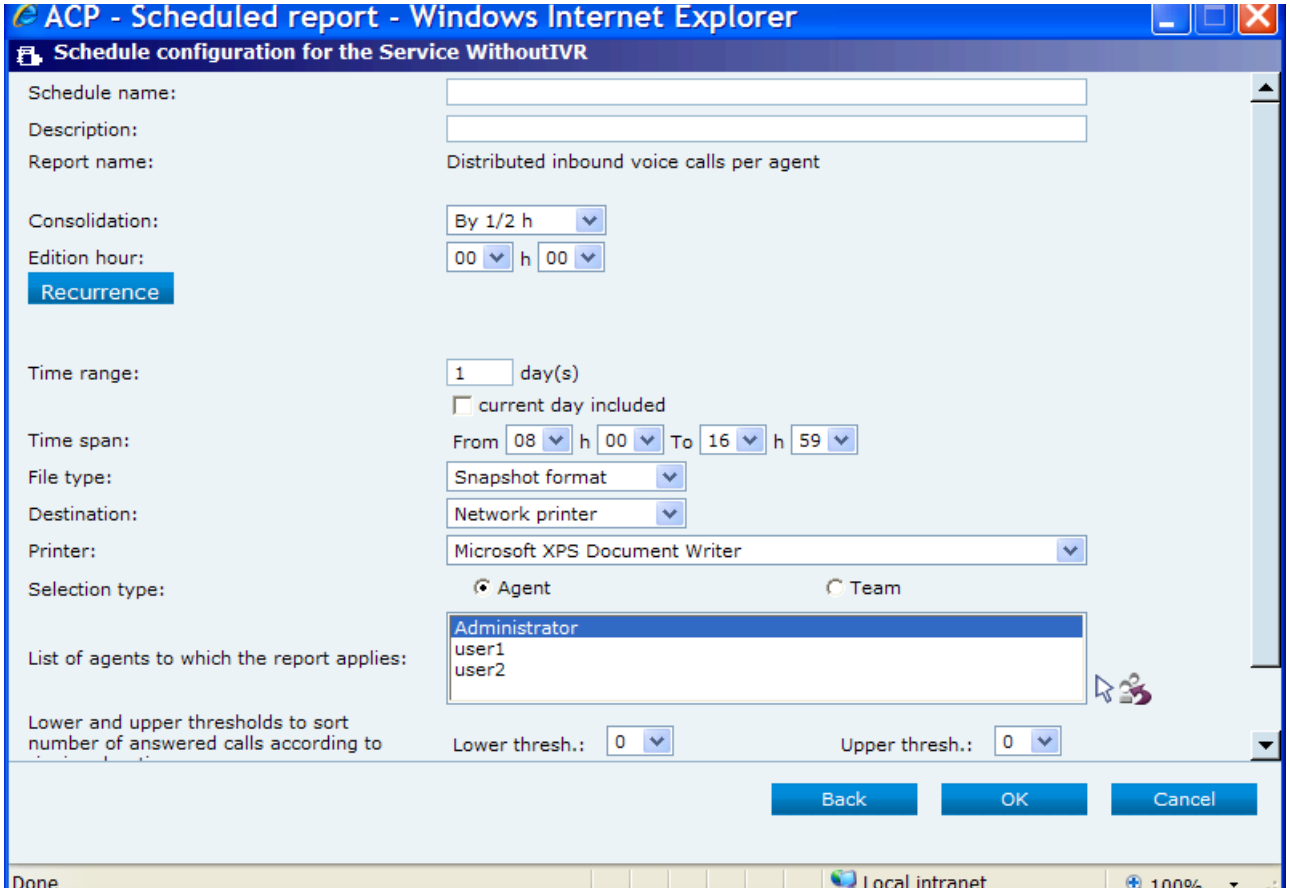


Figure 10.12 SCHEDULE CONFIGURATION WINDOW

You must provide the following information to configure a schedule:

- the ***{Schedule name}***. This field can only be modified if a new schedule is to be added,
- the ***{Description}*** that you wish to give to your schedule,
- the ***{Action}*** you wish to carry out: "save "or "delete" the automatic action,
- the ***{Name of the report}*** of the report that you wish to edit and to which the automatic edition applies. This field cannot be modified and contains the name of the report that you selected when you selected an action.
- the ***{Consolidation}*** (precision) level of the report, to be selected from the following values in a scroll down list:
  - u "1/4 h",
  - u "1/2 h",
  - u "Hour",
  - u "Day",
  - u "Week",
  - u "Month".

  This information is only available for consolidated data reports.

  Note: *if you select consolidation per quarter hour for a year, an enormous number of records will need to be loaded, which may make the M5000 CC Report Server inoperable for a time,*
- the start and end ***{date}*** of the statistical data to be included in the report
- the start and end ***{time}*** of the statistical data to be included in the report

Nota :
- *Both of these fields may only be modified if a 1/4 h, 1/2 h or Hour type consolidation level is selected. For the other consolidation levels, the period taken into account is automatically set as being from 00.00 to 23.59.*
- *The reports always include the whole period (determined by the consolidation level) which*

contains the start and end times. In addition, the consolidation periods always start either on the hour, the quarter hour, or the half hour (i.e. 0.00, 0.15, 0.30, 0.45, 1.00, 1.15, etc. and not 0.01, 0.16, 0.31, etc.).

Therefore, if you want to have, for example, a report which is consolidated every half hour for calls answered between 8.00 and 17.00, you must specify as start time a value between 8.00 and 8.29 and as end time a value between 16.30 and 16.59. You will then have a report which is based on consolidated data, starting at 8.00 and finishing at 16.30 (this will include statistical data up to 16.59 and 59 seconds).

- the '***{Editing time (hh:mm)}*** when you want the report to be edited,
- the automatic editing recurrence: Click on the ***[Recurrence...]*** button to indicate precisely the editing frequency,
- the ***{Range}*** of the statistical data to be included in the reports (in days for consolidation every 1/4 hour, 1/2 hour, hour or day, in weeks for consolidation every week and in months for consolidation every month).
  You must also specify whether you want to include the data for the current day/week/month in you report by checking the ***[Include current week]*** box,
- the ***{Type of file}*** to be exported from Microsoft Access, from among the following options:
  - "Snapshot Format" or "PDF Format" depending on the Report server configuration (see Generating PDF report)
  - "Microsoft Excel" (see § "Comments" at the end of the Sheet U-202).
- the ***{Destination}*** to which the report is to be sent, from among the following options:
  - "Mailbox": enter the e-mail address to which the report is to be sent. Several addresses can be entered, separated by the punctuation marks ";"or ",",
  - "Network printer": enter the name of the printer from which the report is to be printed, from he network printers available for the PC hosting the M5000 CC Report Server,
  - "Shared directory": the path to the directory where the report is to be saved. This directory must be available on the PC hosting the M5000 CC Report Server. The "Reporting Server Attached Files" directory is suggested by default. This directory is located in the M5000 CC File Structure.

Note: *If the "Microsoft Excel" format is selected, you will not be able to send the report to a printer as this format is not intended to be a medium for presenting statistical data (see section "Comments" at the end of the Sheet U-202).*

- Parameters which depend on the report selected:
  - the **{filter}** to be applied to the statistical data, to be chosen from the filters defined in the current Service and for which the user has user rights
  - upper and lower **{bounds}** used to sort the calls
  - the **{agents}** to whom the report must apply, to be chosen among the agents for whom the user has supervision rights. Several agents can be selected from the list proposed. A button also enables you to select/deselect all the agents. Another button is used to include the agents deleted from the system in this list or to exclude them from it.
  - the **{teams}** to whom the report must apply, to be chosen from the teams for which the user has supervision rights. Several teams can be selected from the list proposed. A button also enables you to select/deselect all the teams. The content of these teams are agents of the system, but also agents deleted from the system.
  - the activity codes **{Not Ready}** and **{TPA}** to which the report must apply, from the list proposed. If these codes are labelled, the label will appear on the website interface.
- Click ***[***Validate***]*** to validate the configuration.

4 Deleting a schedule

In the **"M5000 CC reports**" application main window showing the list of created schedules (see Figure 10.7 of Sheet U-200), you can delete one of the schedules you have personally defined by clicking the  button on the right side of the scheduling line concerned (see Figure 10.7 of Sheet U-200):

A user can therefore only delete schedules that he has defined. A schedule will be automatically deleted by the M5000 CC system in the following circumstances:

- When the Service to which the schedule applies is deleted.
- When the user who defined the schedule is deleted.

- When the user who defined the schedule loses his team supervisor or manager rights for the Service concerned.

U-210 : CREATE, ADD, AND TEST A CUSTOMIZED REPORT IN THE "LONGTERMREPORTING.MDB" DATABASE

OBJECTIVE

There is no automatic way of creating a customized report on the basis of an existing report or of creating a new report. The only solution is to fill in the various 'LongTermReporting.mdb' configuration tables manually and create your own report.

Note: See the general information on the "LongTermReporting.mdb" database in § 8.4.5.1.2 and the detailed description of the tables in the appendix to § 12.2.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- "Access" application Wizard (usable Wizard example).

PROCEDURE

1 Presentation of the report configuration tables

The customized reports are configured according to the following "LongTermReporting" tables (see Figure 10.13):

- "Reports" Table:

  You must add a new record to this table for each customized report in order to obtain the list of reports for a given language. The **Name** field contains the name of the report as it will be displayed on the web interface report list. The **ReportId** field is a common identifier for the corresponding reports but in two different languages. For example, the "Agent statuses and activities" reports will have the same **ReportId field value**.

- "ReportRights" table:

  In this table, there must be a record for each **ReportId** (Reports table field). Therefore, there will only be one record for the corresponding reports, but in different languages. The **MinimumLevel** field must have a value between 1 (Administrator) and 4 (Team Supervisor) (see Sheet U-201).

- "ReportAvailabilityByService" table:

  You must not add a new record to this table for the new reports. In fact, it is easier to configure availability per service, using the web interface (see Sheet U-201).

- "ReportExcelTemplates" table:

  This table allows you to use an Excel template file (xlt/xlst) as a reference when generating the associated report in Excel format.

  Sheets generated by M5000 CC are added to a copy of the model and at the end of the generation, the associated macro is executed in order to customize file obtained before making it available to the requester.

Note: Microsoft Excel is needed

- "ReportQueries" table:

  This new table contains one record per request relative to a given report. Several requests may be needed for a single report, but only one of them must be the "start request" (the value of the "Starting" field must be set to "True").

  The "SQL" field contains the text of the request. This text may contain dynamic parameters written between "@" symbols. For instance:

```
SELECT CallTime FROM InboundVoiceCalls
WHERE InboundVoiceCalls.CallDNIS = @ParamDNIS@
```

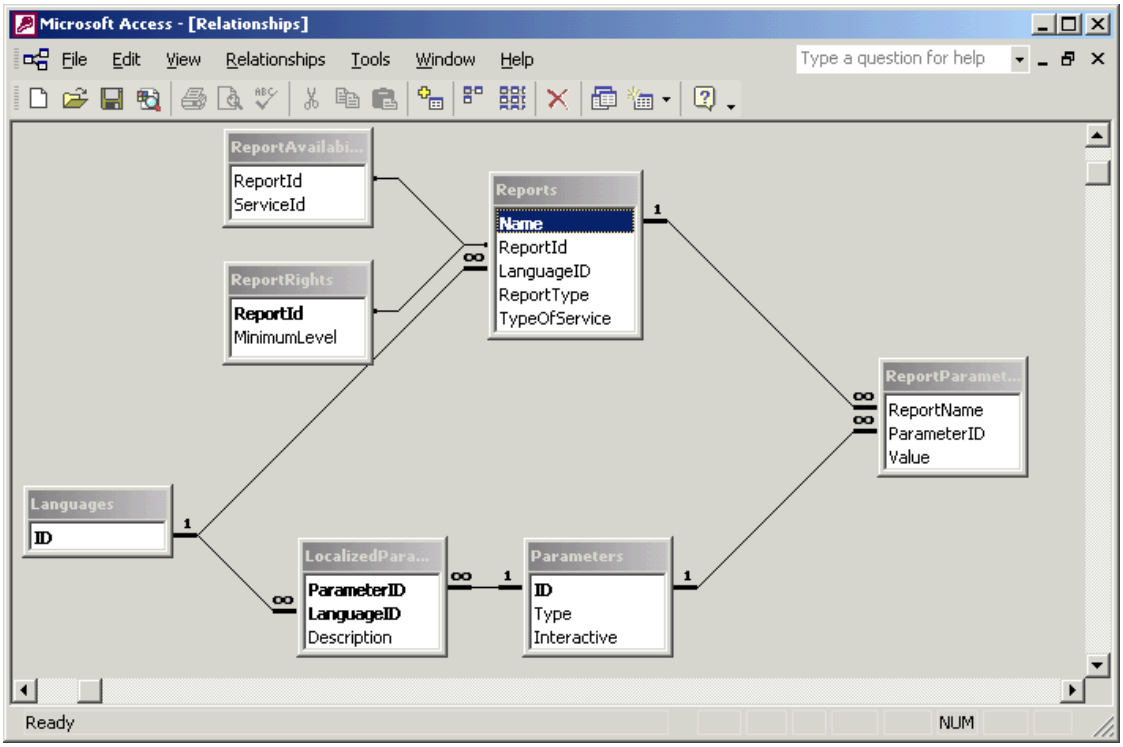


Figure 10.13 CONFIGURING THE REPORTING TABLES

"ParamDNIS" is a dynamic parameter which is used twice.

Each dynamic parameter which is used in the "SQL" field in this table must appear in the "Parameters" table. The dynamic parameters of the customized reports are described in **2**.

- "Parameters", "LocalizedParameterDescriptions" and "ParametersTypes" tables

  You must add a new record to these tables for each dynamic parameter used in the "SQL" field in the "ReportQueries" table.

  The user may view the "Description" field in the "LocalizedParameterDescriptions" table using the web interface.

  The "Type" field in the "Parameters" table is used to determine how the user must enter the values of the dynamic parameters. When the report is generated, this field is also used to format the specific values before replacing them in the SQL request. See step **2** for more details.

- "ReportParameters" table

  As in the previous cases, the records in this table specify the parameters used by a given report. Each dynamic parameter of the "SQL" field in the "ReportQueries" table of all the records associated with a given report must appear as a record in the "ReportParameters" table.

  The "Interactive" field in the "Parameters" table is set to "True" for all the parameters of a customized report: the statistical (non-interactive) characteristics of a customized report are contained in the "SQL" field of the "ReportQueries" table. For example, the "source table prefix" and "fields" fields required for the report are completed specifically in the "SELECT" part of the request.

  u Compulsory parameters:

  Certain parameters must be associated with a report by the "ReportParameters" table.

  Some of them may not be used as dynamic parameters:

  - Action;
  - ExportFormat;
  - Printer.

  Some of them may be used as dynamic parameters, but they are replaced in the SQL strings according to the specific rules described in **2**:

  - BeginDate;

- EndDate;
- BeginTime;
- EndTime;
- PrecisionLevel (compulsory only if the "ReportType" field of the "Reports" table is set at 0 - consolidated).
- ServiceID (compulsory only if the "TypeOfService" field of the "Reports" table is different from 0).

2 Dynamic request parameters

Only a sub-set of parameters are authorized as dynamic request parameters for customized reports. For each type of dynamic parameters,

- the web page provides a specific interface which gives the corresponding values and checks that the format corresponds to the pre-defined one;
- all the occurrences in the SQL requests associated with a report are replaced by the corresponding values obtained on the web page, in a format that conforms to SQL.

Tableau 10.12

TYPE	TYPE	WEB PRESENTATION AND FORMAT	REPLACEMENT IN THE SQL STRING
1	Single Date/Time value (Date / Time)	Text box, in format "dd/mm/yyyy hh:nn".	Value between # characters in the form #dd/mm/yyyy hh:nn:ss#.
2	Single String value (String)	Text area, 50 characters maximum	Value between single inverted commas (').
3	Single Number value (Digit)	Text area, numerical format	Value
4	List of Agent Ids (List of Agent identities)	List with the possibility of multiple selections, pre-filled with the identity of supervized agents	In brackets, list of all the selected values, each value between single inverted commas, separated by commas (,).
5	ServiceID (Service identifier)	List with single-selection possibility, pre-filled with the service identifier.	Value between single inverted commas (').
6	Filter ID (Filter Identity)	Single-selection list, pre-filled with the identity of all the filters defined in the selected service.	Value between single inverted commas (').

Types of dynamic parameters authorized:

Tableau 10.13

TYPE	TYPE	WEB PRESENTATION AND FORMAT	REPLACEMENT IN THE SQL STRING
7	Lower or upper threshold for data in the "AgentCallDurationsPer*" table (higher or lower threshold of the intervals for the "AgentCallDurationPer*" table)	Gives the two lists with single-selection possibility, one for the lower threshold, the other for the upper threshold, pre-filled with the existing time interval values on the table "CallPerAgentPerServicePer*"	Value
8	Lower or upper threshold for data in the "CallDurationsPer*" table (higher or lower threshold of the intervals for the "CallDurationsPer*" table)	Gives the two lists with single-selection possibility, one for the lower threshold, the other for the upper threshold, pre-filled with the existing time interval values on the "InboundCallPerServicePer*" table	Value
14	Single Date value (Date)	multiple selection possibility, pre-filled with the list of "Not Ready" or "PCP" statuses	In brackets, list of all the selected values, each value between single inverted commas, separated by commas (,).
15	Single Date value (Date)	Text box, in format "dd/mm/yyyy".	value between # characters in dd/mm/yyyy# format.
16	Single Time value (Time)	Text area, format "h:nn".	Value between # characters in #hh:nn:ss# format
17	List of Date/Time values (List of date and time values)	List with the possibility of multiple selections, associated with a text area and buttons to insert/delete elements in the format "dd/mm/yyyy hh:nn".	Between brackets, list of all the selected values, with each value between # characters in the format #dd/mm/yyyy hh:nn:ss#,
18	List of Date values (List of date and time values)	List with the possibility of multiple selections, associated with a text area and buttons to insert/delete elements in the format "dd/mm/yyyy".	Between brackets, list of all the selected values, with each value between # characters in the format #dd/mm/yyyy#, separated by commas.
19	List of Time values (List of time values)	List with the possibility of multiple selections, associated with a text area and buttons to insert/delete elements in the format "hh:nn".	Between brackets, list of all the selected values, with each value between # characters in the format #hh:nn:ss#, separated by commas.

Tableau 10.14 TYPES OF DYNAMIC PARAMETERS AUTHORIZED

20	List of String values (List of string values)	List with the possibility of multiple selections, associated with a text area and buttons to insert/delete elements of a maximum of 50 characters.	In brackets, list of all the selected values, each value between single inverted commas, separated by commas.
21	List of Number values (List of number values)	List with the possibility of multiple selections, associated with a text area and buttons to insert/delete elements in numerical format.	Between brackets, list of all the selected values, separated by commas.

Tableau 10.14 TYPES OF DYNAMIC PARAMETERS AUTHORIZED

22	List of Team Ids	List with the possibility of multiple selections, pre-filled with the identity of supervised teams	In brackets, list of all the selected values, each value between single inverted commas, separated by commas (,).
23	Selection between Agent Ids and Team Ids.	It enables you to choose between agents and teams in form of a selection area and a multiple-selection list. If this parameter is used, the agent list and team list must be used (types 4 and 22).	Value 0 for agent selection 1 for team selection
24	List of Filter Ids (List of filter identities)	List with the possibility of multiple selections, pre-filled with the identity of supervized filters	In brackets, list of all the selected values, each value between single inverted commas, separated by commas (,).

Exceptions:

Some dynamic parameters do not respect the general web presentation and SQL text replacement rules. They are listed in the following table.

Tableau 10.15 EXCEPTIONS OF DYNAMIC PARAMETERS AUTHORIZED

IDENTITY	TYPE	WEB PRESENTATION AND FORMAT	REPLACEMENT IN THE SQL STRING
PrecisionLevel (precision level)	**3**	Localized list of possible precision levels (from 1/4 hour to one month).	One of the following suffixes: quarter hour, half hour, hour, day, week, month.
BeginDate (Start date)	**1**	Text area, in dd/mm/yyyy format.	Value in the format #dd/mm/yyyy hh:nn:ss#.
EndDate (End date)	**1**	Text area, in dd/mm/yyyy format.	Value + 11:59:59 PM in format #dd/mm/yyyy hh:nn:ss#.
BeginTime (Start time)	**1**	Text area, format "h:nn".	Numerical value representing the number of seconds: hh * 3600 + nn * 60. Should be used in expressions which include the *TimeHour field.
EndTime (End time)	**1**	Text area, format "h:nn".	Numerical value representing the number of seconds: hh * 3600 + nn * 60. Should be used in expressions which include the *TimeHour field.
ServiceID (Service identity)	**5**	List with single-selection possibility, pre-filled with the identity of all the services managed.	Value between single inverted commas (').

Remark on the types of list:

The types 4, 17, 18, 19, 20, 21, 22 and 24 , described in Tableau 10.14 correspond to the lists of values. This means that:

- on the web page, the user must add (except for type 4: Agent IDs (Team IDs, Filter IDs) as the list cannot be edited) and select one or more values from a list.
- in the SQL request, the dynamic parameter will be replaced by the list of selected values in brackets. It must therefore by used in a logical condition which includes the word "IN" as below:

```
SELECT * FROM VoiceCallsPerAgent WHERE AgentID IN ('Smith','Jones');
```

3 Example

For the "Support" inbound service, a priority call is made during the script and sent to a user who is defined by a numerical value and is recorded in the statistics. A new report called "Priority calls" is created to display the information which relates to all the calls which have a priority level greater than a given value.

4 Creating a new report

Configure the "LongTermReporting" database according to this very simple report creation example:

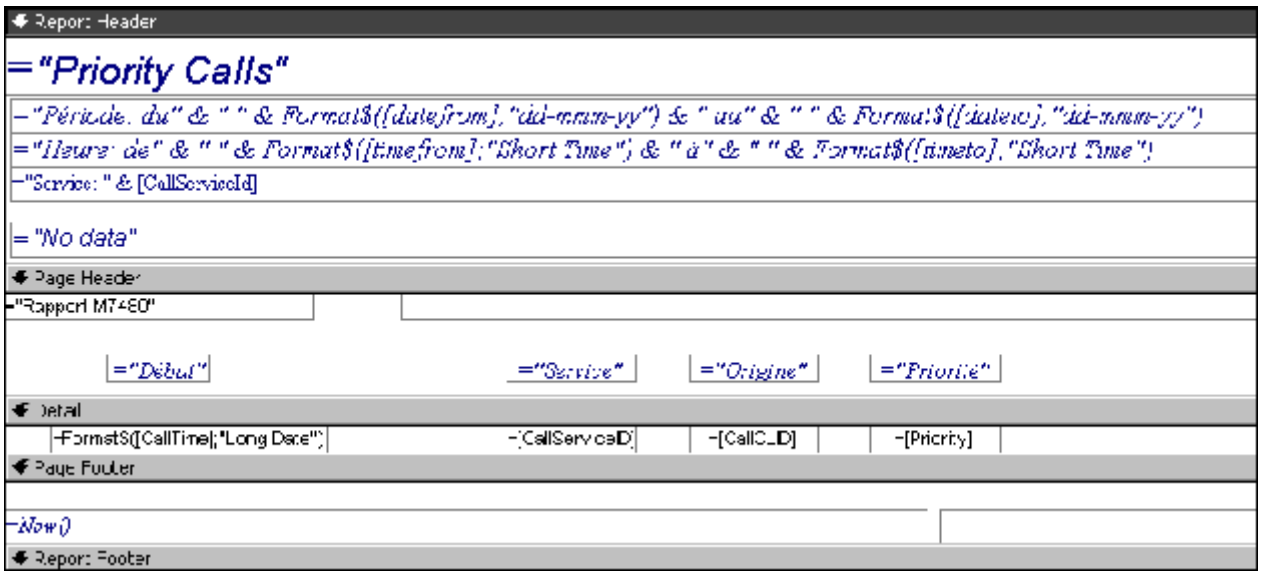


Figure 10.14 EXAMPLE OF THE CREATION OF A CUSTOMIZED REPORT

The VBA coding is also highly simplified (see the following example):

```
Option Compare Database
Explicit option
' Date and time intervals
Public DateFrom As Date, DateTo As Date
Public TimeFrom As Date, TimeTo As Date
Public LanguageId As String
Public ServiceId As String

Private Sub Report_Close()
On Error Resume Next
    Filter = ""
    FilterOn = False
End Sub
Private Sub Report_NoData(Cancel As Integer)
' No data in the report: hide report content and show the "no available data" string.
On Error GoTo Handler
    ' Hide several sections
    Section(acPageHeader).Visible = False
    Section(acDetail).Visible = False
    Section(acPageFooter).Visible = False
    Section(acFooter).Visible = False
    ' Show text box
    txtNoData.Visible = True
    Exit Sub
Handler:
    If Not gConnectToReportingServer Then
        ' Display error message box
        MsgBox "Error Number: " & Err.Number & vbCrLf & _
                ";Error Source: " & Err.Source & vbCrLf & _
```

```
                ";Error Description: " & Err.Description, vbError
        Else
            LogDebugMessage Err.Number, Err.Source, Err.Description
        nd If
    End Sub
    Private Sub Report_Open(Cancel As Integer)
    ' Effect: Open this rappor based on its properties
        On Error GoTo Handler
        Filter = ""
        FilterOn = False
        DateFrom = gdatDateFrom
        DateTo = gdatDateTo
        TimeFrom = gdatTimeFrom
        TimeTo = gdatTimeTo
        LanguageId = gstrLanguageId
        ServiceId = gstrServiceId
        ' Set the SQL request
        RecordSource = "@Whole"
        Caption = Name
        Exit Sub
    Handler:
        If Not gConnectToReportingServer Then
            ' Display error message box
            MsgBox "Error Number: " & Err.Number & vbCrLf & _
            ";Error Source: " & Err.Source & vbCrLf & _
            ";Error Description: " & Err.Description, vbError
        Else
            LogDebugMessage Err.Number, Err.Source, Err.Description
        End If
        Cancel = True
    End Sub
```

5 Customizing the Excel format

From Microsoft Excel, you must create a template file (xlt/xlst) with a macro that will perform the customization of sheets generated.

- File name "Priority calls.xlt"

This file must be present in the database directory of "LongTermReporting.mdb"

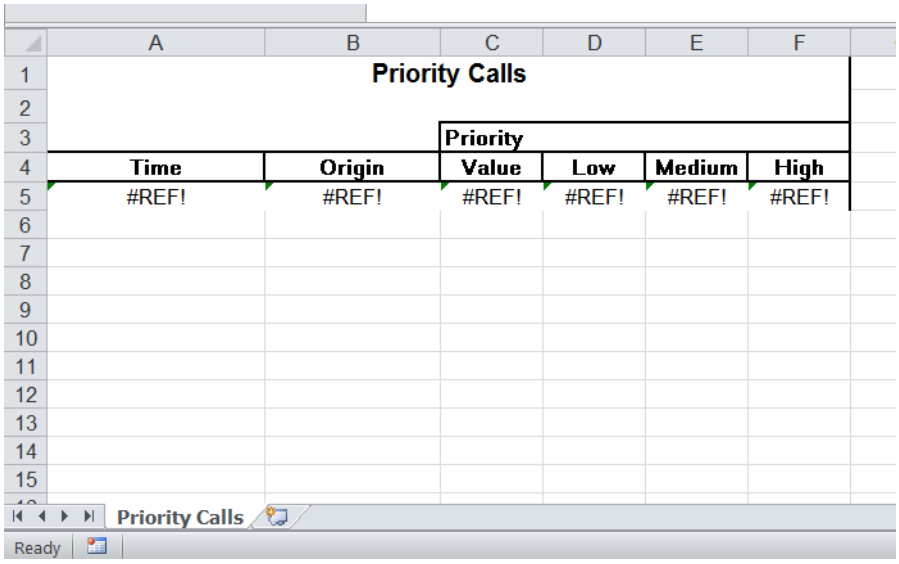


Figure 10.15 EXAMPLE OF THE CREATION OF A TEMPLATE

- Macro "CustomizeMe"

The VBA coding is also highly simplified (see the following example):

```
Sub CustomizeMe()
    OutputDebugString Application.Name & ": Calling CustomizeMe()"
    StartImport
End Sub

Public Sub StartImport()

    On Error GoTo Handler

    Dim lWorksheetSource As Worksheet
    Dim lWorksheetDestination As Worksheet
    Dim llngLastRow As Long
    Dim i As Long
    Dim lColor As Long

    ' Retrieve source worksheet
    Set lWorksheetSource = ThisWorkbook.Worksheets("Data")

    ' Retrieve destination worksheet
    Set lWorksheetDestination = ThisWorkbook.Worksheets("Priority Calls")

    ' Find number of records
    llngLastRow = lWorksheetSource.UsedRange.Rows.Count - 1

    If (llngLastRow < 1) Then
        lWorksheetDestination.Range("A5:F5").Delete
    Else
```

```
        With lWorksheetDestination
                    .Cells(5, 1).Formula = "=" & lWorksheetSource.Cells(2, 1).Address(RowAbsolute:=False,
External:=True)
                    .Cells(5, 2).Formula = "=" & lWorksheetSource.Cells(2, 11).Address(RowAbsolute:=False,
External:=True)
                    .Cells(5, 3).Formula = "=" & lWorksheetSource.Cells(2, 16).Address(RowAbsolute:=False,
External:=True)
        End With

        ' Copies the range and its formats
        For i = 1 To llngLastRow - 1
          j = i + 4

          lWorksheetDestination.Range("A" & j & ":F" & j).Copy
          lWorksheetDestination.Range("A" & j + 1 & ":F" & j + 1).PasteSpecial (xlPasteAll)

          lColor = 2
          If (lWorksheetDestination.Cells(j + 1, 3).Value > 10) Then
            lColor = 3
          ElseIf ((lWorksheetDestination.Cells(j + 1, 3).Value <= 10) And (lWorksheetDestination.Cells(j + 1,
3).Value > 5)) Then
            lColor = 46
          End If

          lWorksheetDestination.Range("A" & j + 1 & ":F" & j + 1).Interior.ColorIndex = lColor

        Next i

      End If


      ' That's all, folks!
      lWorksheetDestination.Activate

      OutputDebugString "Finished."

      Exit Sub

    Handler:

      OutputDebugString "Error " & Err.Number & ":" & vbCrLf & Err.Description

    End Sub
```

6 Configuring the configuration tables:

Table "Parameters":

Tableau 10.16

IDENTITY	TYPE-	INTERACTIVE
MinimumPriority	3	True

LocalizedParameterDescriptions Table:

Tableau 10.17

PARAMETER	LANGUAGE	DESCRIPTION
MinimumPriority	English	Minimum call priority:

"Reports" Table:

Tableau 10.18

NAME	LANGUAGE	TYPE OF REPORT	SERVICE TYPE
Priority calls	English	1	3

"ReportParameters" table

Tableau 10.19

NAME OF THE REPORT	PARAMETER	VALUE
Priority calls	BeginDate	
Priority calls	EndDate	
Priority calls	BeginTime	
Priority calls	EndTime	
Priority calls	Action	
Priority calls	ExportFormat	
Priority calls	Printer	
Priority calls	ServiceID	
Priority calls	MinimumPriority	

Table "ReportExcelTemplates ":

Tableau 10.20

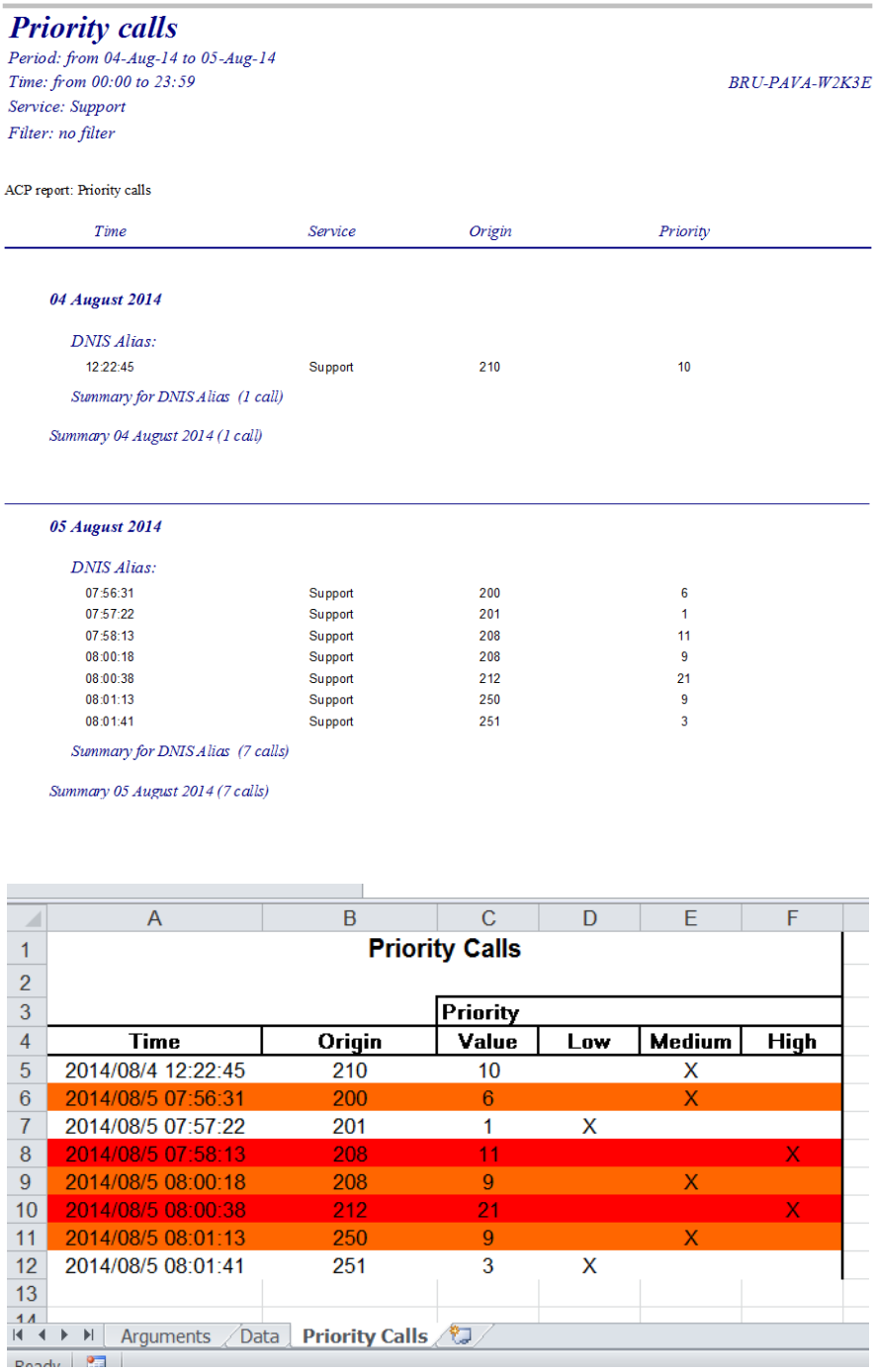
REPORTNAME	TEMPLATENAME-	MACRONAME
Priority calls	Priority calls.xlt	CustomizeMe

"ReportQueries" table:

Tableau 10.21

NAME OF THE REPORT	REQUEST NAME:	BEGIN	SQL
Calls priority	CorrespondingNumberVariables	False	SELECT CallID, VariableValue AS Priority FROM CallUserDefinedNumberVariables WHERE ((VariableName = 'Priority') AND (VariableValue >= @MinimumPriority@));
Calls priority	Whole	True	SELECT InboundVoiceCalls.CallTime, InboundVoiceCalls.CallServiceId, InboundVoiceCalls.CallCLID, CorrespondingNumberVariables.Priority FROM InboundVoiceCalls INNER JOIN CorrespondingNumberVariables ON ((InboundVoiceCalls.CallID) = (CorrespondingNumberVariables.CallID)) WHERE (((InboundVoiceCalls.CallTime)>=@BeginDate@) AND ((InboundVoiceCalls.CallTime)<=@EndDate@) AND ((InboundVoiceCalls.CallServiceId)=@ServiceID@) AND ((InboundVoiceCalls.CallTimeHour)>=@BeginTime@) AND ((InboundVoiceCalls.CallTimeHour)<=@EndTime@));

7 Example of a generated final customized report:



Priority calls

Period: from 04-Aug-14 to 05-Aug-14
Time: from 00:00 to 23:59
Service: Support
Filter: no filter

BRU-PAVA-W2K3E

ACP report: Priority calls

Time	Service	Origin	Priority
04 August 2014			
DNIS Alias:			
12:22:45	Support	210	10
Summary for DNIS Alias (1 call)			
Summary 04 August 2014 (1 call)			
05 August 2014			
DNIS Alias:			
07:56:31	Support	200	6
07:57:22	Support	201	1
07:58:13	Support	208	11
08:00:18	Support	208	9
08:00:38	Support	212	21
08:01:13	Support	250	9
08:01:41	Support	251	3
Summary for DNIS Alias (7 calls)			
Summary 05 August 2014 (7 calls)			

Priority Calls

Time	Origin	Priority Value	Low	Medium	High
2014/08/4 12:22:45	210	10		X	
2014/08/5 07:56:31	200	6		X	
2014/08/5 07:57:22	201	1	X		
2014/08/5 07:58:13	208	11			X
2014/08/5 08:00:18	208	9		X	
2014/08/5 08:00:38	212	21			X
2014/08/5 08:01:13	250	9		X	
2014/08/5 08:01:41	251	3	X		

Arguments | Data | Priority Calls

Figure 10.16 EXAMPLE OF A GENERATED FINAL CUSTOMIZED REPORT

8 Testing a customized report in LongTermReporting.mdb

Once the personal report is created, you may test it directly by relaunching the M5000 CC Report Server. However, this causes a particular problem if errors occur while the new report is being displayed. In fact, the M5000 CC Report Server functions in service mode, thereby preventing any interaction. The standard error is generally where a window opens and is invisible in this execution mode.

Here is a brief description of the operations to be carried out to run the M5000 CC Report Server in standard mode:

- Start the system with the M5000 CC Report Server (in service mode).
- On the PC where the M5000 CC Report Server is installed, shut down the "ReportingServerService" service using the Windows "Services" control panel.

- Once this service is shut down, run "ReportingServer.exe" (which is located in the directory where the product is installed) using the following command line: "/Debug".
- The "LongTermReporting.mdb" database can now be seen and is ready to be used with the new report.

Once the test phase for the new report is complete you may carry out the following operations to return to normal operation:

- Shut down the M5000 CC Report Server (ReportingServer.exe) either by using the task manager or by shutting down the system completely.
- Using the task manager, you may restart the "ReportingServerService" by using the Windows "Services" control panel to return to the initial system.

Note: *Starting and stopping the M5000 CC Report Server in service mode are optional if the "LongTermReporting.mdb" database already contains references to the linked tables in "LongTermStatistics.mdb".*

U-300 : USING M5000 CC ADMINISTRATOR APPLICATION MENUS

OBJECTIVE

- To define the main administrator tasks, specifying the presentation sheets for these tasks.
- To present all the application's menu commands, specifying transfers or links to procedures associated with these commands.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

Note: The M5000 CC Server application must be launched before any other application ; there is an automatic startup of the Server, should you forget to launch it.

- Commission the M5000 CC Administrator application (see Sheet C-300).

PROCEDURE

Definition of the main administrator tasks:

- Basic and start-up operations for the M5000 CC Administrator application (see Sheet U-301)
- Definition of physical and human resources (see Sheet U-302),
- Management of system parameters (see Sheet U-303),
- Management of tracking messages (for the automatic start configuration only) (see Sheet U-370) ,
- Contact center activity information management (see Sheet U-304),
- Wall display configuration (see Sheet U-340),

Description of the M5000 CC Administrator application menus:

- The general M5000 CC Administrator application window contains the following menus (see Figure 10.17 and Tableau 10.1):

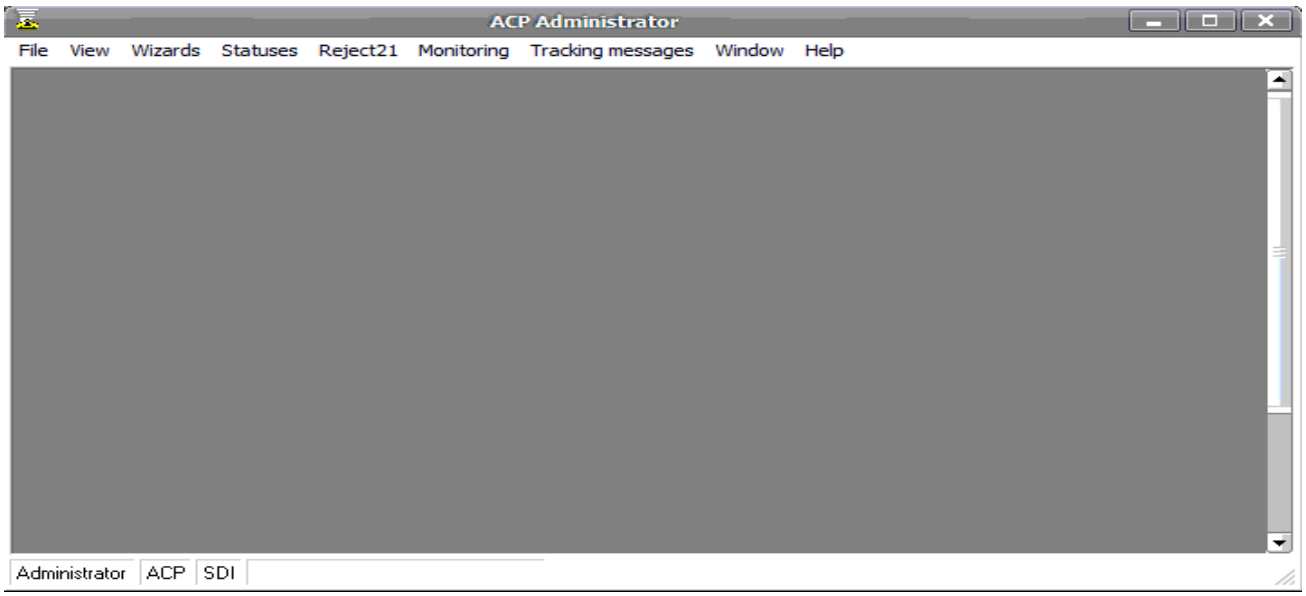


Figure 10.17 GENERAL OVERVIEW OF THE APPLICATION WINDOW M5000 CC ADMINISTRATOR

- Refer to the corresponding U sheets when you need more information on a particular command:

Table11:

MENUS AND COMMANDS	FUNCTION OR COMMENT	SHEET NO.

Table11:

File :	Access to general commands	
Connection	Connect the M5000 CC Administrator application to the M5000 CC Server and identify yourself as an authorised administrator	U-310
Backup	Back up the system during a "Maintenance" period	U-311
Properties	To parameter all the general system properties necessary for maintenance in particular.	U-312
Print	Print one of the 9 reports available, or all the reports available	U-313
Change language	Change the M5000 CC Administrator application language.	U-314
Server shutdown	Close the M5000 CC Server application from the M5000 CC Administrator application	U-315
Exit	Command to close the application	

Table12:

MENUS AND COMMANDS	FUNCTION OR COMMENT	SHEET NO.
View :	Access to the commands used to open the following windows:	
Statistics	Manage the replication of the statistics in an external database	U-320
Services	Manage the "Services" needed to define physical and human resources	U-321
Users	Manage the "Users" and "Agents" needed to define physical and human resources	U-322
User profiles	Manage user profiles	U-323
Telephones	Manage the "Telephones" needed to define physical and human resources	U-324
Extensions	Manage the "Extensions" needed to define physical and human resources	U-325
Message call pit group	Manage the "Extensions" needed to define physical and human resources	U-326
User groups	Manage the user groups.	U-327
Directories	Manage and configure the directories	
Telephone links	Configure and manage a telephony connection in the PBX	U-329
Dongle	Access the key code display and activation window.	U-330
E-Mail Profile	Manage the profiles used by the e-mail manager	U-331
SMS Profiles	Manage the profiles used to send SMS	U-352
Dialling rules:	Add, move or delete a dialling rule.	U-333

Table12:

PNIA: Configuring	Define all the parameters required to integrate M5000 CC into a PNIA environment.	U-350
PNIA: transformation rules	Display the subscriber number translation rules currently used by M5000 CC in a PNIA environment.	U-351
User defined URL	Define some links to some web pages or applications (Terminal Server) available from the portal.	U-334
Report Server	Configure the M5000 CC Report Server	U-336
SQL directory server	Configure the directory server.	U-337
Calendar server	Configure the Calendar Server	U-338
Virtual centres	Configuring virtual centres	U-339
Wall displays	Configure the Wall display	U-340
Media servers	Manage media servers, the resources and sockets required to manage voice, e-mail and web communications	U-341
Voice synthesis channels	Manage the channels used for voice synthesis	U-342
Networking >	Configure the remote servers (overflow and innerflow servers)	U-343
Sub-networks	Define the sub-network parameters to enable sub-network broadcasting	U-344
Options	Define the MDI/SDI display mode	U-345
Wizards：	Display all the wizards which have been created and are being used (menu "empty" after first installation)	

Table13:

MENUS AND COMMANDS	FUNCTION OR COMMENT	SHEET NO.
Status :	Accesses M5000 CC Media Server status configuration and display	
Display	Display the statuses to manage the information bar	U-346
UDP Properties	Parameter the maximum UDP size that will be sent by the Server	U-347
Display properties	First parameter the "Display properties" to manage the information bar	U-348
Parameter	Parameter the number of statuses shown in the IVR ports load histograms	U-349
Reject 21:	Access to the Reject 21 function configuration	
Automatic mode **System open** or **System closed**	Apply one of the opening or closure modes for the Rejet21 function	U-352
Rule definition	Define the rules for closing the Rejet21 function	U-353
Supervision:	Access the windows for supervising and checking information from the M5000 CC Server and the M5000 CC Media Server	
Log Messages	Log messages for the M5000 CC Server and the M5000 CC Media Server	U-360
Connected Components	Connected components of the M5000 CC Server	U-360
Agent extensions	Agent extensions of the M5000 CC Server	U-360
Client extensions	Client extensions of the M5000 CC Server	U-360
Runs >	Runs of the M5000 CC Media Server	U-360
Media Server status	M5000 CC Media Server status	U-360
IVR > ports load	M5000 CC Media Server IVR ports load	U-360
Tracking messages:	Access to the M5000 CC Server and M5000 CC Media Server tracking messages	
Server	Activation of the "Server" option then access to the M5000 CC Server tracking messages	U-370
Media server	Access to the M5000 CC Media Server tracking messages	U-370
Window :	Access to commands which describe (cascade horizontal) and activate the windows that are open on the screen:	
?	Access to the "A bout" application and the Mitel 5000 Contact Center on-line help	

Tableau 10.1 LIST OF APPLICATION MENU COMMANDS M5000 CC ADMINISTRATOR

U-301 : BASIC OPERATIONS AND STARTING THE M5000 CC ADMINISTRATOR

OBJECTIVE

- To present the main tasks that the administrator must carry out in a certain order when starting the application.
- To present the basic administrator tasks with links to the relevant sheets.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PROCEDURE

Note: Only users with "administrator" rights may enter the M5000 CC Administrator application. These rights belong to the user attributes: They are set by another administrator when the users are defined.

Definition of the M5000 CC Administrator application's "Basic operations":

The first 3 operations in the list of basic operations must be carried out in this order (the next two depend on need):

1 Change the application language (see Sheet U-314),

0 Connect to a Server (see Sheet U-310),

0 Connect to the M5000 CC Administrator application and identify yourself as an authorized administrator (see Sheet U-310),

0 Print out information (see Sheet U-313),

0 Exit the application

U-302 : DEFINING PHYSICAL AND HUMAN RESOURCES

OBJECTIVE

- To present all the tasks that the administrator must carry out to define the physical and human resources, specifying links to the relevant sheets.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PROCEDURE

Physical resources defined by the administrator

- Services (see general information in § 8.4.8.2.3):
  - Managing inbound services:

    Inbound Services management concerns the following tasks:
    - Adding a Service (see Sheet U-321),
    - Binding DNIS ranges to inbound Services (voice) (see Sheet U-321),
    - Assigning an e-mail profile (see Sheet U-331),
    - Deleting an inbound Service (see Sheet U-321),
    - Associating inbound call pits with the Service (CSTAconfiguration - solution without IVR only) (see Sheet U-321),
  - To manage the outbound services

    Outbound Services management concerns the following tasks:
    - Adding outbound Services (see Sheet U-321),
    - Deleting outbound Services (see Sheet U-321),
- Telephones, Extensions and Message call pit groups (see general information in Section 8.4.8.2.2):
  - Phone management:

    Note: *The telephone is usually defined during the installation phase. Please call your support contact if you encounter any problems with phone definitions.*
    - To add a "private", "public" or "message call pit" telephone (see Sheet U-324),
    - Deleting a telephone (see Sheet U-324),
  - Extension management
    - Adding an extension to a phone (see Sheet U-325),
    - Deleting an extension from a phone (see Sheet U-325),
  - Managing call pits (solution without IVR only)
    - Adding a message call pit group (see Sheet U-326),
    - Deleting a message call pit group (see Sheet U-326),
    - Assigning an extension to a message call pit group
      - In **SDI** display mode (see Sheet U-324)
      - In **MDI** display mode (see Sheet U-325)
- Profiles (see Sheet U-331)
- Defining a CSTAlink (see Sheet U-329).

Human resources defined by the administrator:

- Services (see general information in § 8.4.8.2.1):
  - Users

    User management focuses on the following tasks:
    - Adding users (see Sheet U-322),
    - Modifying user properties (see Sheet U-322),

- Deleting users (see Sheet U-322),

- Agents:

  Agents may be managed using 2 methods: via the **[View > Services]** (see Sheet U-321) or **[View > Users]** menu (see Sheet U-322)**:**

  - Adding a new agent to a Service (see Sheet U-321 or U-322),
  - Deleting an agent from a Service (see Sheet U-321 or U-322),

- Service managers:

  - Adding a new manager to a Service (see Sheet U-321),
  - Deleting a manager from a Service (an agent may be deleted in 2 ways):
    - via the **[View > Services]** menu (see Sheet U-321) or
    - via the **[View > Users]** menu (see Sheet U-322).

- Distributing the users between the different Services

  To associate users with Services, an administrator must first of all define the system's "users".

  After having defined Services and users, the administrator must assign users to Service(s). The administrator also selects some users to be Service managers. These two sets of users can be disjoint. Each Service must have at least one user and one Service manager or it would remain useless.

  Service agents

  When a user is assigned to a Service, he becomes an agent of this Service. The Administrator establishes this relationship. Each new Service agent (see Sheet U-321 or U-322)is selected from the system users previously defined in the system by the administrator.

  Service managers

  The administrator defines one or more Service managers (also called Service administrators) for each Service. A new Service manager (see Sheet U-321) is selected from the system users: Service managers do not have to be agents of the same Service.

U-303 : MANAGING SYSTEM SETTINGS

OBJECTIVE

- To present all the tasks that the administrator must carry out to configure the following parameters to make the system fully operational, specifying links to the relevant sheets (see general information in § 8.4.8.3).

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PROCEDURE

In order to manage the system parameters, an administrator must configure:

- the system properties (see Sheet U-312):
  - the night mode start and end time and the start of the night procedure
  - the buffer size
  - the lifetime of the statistics in the archive
  - the server name displayed in the predefined reports
  - the recording parameters
  - the broadcast parameters
  - the e-mail options
  - the statistics replication type
  - the local parameters
  - the Server shutdown parameters
  - the automatic restart parameters
  - the client application update time
  - labels for the activity codes relating to the "Not Ready" status
- a service manager's agent creation and assignment rights
- the system backup (see Sheet U-311),
- the statistics replication (see Sheet U-320),
- the UDP properties (see Sheet U-347),
- the remote servers (see Sheet U-343 "Networking"),
- Reject 21 (see Sheets U-352 and U-353)
- M5000 CC Report Server(see Sheet U-336).

U-304 : MANAGING INFORMATION ABOUT M5000 CC ACTIVITY

OBJECTIVE

- To present the tools that an administrator may use to manage the Mitel 5000 Contact Center activity.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PROCEDURE

An administrator can use the following tools to manage information about the Mitel 5000 Contact Center activity:

- Information bar management (see Sheets U-348 first then U-346),
- IVR ports load histograms (see Sheet U-360),
- Log messages for the M5000 CC Server and the M5000 CC Media Server (see Sheet U-360).

U-310 : FILE MENU: CONNECTION

OBJECTIVE

- To connect the M5000 CC Administrator application to the M5000 CC Server.
- To identify yourself as an authorized administrator

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- Commission the M5000 CC Administrator application (see Sheet C-300).
- The M5000 CC Server application must also be activated (see Sheet C-0).

PROCEDURE

Connection

Note: The **[File]** menu keeps and lists the names of the "Versions.CFG" files of the last four connections. The opportunity provided by this is used in the following second method.

Two connection methods are available:

1 Select the **[Connect]** command from the M5000 CC Administrator application's **[File]** menu to open the **"Select a database Server"** window:

- Select the file named **"Versions.CFG"** which corresponds to the active Server.
- Click ***[Open]*** to connect.

0 In the M5000 CC Administrator application's **[File]** menu, select the "Versions.CFG" file which corresponds to the active Server from the list of recently accessed files (see note above).

Authorized administrator identification

Required conditions before performing this step:

- You must be a user with administrator rights.
- When logging on for the first time, use the default User IDs and passwords, then have them changed by the administrator.
  - **User ID**: string of 20 characters maximum (first character must be a letter),
  - **alias** or **password**: string of 10 digits maximum.
- You must be connected to a Server (first operation in this sheet).

Logging on as authorized administrator:

- In the "**Administrator login**" window, enter your user ID (initial default ID = "Administrator") or your alias number (initial default alias number = 0) in the ***{User}*** dialog box.
- Enter the password (default password at first connection = "0") in the ***{Password}*** dialog box.

Caution: *Only one administrator at a time can be connected to the file structure. If you try to connect to an M5000 CC Administrator application while another administrator is already connected, one of the following error messages will be displayed.*

1 Error message "Another administrator is already connected" if an administrator is already connected with a different User ID:

- you must wait for this administrator to disconnect before you can connect.

0 Error message "You are already connected to the administrator application" if an administrator is already connected with an identical User ID:

- click on ***[OK]***.: A confirmation window opens asking **"Would you like to remove the currently connected Administrator application?"**:

  Two choices are available:

  u Click ***[Cancel]*** if you do not want to disconnect the current administrator.

  u Click ***[OK]*** to disconnect the current administrator, before you can restart the procedure for your

own connection

U-311 : FILE MENU: BACKUP

OBJECTIVE

- To back up the system during a **"Maintenance"** period (see general information in § 8.3.8.4).

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).
- The server must be in **"Maintenance"** mode during backup (therefore in "Night mode"), for which the period may be configured in the **{Night mode}** tab in the **"Properties"** window, see Sheet U-312).

PROCEDURE

To perform system backups:

- Select **[Backup]** from the M5000 CC Administrator application's **[File]** menu to open the **"Backup destination"** window.
- Select the destination path (drive and directory) for the backup files and click ***[OK]***.
- A message window will open asking **"The Server will be in maintenance mode during the backup. Continue?"** Click ***[cancel]*** to abandon or ***[OK]*** to continue ; in this case:
  - Information and progress messages will be displayed while the system is copying the different directories.

U-312 : FILE MENU: PROPERTIES

OBJECTIVE

- To configure all the general system properties necessary for maintenance in particular.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

To manage the system properties:

- Select **[Properties]** from the M5000 CC Administrator application's **[File]** menu to open the **"Properties"** window: Click on each tab's label to access the fields for defining the different system properties, then click ***[Validate]*** once all the parameters have been configured:

1 {Night mode} tab:

During this period, the system switches over to "Maintenance" mode (see general information in Section 8.3.8.4). An administrator must also define the start time for the night procedure (see the second frame in this tab).

Note: *The start time for the "Night procedure" must be between the start and the end of "Night mode".*

To set the night mode start/end time:

- In the ***{Night mode}*** box, enter the night mode start time in the ***Start time*** text box. The time has to be written in the format HH:MM, where H stands for the hours and M the minutes. For example, to enter "a quarter to two AM", type 01:45.

Note: The night mode start time is also the time when all the agent statuses for the day are reset to 0 and the calculation starts again from zero.

- Enter the night mode end time in the ***{End time}*** text box. The format is the same as for the start time.

To set the night procedure start time:

- In the ***{Night procedure}*** frame, enter the night mode start time in the ***{Start}*** text box. The format is identical to that of the previous frame.

2 {Buffer size} tab:

Some temporary database tables (see § 12.3.2) are used as buffers to store system statistics. The records of these tables are copied every 15 seconds into a permanent database ("LongTermstatistics.mdb"). These temporary tables are defined as circular buffers: when the last element has been recorded, the table is filled again starting with the first element. If the first element has not been moved to the permanent database yet, its information is lost. To avoid this, the administrator can increase the size of the temporary tables. These actions are performed only if the standard replication method (see definition in Section 1.4) has previously been selected.

Nota :
- *Once a size has been set for the temporary tables, it can only be increased.*
- *During the night mode period, data recorded in these tables are not moved to the permanent database. The temporary database must therefore be large enough so that any data relating to incoming calls over this period is not lost.*

To define the statistics buffer memory size:

- In each text box, enter the number of records of the temporary database tables where statistics data are recorded. If a number is already present in a text box, the new value entered has to be higher than this number. Each text box gives the size of one or more cyclical tables in the "Statbuffer.cst" base. The following table shows the correspondence between the text boxes and the cyclical tables:

Table11:

LABEL	TABLE(S) NAME

Table11:

Users Log Statistic	User_Log_Status (see § 12.3.2.1)
User Activity Statistic	User_Log_Status (see § 12.3.2.2)
Calls Statistic	Service_Call (see § 12.3.2.3), Service_CallResult (see § 12.3.2.4)
IVR ports Statistics	IVRPortsLoad (see § 12.3.2.7), CallServerSaturationPeriods (see § 12.3.2.8)
Conversations Statistics	Conversations (see § 12.3.2.5)
Presentations Statistics	Presentations (see § 12.3.2.6)
E-mail by agents statistics	EmailTreatmentByAgents (see § 12.3.2.9)
Alarms	ServiceAlarms (see § 12.3.2.13)

3 {Archives} tab:

This information is valid with the standard statistics database ("LongTermStatistics.mdb") and with the external replication database (see also the **{Statistics}** tab in this Sheet).

To parameter the lifetime of the statistics in the archives:

- Select the corresponding database

  For External Replication, Archive is not activated by default and has to be selected with "Enable archive on External Replication". A procedure "sp_DeleteOldRecords" has to be defined in the external database to be able to deleted needed records (for SQL databae, this sp is already defined in "LongTermStatistics" database)

- ***{Statistics persistence}*** box

  The administrator must decide how long the statistical records are stored in the permanent database (LongTermStatistics.mdb/external statistics). These records are used to generate reports about calls, e-mails, agents, Services, etc. The lifetime of these records should thus be longer than the period for which reports are generated.

  The detailed data refers to "detailed" tables in the database (all the tables except 6 intended for consolidation), while the consolidated data refers to the 9 tables used to consolidate the statistics (InboundCallsPerServicePer* to ClosingStatusesPerServicePer*, see § 12.3.3.15 to 12.3.3.23).

  - In the ***{Detailed data}*** dialog box, enter the number of days for the statistics to be kept, before the Statistics Builder application deletes them.
  - In the ***{Consolidated data}***dialog boxes,enter the number of days the statistics will be kept, before the Statistics Builder application deletes them.

Note: *When the administrator defines a number of days in the **{By weeks}** or **{By months}** entry fields in the **{Consolidated data}** area, this means that the records in the tables that are consolidated by weeks or by months are erased x days after the start of the next period, from the date of the night procedure.*
*Example : The administrator defines 3 days in the **{By months}** text box during the current month. When the night procedure starts on the 4th day of the next month, the tables of the previous calendar month (tables from the 1st to the last day of the month) will be erased, and so on each month:*

Note: *"sp_DeleteOldRecords" has to be created in the external replication database (already created by default in SQL replication), it has to receive 7 arguments, for persistence, in the following order : Detailed, Consolidated by Quarter, Consolidated by Half Hour, Consolidated by Hour, Consolidated by Day, Consolidated by Week, Consolidated by Month. This procedure must use those persistence value to delete corresponding old data.*

4 {Recording} tab:

- To set the maximum number of recordable agents:

  The administrator must set a limit to the number of recordable agents (see Sheet U-322). Since the agent recording uses a Call Server resource (one voice channel) throughout the whole conversation (no call can be handled on this resource), the number of recordable agents must be managed very carefully.

  - Enter a number of agents in the ***{Maximum number of recordable agents}*** field.
  - Follow the procedure indicated in the M5000 CC Service Manager application (see Sheet U-434).

- To parameter the default DNIS of the Service Conversation Recording:

  Recording a conversation involves placing the call on conference with an analog resource. This will be done by calling the DNIS number of the predefined "Conversation Recording" service (see § 13.4.5) using an IVR-type script. Therefore, the DNIS of Service Conversation Recording must be defined in order to use the Start recording button in the User interface or the specific "InitiateRecording" method (see § 14.1.5) of M5000 CC User API.

  - Enter a number in the ***{Default DNIS used for the recording}*** field.
  - Enter the DNIS of the "Conversation Recording" service.
- To define the recorded message publication parameters:

  The message can be sent by e-mail after being recorded. By default, the file is attached to the message, but the file can be replaced with a link. It is in this part that this link must be configured.

  - In the ***{Network directory}*** field, enter the name of the directory containing the voice recordings. This directory must be a network directory with sufficient write and read rights.
  - In the ***{Virtual directory}*** field, enter the name of the directory representing the access link to the file located in the network directory. This link is sent in the e-mail (concatenated with the file name in order to obtain a correct link). If this virtual directory is a web server virtual directory, its physical directory must correspond to the network directory.
  - Indicate how long the saved files (those in the network directory) will be stored.

5 {Broadcast} tab:

To set the broadcast parameters

- ***{Status}*** box
  - ***{Broadcast period***: The minimum broadcast frequency is calculated and displayed to help you enter the ideal value. If you enter a broadcast frequency value less than this minimum, an error message is displayed (in red). Attention: this minimum value is evaluated for the current configuration. It means that this calculation takes into account the current number of Services in production, the number of Service filters... If one of these parameters changes, the minimum broadcast frequency will be different!
  - ***{Number of datagrams to send}***: this value must be numerical. When the number of broadcast messages to be sent is too high, some datagrams may be lost and the real time statuses may become unavailable in the client applications. To avoid such problems, we send the datagrams a few at a time instead of all at once. For this purpose, we divide the total number of datagrams into several groups. A group of datagrams is sent every 50 ms. The number of datagrams to be sent per group is defined in the Administrator application. The default value is 5. A nil value signifies that all the datagrams will be sent at the same time.
  - ***{Broadcast check period}***: numerical value between 1 and 60. If no client applications are receiving any broadcasts, the client will use DCOM to receive information in real time from the Server. The broadcast check period indicates how long the client application may remain without receiving any broadcasts before making the DCOM call.
  - ***{Time for calculation of average values(s)}***: multiple of the broadcast frequency. Must be greater than 60 sec. It relates to the real time statuses which may be displayed on different product media (M5000 CC Administrator, M5000 CC Service Manager, M5000 CC User, M5000 CC Wall Display, physical Wall Displays): some of the properties that can be displayed are calculated over a period (e.g.: in the screenshot above, the Average time before abandon is calculated over a period of 50 sec and broadcast every 5 sec, whereas others such as the Number of DCP calls are broadcast every 5 sec as snapshots only.
  - ***{Remote broadcast frequency}***: indicates the broadcast frequency for the remote Servers. This value must be a multiple of the broadcast frequency and must be in the range [1, 300] in seconds (only if you are in a multi-Server configuration).
- ***Average ports load (IVR)*** box:

  The IVR ports load broadcast is only used to refresh the IVR ports load histograms in the M5000 CC Media Server and M5000 CC Administrator applications.

  - ***{Broadcast period}*** (m): this value of between 1 and 60 minutes, must be an integer and is the broadcast frequency and the time for the calculation of the average values.

  For more information, refer to "How to set the number of samples to display in the histograms" (see Sheet U-349)..

6 {E-mail options} tab:

To set the e-mail options:

- To erase the e-mails:

  In the ***{"Delete e-mails in "completed folders" for more than"}*** text box, specify the number of days to purge old e-mails from the Completed Items folder of inbound mailboxes.

- Checking interval:

  In the ***{"Checking interval for new e-mails"}*** text box, specify the interval for checking new e-mails in the Inbox folder of all inbound mailboxes.

  The best range is between 2 and 10 minutes (or 120 to 600 seconds). A value out of this range may cause problems: a warning is displayed on the window when the value keyed is out of the range.

  Note: *When a parameter has been changed and after you have clicked **[Validate]** all E-mail Manager components are notified that values of parameters have been modified. If MS Exchange Server crashes, once you have restarted it you must click on **[End task]** for all the E-mail Manager components in the Windows (name of application) Task Manager: "AgoraEMail"). They will automatically restart and reconnect to the MS Exchange Server client.*

- Fax detection

  In the script, a fax converted to e-mail is differentiated from a standard e-mail through the intrinsic "EMailType" variable. The value for this variable is then 1 for normal and 2 for a converted fax.

  In some cases, the faxes converted to e-mails are automatically detected by M5000 CC. The "EMailType" variable obtains the right value automatically. For this:

  - The message server must be Microsoft Exchange.
  - The Fax software must be used, and
  - An Exchange type profile must be defined in M5000 CC, to be interconnected with the Exchange server.

  When any of these conditions is not met (another message server, another software for converting faxes to e-mails, standard profile), it is possible to distinguish a fax converted to e-mail using “pattern matching”. Upon receiving an e-mail, M5000 CC compares one of the e-mail properties to a character string. If the string is detected, the e-mail is considered to be of “fax” type (EMailType variable set to 2).

  - In the ***{"Fax detection pattern"}*** text box, enter the character string identifying a fax.
  - On the ***{"Intrinsic e-mail variable"}*** list, choose the intrinsic variable in which the pattern is searched for when an e-mail is received.

- SMTP compatibility:

  Exchange 2007 and Outlook 2007 support only IMAP+SMTP protocols (and no longer CDO). Since a manual intervention is needed in M5000 CC to change from CDO to IMAP+SMTP (e-mail address format, etc.), it is possible, thanks to the “Display” button, to have a list of incompatibilities. The file SMTPCompatibility.txt is generated and located in the installation directory.

7 {Statistics} tab:

To select the statistics replication type(s) (standard and/or external):

Note: *By default, the selected replication is “Standard”, with the options “detailed” and “consolidated”.*

- ***{Standard replication}*** frame

  Note: *The 2 replication types (“standard” and “external) may exist at the same time. This means that statistics will then be replicated at the same time to the "LongTermStatistics.mdb" database and to an external database (such as MS Access, Oracle or SQL Server 2000).*

  - To fill in the detailed tables in the "LongTermStatistics.mdb" database and generate statistical reports via the M5000 CC Report Server, tick the ***[Detailed]*** box (option selected by default).
  - To consolidate its statistics (see Section 8.4.2.4), that is keep them for a longer time while limiting the disk space related cost, tick the ***[Consolidated]*** box. (Option selected by default).

- ***{External replication}*** frame

  Note: *The 2 replication types (“standard” and “external) may exist at the same time. This means that statistics will then be replicated at the same time to the "LongTermStatistics.mdb" database and to an external database (such as MS Access, Oracle or SQL Server 2000).*

- To fill in the detailed tables in the external statistics database (see definition in Section 1.4), tick the ***[Detailed]*** box.
- To consolidate the statistics in the external statistics database (see definition in Section 1.4), that is keep them for a longer time while limiting the disk space related cost, tick the ***[Consolidated]*** box.

- ***{External replication options}*** box
  - In the ***{DSN name}*** text box, enter the DSNID required to connect to the external database. The DSN is required when an external replication is chosen.
  - In the ***{User name}*** text box, enter the user name required to connect to the external database. This user name is related to the definition of the selected DSN. In some cases, it can remain empty.
  - In the ***{Password}*** text box, indicate the password required to connect to the external database. This password is linked to the selected DSN definition. In some cases, it can remain empty.
  - In the ***{Configuration database}*** text box, enter the name of the configuration database (see definition in Section 1.4). This indicates which configuration database is in "Production" (see definition in Section 1.4).
  - The ***[Options]*** button can only be used if the replication process is active and lets you select certain options which are only available for this type of replication. (Standard replication is, therefore, NOT affected by these options).

Note: *All the configuration databases created by the administrator are located in the M5000 CC File Structure in the "ReplicationDB" directory.*

If you click the ***[Options]*** button, the **"Options available for external replication"** window opens. It contains the options available for external replication and are grouped together in three frames:

- ***{Server Identificator}*** box
  {Server ID that may be replicated to the external database} entry field:

A server identifier may be defined to identify the server to which a particular record corresponds in the external database. This identifier may then be exported in the same way as any of the fields in the replicated tables to the external database.

- ***{Replication frequency by type of consolidated statistics}*** box
  This box is used to define the frequency with which each type of consolidated table will be replicated. To understand the purpose of these frequencies we will look at the tables which are consolidated by month.
  The Statistics Builder application carries out replication procedures every 15 seconds. This means that a record in the table which is consolidated monthly may be updated over 50000 times. In certain cases this may consume a great deal of network bandwidth and use up a lot of CPU on the server where the Statistics Builder application is running. This shows why it is not vital that a table that is consolidated over a long period is updated so frequently.
  Therefore, the Statistics Builder application only replicates this table at most once per day. The consolidated table will therefore be replicated at most 30 times per month, which reduces the bandwidth used by 99.94% in relation to the basic frequency of 15 seconds!
  The scroll down lists in the ***{Replication freq...}*** fields contain a certain number of frequencies that are available for each type of consolidated table:
  - For tables consolidated every quarter hour, half hour and hour:
    -Replication possible every 15 minutes (around hh:00, hh:15, hh:30 and hh: 45)
    -Replication possible every hour (around hh:00)
    -Replication possible once per day (around 00:00)
  - For tables consolidated by days:
    -Replication possible every hour (around hh:00)
    -Replication possible once per day (around 00:00)
  - For tables consolidated by week:
    -Replication possible twice per day (around 00:00 and 12:00)
    -Replication possible once per day (around 00:00)
  - For tables consolidated by month:
    -Replication possible once per day (around 00:00)

Note: Error management during replication is independent of these frequencies. In fact, if a recording can only be replicated correctly to the external database, the Statistics Builder application will try again

to replicate this recording 15 seconds later and will continue doing so until it reaches the value defined in the registers. This parameter may be modified in the registers under "HKEY_LOCALE_MACHINE/SOFTWARE/Dialog Systems/AGORA/General Information/Maximum of Attempt in replication". By default, its value is set at 60 (i.e. 1/4 hour of retries).

- ***{Maximum throughput configuration for consolidated statistics}*** frame
  {Maximum number of record to replicate at each execution} entry field:
  To enhance the performance, the maximum number of records to be replicated each time on the Statistics Builder application (every 15 seconds) can be configured. To obtain a correlation between the number of records and the bandwidth used, each time the Statistics Builder's night procedure is executed and the external replication of consolidated data is activated, a log message is displayed in the Server's log window, stating in particular the number of consolidated records replicated, the quantity of associated data in Bytes and the associated throughput in Bytes per second. This data is provided for each precision level.

8 {Local Parameters} tab:

If you are working on a network and wish to set the local parameters, you can dedicate the IVR resources for local calls:

- In the '***Local listening IP port***' text box, enter the IP port used by the local Server to listen to broadcast messages.
- A check box is available to activate or deactivate the property ***[FreeResourcesForLocalCalls]***. If the local system works without a Dialogic board (solution without IVR), the property has to be deactivated (default case). Otherwise, the property can be activated. It avoids overloading the Server with only remote calls. When the ***[FreeResourcesForLocalCalls]*** option is checked you must enter the the ***{Number}*** of resources that have to remain free for local calls.
- An option is available for activating or deactivating the property [Use dynamic configuration for multi-server]. This option enables the server, in case of problem of connection to the remote server, to correct the remote IP address if this latter has changed; the overflow and innerflow server properties are then modified.
- An option can be used to specify the local IP address used by the server during UDP and TCP communication with client applications and during TCP communications when the server is networked.

  By default, it is the operating system that automatically determines the IP address used for these communications. A static address may be specified. This is used to control the network interface used by the server for these communications.

Note: Apart from the definition of local IP address on M5000 CC, the existing IP filtering function on the operating system can also be used to ensure that unwanted IP datagram is not transmitted on a particular network interface.

- **{End call at the end of conversation } frame**
  The option **{End agent's call automatically when his last correspondent is no longer on line (to be picked up to ensure compatibility with SIP or analogue terminals)}** is used to specify M5000 CC's behaviour when it detects that the agent no longer has any correspondent. By default, this option is ticked and M5000 CC takes the initiative to end the agent's call by forcing a hang up. Nevertheless, it is not possible to force the "on-hook" with some SIP and analogue terminals. This default function is made optional by this option. Moreover, to avoid any error return while trying to on-hook calls on terminals that do not allow this, disable this M5000 CC behaviour by unticking this option.

9 {Server Shutdown} tab:

To set the Server shutdown parameters:

- ***{Maximum stop pending duration}*** *(MaxStopPendingTime)* field This value represents the maximum authorized time for the Server shutdown procedure. After this delay, if the stop execution rule (see Sheet U-11)is not respected, the shutdown procedure is interrupted and the Server continues its execution normally.
- ***{Maximum number of interactive connected components before stop}*** *(MaxConnectedComponentsBeforeStop)* field: The stop execution rule is verified if the number of interactive connected components (M5000 CC Administrator, M5000 CC Service Manager, M5000 CC User, M5000 CC User API, M5000 CC Wall Display) is inferior or equal to this parameter value. If the Server must be closed unconditionally, it is recommended to increase this value to an arbitrary high value.

Note: *These parameters are used when the M5000 CC Server shutdown command is used*

(see Sheet U-315).

10 {Automatic start-up} tab:

To configure the automatic start-up parameters:

- ***{Maximum "M5000 CCServerService" start duration}*** field: This value represents the maximum time available for the "M5000 CCServerService" start procedure. After this limit, it is considered that the NT Service starting procedure has failed. The starting procedure of the Service is considered as completed when the Server is successfully started.
- ***{Maximum "M5000 CCMediaServerServices" start attempts}*** and ReportingServerService start attempts field: When the server is launched by the "M5000 CCServerService" and is successfully started, it tries to start the M5000 CC Report Server service and all the M5000 CC Media Server services on the different systems defined. If this request fails (the machine is not yet booted for example), it tries again to start the services. The number of retries is equal to this parameter value. If M5000 CC Report Server service start-up fails after all these attempts, new attempts will be made after 30 minutes, then every 15 minutes.
- ***{Interval between the "M5000 CCMediaServerServices" start attempts}*** (and "ReportingServerService" start attempts) field: When the M5000 CC Server is launched by the "M5000 CCServerService" and is successfully started, it tries to start the M5000 CC Report Server service and all the M5000 CC Media Server services on the different systems defined. If this request fails (the PC is not yet booted, for example), it tries again to start the services. The number of retries is equal to this parameter value.

Note: The last two parameters will equally be used when the connection between M5000 CC Server and M5000 CC Report Server is lost. In this case, the loss of connection will automatically be detected by the server which will then try to restart the M5000 CC Report Server service with the same parameters indicated above (if it has been set to automatic start).

11 {Update delays} tab:

To set the clients update delays

- ***{Server and Call Server real-time statuses}*** box:

  In the ***{Time between two consecutive update(s)}*** field, enter the time between two consecutive updates for the monitoring windows that are updated automatically. This same value is used for all the monitoring windows:

  - Agents' Extensions window,
  - Clients' extensions window,
  - The view Runs windows (one window is available for each connected M5000 CC Media Server)
  - M5000 CC Media Server Status window (one window is available for each M5000 CC Media Server connected).

  Note: *The value of this parameter must be between 5 and 60 seconds.*

- ***{Clients update after project modification}*** box:

  In the ***{Time between two consecutive updates}*** box, enter the time between two consecutive updates of clients after a project modification (carried out in the M5000 CC Service Manager application see Sheet U-452). This parameter allows the M5000 CC Server application to update its clients asynchronously after a script modification in order to allow client updates to be spread over time. "Spread over time" means that the scripts are loaded asynchronously by the client applications but the new script becomes the active script at the same time for all of them (provided all the applications load the script). This parameter defines the time between each client update.

Note: The value of this parameter must be between 0 and 60 seconds. Its default value is 5 seconds. If a value of 0 is set for this parameter, the client updates are done synchronously (all at the same time).

12 {Activity codes} tab:

In order to better identify the reasons why an agent's statuses are "Not Ready" and "Post-Call Processing, the administrator may define 10 different codes for the "Not Ready" and "Post-Call Processing" statuses for the entire Mitel 5000 Contact Center. Agents must indicate the reason why their status is "Not Ready" or Post-Call Processing either via their M5000 CC User application or by adapting the pre-defined script (see Section 13.4.3 or Section 13.4.4) used for this purpose.

- Enter the associated labels in the fields required ***{Code 1:}*** to ***{Code 10:}***.

Note: A selected label may be used for two different activity codes.

- Enter the default label in the ***{Default code }*** field.

Note: The default code is the one which is used when agents do not specify a reason why they are "Not Ready". The administrator may give this code a specific name. If the administrator does not specify a name, "Default" will be displayed in the real time status windows.

13 {Reports} tab:

Note: These configuration options relate to the reports generated using the M5000 CC Report Server ("LongTermReportign.mdb" database, see Section 12.2).

- Enter a value in the ***{Maximum number of records displayed in a report}*** field:

  this value is the upper limit for the maximum number of records contained in a report. If this limit is exceeded, a message (if an immediate report) or a special report (if scheduled report) indicates the number of records and asks whether the user wants to reduce the corresponding dates interval.

- Check option ***{Use external replication as source}*** :

  If you choose this option, external replication database will be used as source database with the reports instead of « LongTermStatistics.mdb »

Note: *Structure of the external database must be compatible with the structure of « LongTermStatistics.mdb ». (see 4.7.5 : Using external database with M5000 CC Report Server)*

- Enter a value in the {Customizable server name} field: this is the name of the server that will appear on the header of each pre-defined M5000 CC Report Server report. By default, if this field is empty, no name will appear in the reports.

14 {IP port configuration} tab

In addition to DCOM, M5000 CC uses UDP messages to transmit data between the server and its clients (mainly real-time statuses). It uses a TCP connection to transmit data from the servers to client applications (event notification). By default the ports used by M5000 CC are assigned dynamically. It is however possible to configure M5000 CC to avoid this situation where a firewall cannot be used.

Limiting the UDP and TCP ports used only applies to the following client applications: M5000 CC User, M5000 CC Service Manager, M5000 CC Administrator, M5000 CC Wall Display and the users connected via the API.

Limiting the UDP and TCP ports used does not apply to other client applications such as M5000 CC Media Server or M5000 CC Report Server.

Nota :
- A client application always uses the first fee port in the range.

  If all the ports in the range are being used, a remote client application cannot connect.

  The number of ports in the range is thus also the maximum number of client applications connected to the same remote PC.

  The client applications already connected keep their UDP and TCP port.

  The new server UDP and/or TCP ports only become effective after the server has been rebooted.

  If the server UDP or TCP port is being used by another application, the server will use the first free port above the one defined.

  In previous product releases the server UDP port could be indicated in a register. If this register exists, its value will be retrieved by M5000 CC when the M5000 CC File Structure is updated. Otherwise the first free port is used. After the update this register is no longer used.

  The number of ports defined in the interval must at least be equal to the maximum number of client applications connecting to the server from the same PC.

  As the UDP and TCP ports may be used by other applications, we recommend that you provide additional ports, or that you ensure that no application uses the ports within the intervals defined.

  It may take up to two minutes to release a TCP port. If the number of ports defined in the interval corresponds exactly to the number of client applications to be connected, it may be necessary to wait two minutes before being able to reboot your client application.

- If the sub-networks are not used:

  u Configure the interval of available UDP and TCP ports for the previously listed client applications, by completing the fields of the **{UDP and TCP ports used by client applications}area** :

  - **{UDP ports lower bound}** : UDP interval lower bound
  - **{UDP ports upper bound}** : UDP interval upper bound
  - **{TCP ports lower bound}** : TCP interval lower bound
  - **{TCP ports upper bound}** : TCP range upper.

  u Configure the UDP and TCP ports applicable to the M5000 CC Server, by completing the **{Server UDP and TCP ports} area fields** :

- To enable this assignment to take place dynamically, check the **{Use first free UDP port} box** (in this case, the **{ UDP Port:} field** is greyed out), or enter the port number in the **{ UDP port:} field**.
- By default, this M5000 CC Server listening port assignment is dynamic. Leave the **{Use first free TCP port** box checked.

- If the sub-networks are used:

  u Configure the UDP and TCP ports applicable to the M5000 CC Server, by completing the **{Server UDP and TCP ports} area fields** :

  - To enable this assignment to take place dynamically, check the **{Use first free UDP port} box** (in this case, the **{ UDP Port:} field** is greyed out), or enter the port number in the **{ UDP port:} field**.
  - By default, this M5000 CC Server listening port assignment is dynamic. Leave the **{Use first free TCP port** box checked.

Note: To modify the UDP and TCP port range of a sub-network, modify the **"Properties"** of the sub-network concerned via the **[View > Sub-networks]** menu (see Sheet U-344).

15 "Rights" tab

The service manager's agent creation or removal functions can be activated or deactivated according to the needs of each Mitel 5000 Contact Center. The rights granted to service managers are divided into two distinct categories:

- The service manager may or may not create/remove system users. To give him this right, select the option **[User creation and deletion right]**.
- The administrator grants service managers one of the following minimum, intermediate or maximum assignment rights (select the corresponding option in the tab): A description of each of these rights can be found in the window itself.

An agent may be removed from a service at any moment: there are no special rights for this function. On the other hand, if the service manager does not have sufficient rights to re-assign the agent to his service later, a clear warning message is displayed when the manager requests the agent's removal from the service.

Depending on the choice made by the administrator, the graphical interfaces used in the Service Manager are updated (activation, deactivation of some buttons, etc.).

16 "Active directory" tab

This tab allows:

- The use of Active Directory, by ticking the corresponding box
- The association of the "conference organisers" security level with the security groups, using the drop-down menus in this window.

Note: *It is possible to associate several security groups with the same operation level (separation by one).*

17 Numbering tab:

This tab is used to apply the translation rules for the numbers dialled by the product (simply called "Numbering rules").

- To indicate the numbering rules applied, tick the **[Number translation] box**.

  If the numbering rules are not applied, the phone numbers are dialled, except the canonical phone numbers (starting with a +). These numbers are always automatically translated by Windows based on the parameters defined in the "Phone and Modem Options" application in Windows control panel.

  When the numbering rules apply, the numbers dialled by the product are translated, except the following numbers:

  u numbers dialled when a call is transferred to an agent (transfer node in the scripts and agent-to-agent transfer)

  u numbers dialled during an outgoing call.

- Then specify the ***[Internal numbering plan length]***.

  When no numbering rule (defined in the (**"Numbering rules "** window (see Sheet U-333)) applies, the length of the number to dial is compared to the internal numbering plan length. If this latter is longer, the number to dial to access an external line is dialled before the phone number.

  Example:

  With the following parameters and so long as no numbering rule applies to the number to be dialled:

- Internal numbering plan length: 4
- Number used to access an external line: 0

Telephone number: 1234 is dialled as such. On the other hand, the number dialled for the telephone number 12345 is 012345.

Note: *The information **[Number for accessing an external line]** cannot be modified here. This information displays, when the server is in production, the information entered in the "Phone and Modem Options " application in Windows Control Panel.*

The internal numbering plan is also used to import phone numbers from Active Directory if this latter is activated (regardless of whether or not the Number translation box is ticked): M5000 CC will automatically truncate all the phone numbers read in Active Directory and keeps only the last N digits, where N is the internal numbering plan length.

18 "SMTP configuration" tab

To send e-mails from M5000 CC using SMTP, tick the **[Use SMTP]** box and define the following parameters:

- **{SMTP server}** : IP address or name of the SMTP server used to send e-mails (generally, the name of the e-mail server used in the company).
- **{Sender}**: name used as sender while sending e-mails
- **{Identification mode}**: specifies the identification mechanism used for SMTP. Three identification modes are possible (the selected identification mode must be authorised by the SMTP server used):
  - **{No identification}** (no protocol related security).
  - **{Standard identification}**: the user name and password used can be defined. They circulate in an unencrypted text on the network.
  - **{Windows identification}**: the server and media server's security context is used. This information is sent on the network in encrypted form
- **{User}**: user ID used by SMTP when a standard identification is used.
- **{DNS}**: name of the domain in which is defined the user ID used by SMTP when a standard identification is used.
- **{Password}**: Password used by SMTP when a standard identification is used.

Note: *The user name used for standard security is:*

"{User}@{DNS}" if a domain name is specified,
otherwise, it is "{user}".

19 {Published folder} tab:

- To define the publication parameters:

  This parameter allows to custom the location where
  - attached files of inbound e-mails are saved.
  - pictures associated to contacts displayed in the Portal are saved

  User Application uses "Network directory" parameter and Portal uses "Virtual directory" parameter. By this way, Portal can use http links instead of network links.
  - In the ***{Network directory}*** field, enter the name of the directory containing the files. This directory must be a network directory with sufficient write and read rights.
  - In the ***{Virtual directory}*** field, enter the name of the directory representing the access link to the file located in the network directory. This link is sent in the e-mail (concatenated with the file name in order to obtain a correct link). If this virtual directory is a web server virtual directory, its physical directory must correspond to the network directory.
  - Indicate how long the saved pictures files (those in the pictures network directory) will be stored

Note: Pictures of contacts are not available in User application

U-313 : FILE MENU: PRINT

OBJECTIVE

- Print one of the 9 reports available, or all the reports available in the M5000 CC Administrator application.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

- Select the **[Print]** command in the **[File]** menu of the M5000 CC Administrator application, then one of the options from the scroll down menu:
  - **[Services]**,
  - **[Users]**,
  - **[Telephones]**,
  - **[Extensions]**,
  - **[Access numbers]**,
  - **[Profiles]**,
  - **[Wall displays]**,
  - **[Network > Overflow servers]**, or **[Network > Innerflow servers]**
  - **[General print]**.
- An HTMLdocument is displayed in Internet Explorer when you select this command.
- To print this document, use the normal Internet Explorer print option.

U-314 : FILE MENU: CHANGE LANGUAGE

OBJECTIVE

- To change the M5000 CC Administrator application language

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- Commission the M5000 CC Administrator application (see Sheet C-300).
- The following procedure must be carried out before you connect to the M5000 CC Server (see Sheet U-310).

PROCEDURE

Note: The language change also applies to other M5000 CC applications installed on the same PC.

- Select the **[Change language]** command from the **[File]** menu of the M5000 CC Administrator application.
- Select the relevant language in the **"Language selection"** window, then click on ***[OK]***: The language used for the labels, titles, menus, etc. changes.
- You may now connect to the M5000 CC Server (see Sheet U-310).

U-315 : FILE MENU: SERVER SHUTDOWN

OBJECTIVE

- Close the M5000 CC Server application from the M5000 CC Administrator application

Note: Since the automatic start-up mode does not offer a graphical interface for the M5000 CC Server and M5000 CC Media Server(s), the administrator must be able to close the M5000 CC Server application from his own application.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).
- First set the M5000 CC Server shutdown parameters in the **{Server Shutdown}** tab in the **"Properties"** window, see Sheet U-312).

PROCEDURE

- Select the **[ServerShutdown]** command from the **[File]** menu of the M5000 CC Administrator application. the following 2 situations are possible:
  - the stop execution rule (see Sheet U-11) is verified:
  - the M5000 CC Server and M5000 CC Administrator applications close immediately. The other client applications receive an error message indicating the M5000 CC Server shutdown.
  - the stop execution rule is not verified: the M5000 CC Administrator application is in "**shutdown phase**": During the shutdown phase, the M5000 CC Server verifies the parameters defined (see Sheet U-312):
    - u if the stop execution rule is verified before the maximum stop pending duration is reached: the M5000 CC Server and M5000 CC Administrator applications close immediately.
    - u if the stop execution rule is not verified before the maximum stop pending duration is reached: A window stating that "The shutdown of the application is aborted, the shutdown rule is not verified" appears:
      Click on***[OK]*** to return to normal operation.

U-320 : DISPLAY MENU: STATISTICS

OBJECTIVE

- Manage the replication of the statistics in an external database

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

To manage the replication of the statistics in an external database:

- Select the **[Statistics]** command from the M5000 CC Administrator application's **[View]** menu, then one of the following options:
  - **[New]** to create a new configuration database (see step 1 in this sheet),
  - **[Load]** to load an existing configuration database (see step 2 in this sheet),
  - **[Save]** or **[Save As]** to save a replication database (see step **3** in this sheet),
  - **[Stored procedures]** to view and modify the stored procedures of a configuration database (see step **4** in this sheet):
    - To add a new stored procedure (see step **4-a)** in this sheet),
    - To delete a new stored procedure (see step **4-b)** in this sheet),
    - To edit the properties of a stored procedure (see step **4-c)** in this sheet),
  - **[Replication profiles]** to view and modify the replication profiles (see step**5** in this sheet)
    - To add a new profile (see step **5-a)** in this sheet),
    - To delete a profile (see step **5-b)** in this sheet),
    - To edit the properties of a profile (see step **5-c)** in this sheet),
  - **[Replication]** to define and configure a replication (see step **6** in this sheet):
    - To add a new stored procedure instance (see step **6-a)** in this sheet),
    - To delete a stored procedure (see step **6-b)** in this sheet),
    - To edit the a stored procedure instance (see step **6-c)** in this sheet),

1 To create a new configuration database:

- Select the **[New S>tatistics]** command from the M5000 CC Administrator application's **[View]** menu:

  A new replication configuration model is created under the name **"Untitled"**. The name is displayed in the status bar of the M5000 CC Administrator application. To create the database in the ReplicationDB folder, the user must first save the database (see step **3** in this sheet).

2 To load an existing configuration database:

- Select the **[Statistics > Load]** command from the M5000 CC Administrator application's **[View]** menu:
  - In the ***{Database name}*** scroll down list, select the name of the database to be loaded. This combo box contains all the replication configuration databases that have been saved in the ReplicationDB folder of the File Structure.
  - Click ***[Validate]***: The name of the currently loaded database is displayed in the M5000 CC Administrator application status bar.

3 To save a replication database:

- Select the **[Statistics > Save]** or **[Save St atistics> As]** command from the M5000 CC Administrator application's **[View]** menu: The following window appears (unless you have already clicked on ***[Save]*** to save the currently loaded database under a given name.
  - In the textbox, enter the name of the new database.
  - Click ***[Validate]*****:** The name of the currently loaded database is displayed in the M5000 CC

Administrator application status bar.

Note: The administrator cannot modify the configuration database in "Production" (see definition in Section 1.4).

4 To view and modify the stored procedures of a configuration database:

- Select the **[Statistics > Stored procedures]** command from the M5000 CC Administrator application's **[View]** menu: The **"Stored procedures"** window (see Figure 10.18) opens, showing the list of all the stored procedures (see *definition in* Section 1.4) of the open database in the M5000 CC Administrator application. These stored procedures are distinguished by name. The number of required parameters along with a short description (where appropriate) are displayed for each stored procedure:

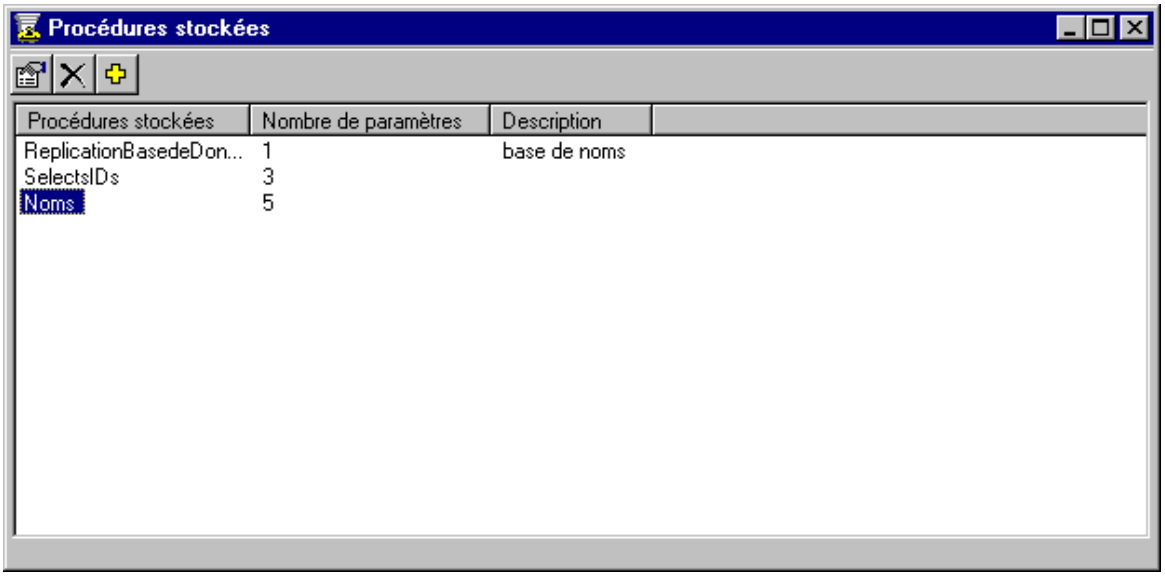


Figure 10.18 APPLICATION "STORED PROCEDURES" WINDOW M5000 CC ADMINISTRATOR

a) To add a new stored procedure:

There are two ways to add a new stored procedure in the current configuration database:

- In the **"Stored procedures"** window, click on the  button in the toolbar at the top of the window: the **"Stored procedure properties"** window opens.
- Using the mouse, select the **[Statistics > storedprocedures]** command from the **[View]** menu, move the mouse to the list area and right click to select **[Add]**: the **"Stored procedure properties"** window opens.
- To define a new stored procedure, you should fill in the following fields in the **"Stored procedures properties" window**:
  - the the stored procedure **{Name}**field: It must be a unique identifier and must be the name of a stored procedure defined in the external database. If the same name is already used for another stored procedure, a message will appear stating that you should modify it. As long as this field is not filled out, the **[Validate]** button is greyed out.
  - the {Number of parameters}**field**: The number of parameters used by the stored procedure is important, because it indicates how many fields of the "StatBuffer.cst" database can be replicated into the external database each time this specific stored procedure is used. This information is mandatory.
  - {Description}**field**: This field is optional. For instance, the administrator can use it as a description of the stored procedure functionality.
  - the **{Name of parameters}** field: This information is mandatory. A default name is given to each parameter, but the administrator can modify it by changing the contents of the textbox. The different names must end with the ";" character. If there are more parameters defined than required, only the first ones in the list will be taken into account. If there are less parameters defined than the ones needed, the **[OK]** button will remain disabled.
- Clicking on **[OK]**will create the new stored procedure.

Note: *As the consolidated data may be exported several times (if the recording changes between two replications), the defined stored procedure must support an edit mode.*

When the stored procedure receives data, it must test whether the record exists already.

If the record does not exist, it may add the record (such as an INSERT TO); if the record exists, it may edit the existing record and replace all the new values (such as a DELETE and an INSERT TO).

Example: Stored procedure with ORACLE

- *For non-consolidated data*
  CREATE PROCEDURE WriteIntoMyTable(v_type IN VARCHAR2) IS
  BEGIN
  INSERT INTO MyTable (FIELD1) VALUES (v_type);
  END WriteIntoMyTable;
- *For consolidated data*
  CREATE PROCEDURE WriteIntoMyTable(v_type IN VARCHAR2) IS
  BEGIN
  DELETE FROM MyTable WHERE FIELD1=v_type;
  INSERT INTO MyTable (FIELD1) VALUES (v_type);
  END WriteIntoMyTable;

b) To delete a stored procedure:

A stored procedure can only be deleted if it is not used in the replication definition (see *definition in* § 1.4). Otherwise, a message informs you that it cannot be deleted. In this case, the administrator has to first delete all the instances defined in the replication definition concerning that specific stored procedure.

There are two ways to delete a stored procedure from the current configuration database:

u In the **"Stored procedures"** window, click on the  button in the toolbar at the top of the window:

u Using the mouse, select the **[Statistics >storedprocedures]** command from the **[View]** menu, move the mouse to the list area and right click to select **[Delete]**:

c) To edit the properties of a stored procedure:

There are two ways to edit a stored procedure in the current configuration database:

u In the **"Stored procedures"** window, click on the  button in the toolbar at the top of the window: the **"Stored procedure properties"** window opens.

u Using the mouse, select the **[Statistics >storedprocedures]** command from the **[View]** menu, move the mouse to the list area and right click to select **[Properties]**: the **"Stored procedure properties"** window opens.

u To define a new stored procedure, you should fill in the following fields in the **"Stored procedures properties" window**:

- When viewing the properties of a stored procedure, the name (**{Name}** field) and the number of parameters (**{Number of parameters}** field) cannot be changed or deleted.
- On the other hand, it is possible to modify, if necessary, the description (**{Description}** field) and name of each parameter (**{Parameter names}** field).

u Click on ***[OK]*** to confirm the modifications.

5 To display and modify the replication profiles:

- Select the **[Profile > statistics]** command from the **[Display]** menu of the M5000 CC Administrator application. The **"Profile definition"** window is displayed (see Figure 10.19).

  This window shows a list of all the profiles of the database open in the M5000 CC Administrator application. These profiles (see *definition in* § 1.4) are distinguished by their identifiers. The number of required parameters along with a short description (where appropriate) are displayed for each profile:

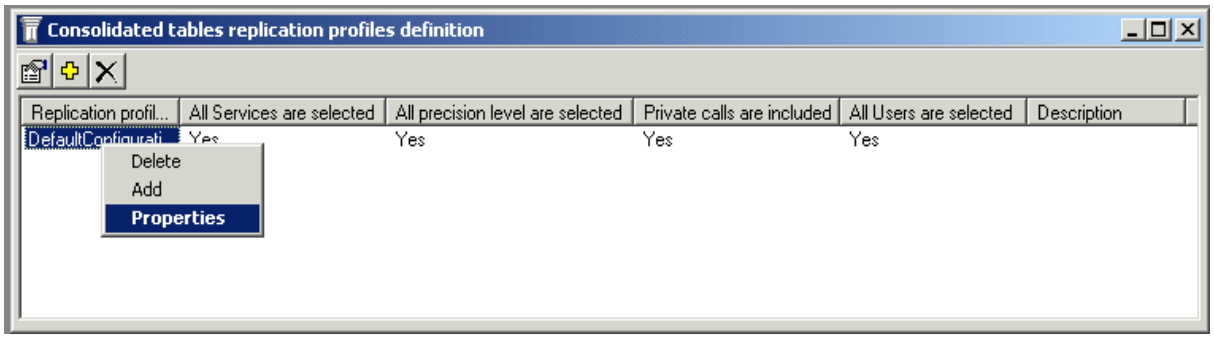


Figure 10.19 APPLICATION "REPLICATION PROFILE DEFINITION" WINDOW M5000 CC ADMINISTRATOR

a) To add a new profile:

There are two ways to add a new profile to the current configuration database:

- In the **"Profile definition"** window, click the  button in the toolbar at the top of the window: the **"Profile definition"** properties window opens.
- With the mouse, select the **[Profile > statistics]** command from the **[View]** menu, place the mouse in the list area then right-click to select **[Add]**: the **"Profile definition"** properties window opens.
- To define a new stored procedure, you must fill in the following fields in the **"Profile definition" properties window**:
  - First, enter a name in the **{Profile name:}** field. and where applicable enter a comment about this profile in the **{Description:}** field.
  - Check or leave the **[Include private calls] box.**
  - Tick one of the three operating modes in the **{Services}** tab:

    -***[Select all Services]***: All the data which relates to a service is considered (independently of the filters),

    -***[Select all Services without filters]***: All the data which relates to an unfiltered service is considered (the general service data),

    -***[Select the Services and service filters]***: You must specify all the services and filters of these services for which the data is to be considered.

    In the **"Services"** box click  or  to add or modify a service, then in the window which has just been opened you may tick for each service either the [Record linked to no filter included] ***option*** which lets you include or ignore filtered data(***{record linked...}***column in the box) or the[Select all the Service filters] ***option*** which lets you select all the service filters or select a specific sub-set of these filters which are available with the ***[>]***, ***[>>]***, ***[<<]*** or ***[<]*** buttons.
  - Tick one of the two operating modes in the **{Precision levels}** tab (for replicating consolidated tables only:

    -***[Select all precision levels]***: all the levels will be replicated,

    -***[Select the precision levels on which the data will be filtered:]***.

    In the **"Precision levels"** box you may then select or unselect the levels available using the ***[>]***, ***[>>]***, ***[<<]*** or ***[<]*** buttons.
  - Check one of the two use modes in the **{Users}** tab:

    -[Select all the users defined in the system]

    -***[Select the users Ids that will be replicated]***.

    In the **"Agents"** box you may then select or deselect the users available using the ***[>]***, ***[>>]***, ***[<<]*** or ***[<]*** buttons.
  - Clicking on **[OK]**will create the new instance.

b) To delete a profile:

A profile can only be deleted if it is not used in the replication definition (see Section 1.4). Otherwise, a message informs you that it cannot be deleted. In this case, the administrator has to first delete all the instances defined in the replication definition concerning that specific stored procedure.

There are two ways to delete a profile from the current configuration database:

- In the **"Profile definition"** window, click the  button in the toolbar at the top of the window.
- With the mouse, select the **[Profile > statistics]** command from the **[View]** menu, place the mouse in the list area then right-click to select **[Delete]**.

c) To edit the properties of an existing profile

There are two ways to edit the propertiesof a profile in the current configuration database:

- In the **"Profile definition"** window, click the  button in the toolbar at the top of the window: the **"Profile definition"** properties window opens.
- With the mouse, select the **[Profile > statistics]** command from the **[View]** menu, place the mouse in the list area then right-click to select **[Properties]**: the **"Profile definition"** properties window opens.
- To define a profile, you must fill in the following fields in the **"Profile definition" properties window**:
  - You cannot modify or delete the name (**{Profile name:}** field). while the properties of a profile are displayed.
  - On the contrary, the description and each parameter field can be changed if needed.
- Click on ***[OK]*** to confirm the modifications.

6 To define and configure a replication:

- Select the **[Replicate > Statistics]** command from the M5000 CC Administrator application's **[View]** menu: The **"Replication definition"** window opens with the following information for each element (see Figure 10.20):
  - The ***{Replication type}***: This may apply to the consolidated tables or the non-consolidated "LongTermStatistics.mdb" tables.
  - The selected ***{Table name}*** “LongTermStatistics". The administrator chooses a table from the tables in the "LongTermStatistics.mdb" databases.
  - The selected ***{Stored procedure name]*** (definition of an instance of an existing stored procedure). The administrator selects a stored procedure name from those defined previously in the "stored procedures" window (see Figure 10.18)in the configuration database.
  - The selected ***{Profile name}***. The administrator selects a profile name from those defined previously in the "profiles" window (see Figure 10.19)in the configuration database.
  - The ***{Fields}*** of the chosen table that are used as parameters in this case. There must be one field given for each parameter being in the definition of the selected stored procedure.
  - An optional ***{Description}*** provided by the administrator to indicate the objective of each replication step (see definition in Section 1.4):

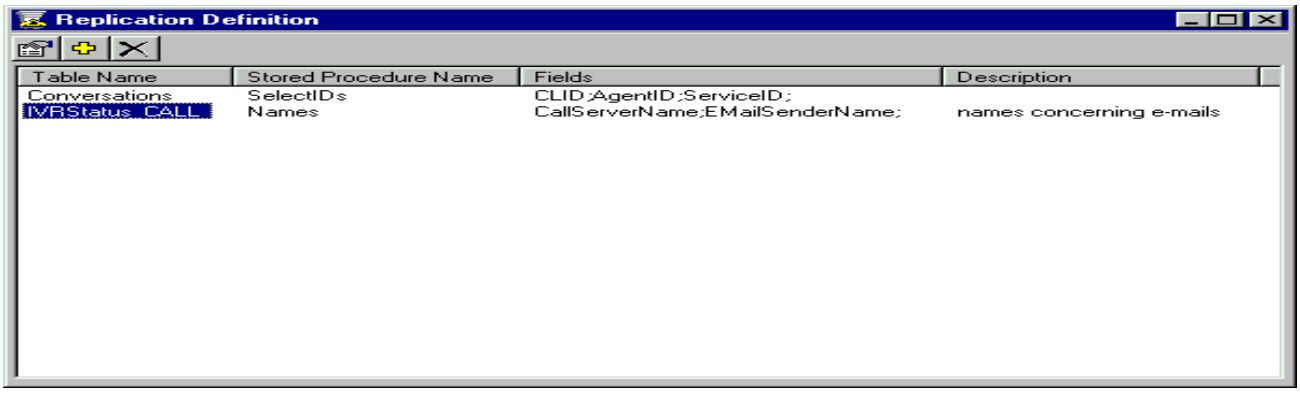


Figure 10.20 APPLICATION "REPLICATION DEFINITION" WINDOW M5000 CC ADMINISTRATOR

a) To add a new stored procedure instance:

There are two ways to add a new replication step in the current configuration database:

- In the **"Replication definition"** window, click on the  button in the toolbar at the top of the window: the **"Configure the stored procedure"** window opens.
- Using the mouse, select the **[Replication > Statistics]** command from the **[View]** menu, move the mouse to the list area and right click to select **[Add]**: the **"Configure the stored procedure"** window opens.
- To configure a new replication stage (i.e.: a new instance of a stored procedure) **"Configure the stored procedure"**:
  - First, select the type of replication from the **{Replication type}** drop-down list.
  - Then select a table name from the names displayed in the **{Table Name}** scroll down list. The list contains all the existing table names of the "Statbuffer.cst" database.
  - Then select a stored procedure among the ones existing in the **{Stored procedure name}** scroll down list. The possible stored procedures are the ones defined in the currently loaded replication database.
  - Then, if the replication type is "Consolidated table replication" select a profile from the profiles listed in the **{Profile name}** modifiable area. The possible stored procedures are those defined in the currently loaded replication database.
  - The **{Parameters values}** box contains all the parameter names contained in the selected stored procedure definition. The administrator must associate a field with each one of them by carrying out the following procedure:

    -selecting an item in the ***{Parameter value}*** list.

    -clicking on the ***[Field value]*** button.

    -selecting a field from the drop-down list. The list contains all the fields in the selected "StatBuffer" table.

    -Click on ***[OK]***: The list is updated immediately.
  - The administrator may also add a comment in the **{Description}** field. It is optional but can be useful for the administrator who can use it to recall the goal of this replication step.
  - Clicking on **[OK]**will create the new instance.

b) To delete a stored procedure instance:

There are two ways to delete a stored procedure from the current configuration database:

- In the **"Replication definition"** window, click on the  button in the toolbar at the top of the window:
- Using the mouse, select the **[Replication > Statistics]** command from the **[View]** menu, move the mouse to the list area and right click to select **[Delete]**:

c) To edit the a stored procedure instance:

There are two ways to edit the properties of an instance stored in the current configuration database:

- In the **"Replication definition"** window, click on the  button in the toolbar at the top of the window: the **"Configure the stored procedure"** window opens.
- Using the mouse, select the **[Statistics> Replication]** command from the **[View]** menu, move the mouse to the list area and right click to select **[Properties]**: the **"Configure the stored procedure"** window opens.
- In the **"Configure the stored procedure"** window, while a stored procedure instance is displayed you cannot modify or delete the replication type, the name of the "Statbuffer"/"LongTermStatistics" table, the name of the stored procedure or the name of the profile. On the contrary, the description and each parameter field can be changed if needed.
- Click on ***[OK]*** to confirm the modifications.

U-321 : DISPLAY MENU: SERVICES

OBJECTIVE

- Managing the "Services" needed to define physical and human resources:
  - To manage the inbound services:
    - Add a Service (see step **1** in this sheet),
    - Associate DNIS ranges to inbound Services (voice) (see step **2** in this sheet),
    - Delete and inbound service (see step **3** in this sheet),
    - Associating inbound call pits with the Service (CSTAconfiguration - solution without IVR only) (see step **4**),
  - To manage the outbound services
    - Add outbound Service (see step **5** in this sheet),
    - Delete outbound Services (see step **6** in this sheet),
  - Agents:
    - Add (Delete) agents/user profiles to (from) a Service (see **7** in this sheet).
  - Service managers:
    - Add a new manager to a Service (see step **8** in this sheet).
    - Delete a manager from a Service (see step **9** in this sheet).
  - Managing e-mail boxes:
    - Add a new e-mail inbox and assign it to a Service (see step **10** in this sheet).
  - Managing user groups:
    - Assign the service to user groups (see step **11** in this sheet).

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

To manage the "Services" needed to define physical and human resources:

- Select the **[Services]** command from the M5000 CC Administrator application's **[View]** menu; the **"Services"** management window opens (see Figure 10.21).

  In **SDI** display mode, the **"Services"** management window appears with all the windows which are connected to it (among other, the DNIS intervals, associated call pits, e-mail inboxes windows are also displayed).

- Select the relevant Service then click on its button in the toolbar in the window or access the equivalent command by right clicking on the Service concerned to open the drop-down menu and refer to the relevant step in this sheet:

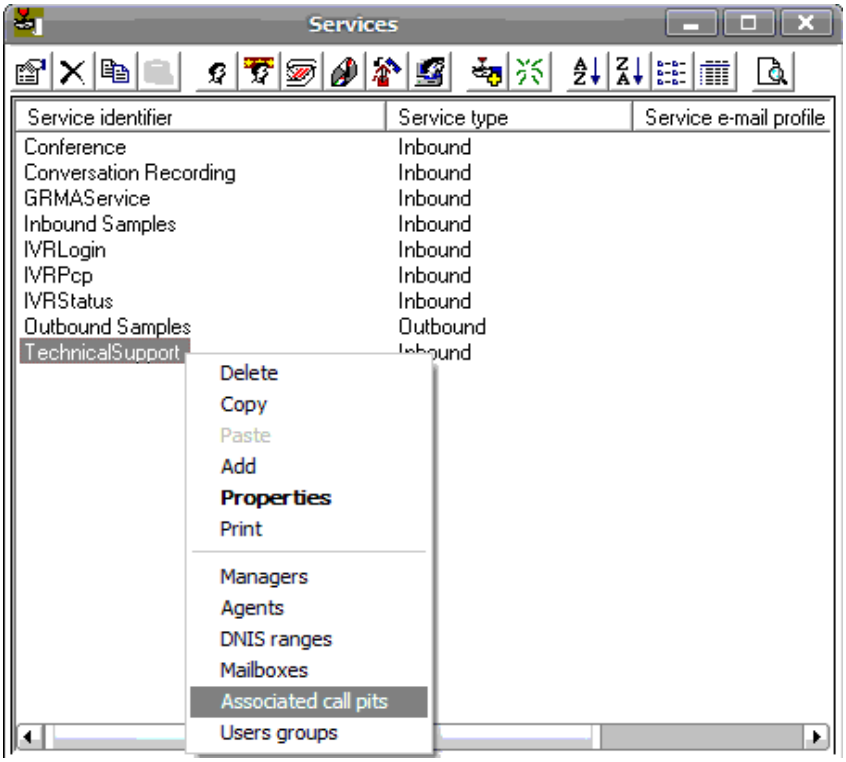


Figure 10.21 APPLICATION "SERVICES" WINDOW M5000 CC ADMINISTRATOR

1 Adding a Service

- In the toolbar of the **"Services"** window, click the **Add Service** button  .

  - Type a name for the Service in the ***{Service ID}*** **textbox.**
  - Check the ***[Inbound]*** option as ***{Service type}***.
  - If needed, assign a profile to the Service (see Sheet U-331).
  - If needed, assign a profile to the Service (see Sheet U-331) in order to process incoming SMS.
  - If needed, assign a SMS profile to the Service (see Sheet U-352)
  - For the conference service only, indicate whether by default voice synthesis must be used for voice messages, by ticking the option ***[Use voice synthesis for voice messages]***.
  - For the service Conference only: possibility to use strapping function by checking the option ***[Use strapping for conference]***. If strapping function is used, a message call pit group must also be configured (U-325/4)
  - If necessary, tick the “Use name resolution” boxes to activate the search for a contact based on his or her caller number.
  - To define the service as the one to use by default in case of call return to the attendant, tick the checkbox “Service for call returns to attendant”. Thus, if a call has not been answered by an internal subscriber and the PBX is configured to divert returning calls to the attendant, the call will be sent to this service. (Only in a solution without IVR.)
  - Click ***[OK]***.

2 Binding DNIS ranges to inbound Services (voice)

The DNISes are telephone numbers called by customers to reach the Service from outside. To display the DNIS range window:

- In **SDI** display mode: The Services management window appears with all the windows that are connected to it (among other, the DNIS range window).

  Note: *In SDI display mode, as soon as another Service is selected the DNIS range window is updated. A single window is used to display the information which relates to all the Services.*

- In **MDI** display mode: The Service management window opens. To display the DNIS range window in the Services management window:

  u select the Service you want, click on the **DNIS range** button  that corresponds to the Service or

  u right click on the mouse to display the drop down menu and select **[DNIS ranges]**

  Note: *In MDI display mode, there is one DNIS range window per Service. If you want to display the information that relates to another Service, you must select this Service and repeat the operation described above.*

There are two methods to add and edit a DNIS range:

- Click the **Add DNIS range**  button in the toolbar or
- Right click to display the pop-up menu and select **[Add]**.

There are four possibilities to edit an existing DNIS range. First of all, select the DNIS range to be edited:

- Click on the  button in the toolbar.
- Right click to display the pop-up menu and select **[Properties]**.
- Press the **<Enter>** key on the keyboard.
- Double click on the relevant DNIS range name.

When a new range is added or an existing range is edited, the same window opens and the different fields to be completed are the following:

u ***{From}***: Lower DNIS range limit,

u ***{to}***: Upper DNIS range limit,

u ***{Alias}***: alias associated with the DNIS range (15 characters maximum) (see § 1.4),

u ***{Remote}*** : This option must be enabled if the DNIS specified in the range are to be used for transfer to another site.

Note: *If no remote DNIS are defined you will not be able to view the display properties of the remote Service.*

For the conference service, only some DNIS numbers can be specified and not the DNIS ranges.

When a new DNIS range is added or an existing DNIS range is edited in the Conference Service, the same window opens and the different fields to be completed are:

u ***{DNIS}***: DNIS number.

u ***{Language}*** : the language to associate to the DNIS: only the languages not already associated with another DNIS of the service.

3 Deleting inbound Services

Note: The following operations are only available when the Service you want to delete has no versions in "Production" or in "Beta". Moreover, no Service managers must be connected to this Service.

There are two ways to delete a service:

- Select the relevant service then click on the **Delete Service**  button in the toolbar or
- Right click on the relevant Service to display the pop-up menu and select **[Delete]**.
- Click on ***[OK]*** in the confirmation dialog box.

4 Associating incoming call pits with the Service

Note: *This is only valid for configuring the Reject 21 and call return to attendant functionalities which are provided for a CSTA configuration without IVR.*

To display the call pits associated with an inbound service

• In **SDI** display mode: The Services window and the associated call pits window are displayed (see Figure 10.22). Select the Service you want from the Services list. The associated call pits window is immediately updated and indicates the calls pits associated with the selected Service:

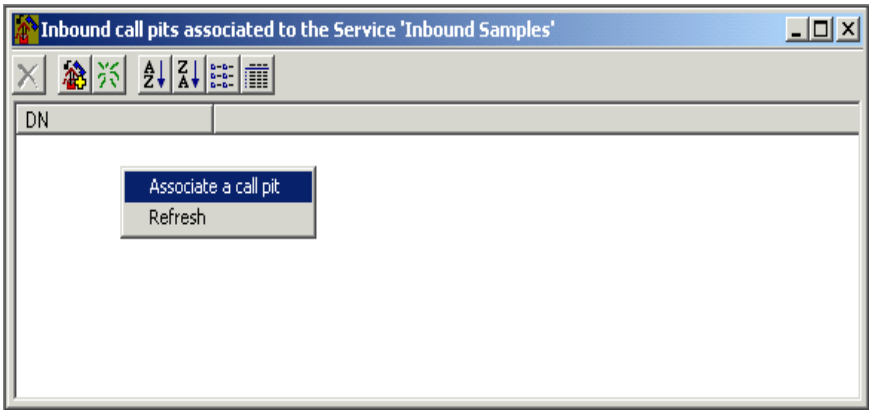


Figure 10.22 "INCOMING CALL PITS ASSOCIATED WITH THE XXX SERVICE" WINDOW

- In **MDI** display mode: Only he Services window is displayed. Select a Service from the list of Services.

  Click on the  button or right click on the relevant service and select **[Associated call pits]** from the drop down menu. The window containing the call pits associated with this Service is displayed immediately. It indicates the call pits associated with the selected Service.

Note: *Several associated call pits windows may be displayed at the same time. To do this, simply repeat the same operation for other Services.*

To access a call pit associated with an inbound service

- In the Services list in the Services window, select the Service to which a call pit is to be added.
- Click the  button or right click in the call pit window and select **[Associate a call pit]** from the pop-up menu. The window for defining the new association appears.
- In the **"New association"** window, enter the DN of the new call pit then click on ***[OK]*** The call pit DN appears in the list of call pits associated with this Service.

To delete an association between an inbound call pit and an inbound Service:

- Select the relevant Service from the Services list in the Services window.
- In the associated call pit window, select the DN of the call pit that is to be deleted.
- Select the  button or, in the call pit window, right click on the DN that is to be deleted from the association and select **[Delete association]** from the pop-up menu. The call pit disappears from the list of call pits associated with this Service.

5 Adding outbound Services

- In the toolbar of the **"Services"** window, click the **Add Service** button  .
  - u Type a name for the Service in the ***{Service ID}*** **textbox.**
  - u Choose the ***Outbound*** option as ***Service type***.
  - u If needed, assign a profile to the Service (see Sheet U-331).
  - u Click ***[OK]***.

6 Deleting outbound Services

Note: *The following operations are only available when the Service you want to delete has no versions in "Production" or in "Beta". Moreover, no Service managers must be connected to this Service.*

There are two ways to delete a service:

- Select the relevant service then click on the **Delete Service**  button in the toolbar or
- Right click on the relevant Service to display the pop-up menu and select **[Delete]**.

- Click on ***[OK]*** in the confirmation dialog box.

7 Add (Delete) agents/user profiles to (from) a Service

- Select the Service to which you want to add a user from the Services list in the Services window.
- There are two ways to edit the list of agents of this service:
  - u Click on the **Agents in the service**  button, or
  - u Right click on the Service and select **[Agents]** from the pop-up menu.
- In the **"Agents in the Service"** window, click on the **Add/Remove** button  or right click on the window to display the pop-up menu and select **[Add/Remove]**.
- In the **"Add/Remove agent(s)" window**, manage agents and user profiles assigned to the service. Left side displays agents and user profiles that can be assigned to the service. Right side displays agents and the user profiles that are assigned to the service:
  - u To add an agent/user profile, you have to add it in the right side by selecting the item in the left side and by clicking on the **[add]** button
  - u To remove an agent/user profile, you have to remove it from right side by selecting it in the right side and by clicking on the **[remove]** button
- To assign an agent to the production version of a service, select Assign agent to service (production version) check box

Note: *The check box appears only if the service has a production version defined*

Note: *Only the agents that were not previously member of the service are assigned to the production version (and can receive calls). The assign status of the agent that where previously member of the service is not modified.*

Note: *The following operations are only available when the user is not connected to a Service in "Production" or in "Beta".*

8 Adding a new manager to a Service

- Select the Service to which you want to add a user from the Services list in the Services window.
- On the toolbar of the **"Services"** window, click on the **Managers in the Service** button  .
- On the toolbar of the **"Service Manager"** window, click the **Add manager**  **button.**
- Double click on the user you want to make a "manager of the Service".

9 Removing a manager from a Service

- Select a Service from the **"Services"** window.
- Display the list of managers in this Service:
  - u Either by clicking on **Agents in the service**  button,
  - u Or by right clicking on the Service then selecting **[Managers]** from the pop-up menu.
- In the **"Managers of the Service"** window, select a manager.
- There are two ways to delete this manager:
  - u Click on the **Delete manager**  button, or
  - u Right click on the manager then select **[Delete]** from the pop-up menu.
- Click on ***[OK]*** in the confirmation dialog box.

10 adding a new e-mail inbox and assigning it to a Service

- Once the **[View > Services]** command is selected:
  - u In **SDI** display mode: the "**Inbound mailboxes"** window opens automatically (at the same time as the other windows) listing the mailboxes of the Service that has been selected.

- In **MDI** display mode you must click again on the **Inbound mailboxes of the Service** button  in the **"Services"** management window (see Figure 10.21) to open the **"Inbound mailboxes"** window.

Note: *This window is only active if a profile is defined for the selected Service.*

- In order to manager e-mails correctly you must respect the following constraints when creating e-mail boxes:
  - the e-mail boxes of the profiles used by M5000 CC must be in the same language.
  - the language of an e-mail box is provided when the mailbox is opened for the first time in a profile,
  - the mailbox language will be used by Outlook to open the profile in question.
- Click the **Add mailbox for e mail**  icon in the **"Inbound e-mailbox"** window. The **Mailbox properties** window appears.
- In the **{Mailbox}** scroll down list, select the e-mail box to be used by the Service as an inbound mailbox (note: the address (see Section 13.2.7.3.2) assigned to this e-mailbox will be returned when a response operation (see Section 13.2.7.3.1) is carried out by an e-mail Manager).
- Click ***[OK]***.
- Click the **Add mailbox for SMS**  icon in the **"Inbound e-mailbox"** window. The **Mailbox properties** window appears.
- In the **{Mailbox}** scroll down list, select the mailbox to be used by the Service as an inbound mailbox for incoming SMS.
- Click ***[OK]***.

11 Associate the service with user groups.

- There are two ways to edit the list of user groups associated with this service:
  - Click the button **User groups associated with this service**  , or
  - Right click the Service and select **[User groups]** from the pop-up menu.
- In the **Service user groups** window, is displayed a list of existing user groups in the **{User group ID}** field, as well as information about integration or non-integration of the Service into this user group in the **{Service}** field.
- To change the association of the selected service with a user group, choose a user group and then use the **Activate Service**  button or **Deactivate Service**  button which will be available depending on the current assignment status.
- Another way to change the status of a service's assignment to a user group is to right-click the desired user group and then assign the service to this group according to the proposed option (**Activate Service** / **Deactivate Service**).

U-322 : DISPLAY MENU: USERS

OBJECTIVE

- To manage the "Users" and "Agents" needed to define physical and human resources:
  - Managing the Users:
    - Add users (see step **1** in this sheet).
    - Modify user properties (see step **2** in this sheet).
    - Delete users (see step **3** in this sheet).
  - Managing the Agents:
    - Add a new agent to a Service (see step **4** in this sheet).
    - Delete an agent from a Service (see step **5** in this sheet).
    - Assign a user to a user group (see step **6** in this sheet).
    - View a user's directory access rights (see step **7** in this sheet).

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

1 To add a new user to the system:

- Select the **[Users]** command in the M5000 CC Administrator application's **[View]** menu: the **"Users"** window opens.
- In the toolbar in the **"Users"** window, click the **Add User**  button: the **"User properties"** window opens.
- Enter the different user characteristics in the **User properties** window:
  - Enter the user identifier in the ***{User Id}*** text box. Identifiers have to begin with a letter and be system-wide unique.
  - Enter the user account in the ***{User account}*** text box to make the association with its Windows account (see **COMMENTS** in this sheet) during its connection to an M5000 CC Portal (see Sheet C-900).
  - Enter the name of the user in the ***{Name}*** text box.
  - Enter the user password in the ***{Password}*** and ***{Confirm password}*** text boxes. Passwords must be "numerical".
  - If the user is to be an administrator, check ***[Administrator]***.
  - Check ***[Recordable]*** if you allow the Service manager to record this agent (see note).
  - Enter an alias number for the user in the ***{Alias number}*** text box. The alias numbers must be "numerical".
  - Check **[Report Administrator]** if you authorize the user to modify the access rights for the reports using the remote report display interface (see Sheet U-200).
  - The ***{initial activity}*** of a potential agent is the activity status which the agent enters just after logging in. It can only be **"Ready"** or **"Not Ready"**. This makes the agent's status management easier because he does not need to choose the appropriate initial activity manually after login. The default value for this property is **"Ready"**.
  - Tick **[Conference administrator]** if you authorised the user to modify, delete or supervise all the reserved conferences, although he or she is not the conference organiser.
  - Tick **[Conference organiser]** if you authorise the user to organise some conferences.

- Click ***[Validate]***.

Note: *The **[Recordable]** option may be disabled if the maximum number of recordable agents has been reached. To solve the problem, disable this option to other users or increase the number of recordable agent. This maximum number is a system property (see the **{Recordable}** tab in the "Properties" window in Sheet U-312).*

2 To modify user properties:

- Select the **[Users]** command in the M5000 CC Administrator application's **[View]** menu: the **"Users"** window opens.
- There are three possible ways to edit the properties of a user:
  - u Select a user by clicking on the corresponding User ID, then click on the **Edit user properties** button  or
  - u Right-click "**User ID"** then select **[Properties]** from the pop-up menu or
  - u Double-click on a **User ID**.
- Refer to step 1 in this sheet for the description of the different fields in the "**User Properties"** window.
- Click on ***[OK]*** to confirm the modifications.

3 To remove a user from the system:

Note: *The following operations are only possible if the user is not logged in and is not allocated to any Services for which he is either an agent or an administrator.*

- Select the **[Users]** command in the M5000 CC Administrator application's **[View]** menu: the **"Users"** window opens.
- Select a user from the list.
- There are two ways to delete a user:
  - u Click on the **Delete user**  button, or
  - u Right click on the user then select **[Delete]** from the pop-up menu.
- Click on ***[OK]*** in the confirmation dialog box.

  When a user is being deleted from the system (via the Administrator), M5000 CC backs up the list of services and teams to which this user belongs. This information is used by the report server while generating agent type reports.

  This enables the report server to access the statistics of deleted users.

Figure 10.23 "CHOICE OF AGENTS FOR A REPORT" WINDOW

The  button is used to include the agents deleted from the system in this list or to exclude them from it.

Note: Note that selection by team automatically includes the deleted agents.

A user deleted from the system does not remain permanently accessible. In fact, after a period defined by the longest statistics persistence compared to its deletion time, the night procedure definitely destroys all the data relating to this user.

Moreover, a deleted user is no longer considered as such if he is created again. In this case, the server and team association is lost.

4 To add an agent to a Service:

- Select the **[Users]** command in the M5000 CC Administrator application's **[View]** menu: the **"Users"** window opens.
- Select a user from the list.
- There are two ways to display the list of Services:
  - u Click on the **User services**  button, or
  - u Right click on the user then select **[Services]** from the pop-up menu.
- Right click on the Service concerned then select **[Activate agent]** from the pop-up menu.

5 To remove a user from a Service:

Note: *The following operations are only available when the user is not connected to a Service in "Production" or in "Beta".*

- Select the **[Users]** command in the M5000 CC Administrator application's **[View]** menu: the **"Users"** window opens.
- Select a user from the list.
- There are two ways to display the list of Services:
  - u Click on the **User services**  button, or
  - u Right click on the user then select **[Services]** from the pop-up menu.
- Right click on the Service concerned then select **[Deactivate agent]** from the pop-up menu.

6 Assigning a user to a user group:

- Select a user from the **"Users"** window.
- There are two ways to edit the list of user groups associated with this user:
  - u Click the **User's user group**  button, or
  - u Right-click the user and select **[User groups]** from the pop-up menu.
- In the user's **User groups** window, is displayed a list of existing user groups in the **{User group ID}** field, as well as information about integration or non-integration of the user into this user group in the **{User}** field.
- To change the association of the selected user with a user group, choose a user group and then use the **Activate User**  button or **Deactivate User**  button which will be available depending on the current assignment status.
- Another way to change the status of a user's assignment to a user group is to right-click the desired user group and then assign the user to this group according to the proposed option (**Activate User** / **Deactivate User**).

7 Viewing a user's directory-access rights:

- Select a user from the **"Users"** window.
- A user's directory-access rights can be seen in two ways:
  - u Click the **User's directory access rights**  button, or
  - u Right-click the user and select **[User's directory access rights]** from the pop-up menu.
- After taking these steps, it is possible to view the user's access rights in the **"User's directory access rights" window.** In the **{Authorised directories}** field, you will find the list of directories for which the user has an access right, while in the **{Access to red lists}** field you will see whether the user has access to the red lists of the directories for which he or she has an access right.

COMMENTS

The user connecting to M5000 CC Portal must at least belong to a security group associated with a portal

utilisation level but must not necessarily be defined inside the system.

While connecting for the first time, this user is automatically declared in the system (if he or she has the rights). This automatic declaration retrieves the main data associated with this account via Active Directory (name, e-mail address).

Moreover, if this user is associated with a phone number (in Active Directory), the system adds this extension to the list of supervisable telephones. (If the phone number read in Active Directory is longer than the internal numbering plan chosen by the administrator (see sheet U-312), only this latter's N last digits will be taken into account, where N is the internal numbering plan length).

On the other hand, if the user exists already, during the user's first connection, the portal prompts for his or her old ID (+ password) so as to be able to make the association with the user's Windows account.

This association can only exist if Active Directory is available.

U-323DISPLAY MENU: USER PROFILES

OBJECTIVE

- To manage user profiles:
  - Add user profiles (see step **1** in this sheet).
  - Modify user profiles properties (see step **2** in this sheet).
  - Delete user profiles (see step **3** in this sheet).
  - Add a user profile to a Service (see step **4** in this sheet).
  - Remove a user profile from a Service (see step **5** in this sheet).

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

1 To add a new user profile to the system:

- Select the **[User profile]** command in the M5000 CC Administrator application's **[View]** menu: the **"User profiles"** window opens.
- In the toolbar in the **"User profiles"** window, click the **Add**  button: the **"User profiles properties"** window opens.
- Enter the different user characteristics in the **User properties** window:
  - Enter the user identifier in the ***{Identifier}*** text box. Identifiers have to begin with a letter and be system-wide unique.
  - Enter the name of the user in the ***{Name}*** text box.
- Click ***[Validate]***.

2 To modify user profile properties:

- Select the **[User profiles]** command in the M5000 CC Administrator application's **[View]** menu: the **"User profiles"** window opens.
- There are three possible ways to edit the properties of a user:
  - Select a user profile by clicking on the corresponding item, then click on the **Properties** button  or
  - Right-click the user profile item then select **[Properties]** from the pop-up menu or
  - Double-click on a user profile item.
- Refer to step 1 in this sheet for the description of the different fields in the "**User profile properties**" window.
- Click on ***[OK]*** to confirm the modifications.

3 To remove a user profile from the system:

- Select the **[User profiles]** command in the M5000 CC Administrator application's **[View]** menu: the **"User profiles"** window opens.
- Select a user profile from the list.
- There are two ways to delete a user profile :
  - Click on the **Delete**  button, or

- u Right click on the user profile then select **[Delete]** from the pop-up menu.

- Click on ***[OK]*** in the confirmation dialog box.

4 To add a user profile to a Service:

- Select the **[User profiles]** command in the M5000 CC Administrator application's **[View]** menu: the **"User profiles"** window opens.
- Select a user profile from the list.
- There are two ways to display the list of Services:

  - u Click on the **Services**  button, or

  - u Right click on the user then select **[Services]** from the pop-up menu.

- Right click on the Service concerned then select **[enable user profile]** from the pop-up menu.

5 To remove a user from a Service:

- Select the **[User profiles]** command in the M5000 CC Administrator application's **[View]** menu: the **"User profiles"** window opens.
- Select a user profile from the list.
- There are two ways to display the list of Services:

  - u Click on the **services**  button, or

  - u Right click on the user then select **[Services]** from the pop-up menu.

- Right click on the Service concerned then select **[Disable user profile]** from the pop-up menu.

U-324 : DISPLAY MENU: PHONES

OBJECTIVE

- Managing the "Phones" needed to define physical and human resources:
  - Add a "private", "public" or "message call pit" telephone (see step **1**in this sheet).
  - Delete a telephone (see step **2** in this sheet).
  - Assign an extension to a message call pit group in **SDI** display mode (see step **3** in this sheet).

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

1 To add a new private, public or message call pit phone to the system:

- Select the **[Phones]** command in the M5000 CC Administrator application's **[View]** menu. the **"Phones"** window opens:

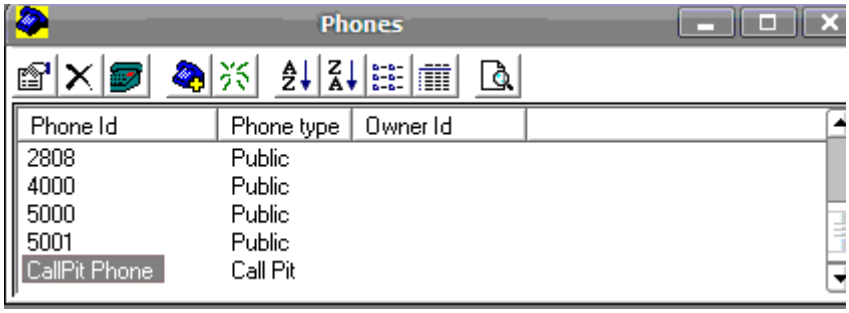


Figure 10.24 APPLICATION "PHONES" WINDOW M5000 CC ADMINISTRATOR

- In the toolbar of the **Phones** window, click the **Add phone** button  .
- In the **Phone properties** window, configure the following phone characteristics:
  - u Enter a phone identifier in the ***{Phone Id}*** text box. Phone identifiers have to begin with a letter.
  - u To configure the telephone ***{Type:}*** there are three options, which are presented as radio buttons:
    - If the phone is going to be used by a single user, check **[Private]** and enter the identifier of this user in the **{Owner Id}** text box.
    - Otherwise, check **[Public]**.
    - The administrator may also define a phone as a "Call pit" by ticking **[Call pits**.

Note: *Click **[Validate]**. An **"Extension properties"** window is opened, with the field **{Phone ID}** filled.*

- If you don't want to define an extension now, click on [Cancel]
- To add/define an extension to the created phone (see Sheet U-325).

2 To remove a phone from the system:

Note: *The following operations are only available when no user is connected on this phone.*

- Select the **[Phones]** command in the M5000 CC Administrator application's **[View]** menu. the **"Phones"** window opens (see Figure 10.24).
- Select a telephone from the **"Phones"** window,
- There are two ways to delete a phone:

- u Click the **Remove phone**  button, or
- u Right click on the phone then select **[Delete]** from the pop-up menu.

- Click on ***[OK]*** in the confirmation dialog box.

3 Assigning an extension to a message call pit group in SDI display mode:

Note: *After a call pit group is created (see Sheet U-326), you may assign an extension to this group. In MDI display mode, refer to Sheet U-325 (see MDI/SDI display mode in sheet U-345).*

- In **SDI** display mode, select the **[Phones]** command from the **[View]** menu. The **"Phones"** and **"Extensions"** windows open (see Figure 10.24 and Figure 10.25).
  - u Select the call pit type phone and extension you want to allocate to a message call pit group. In the toolbar in the **"Extensions"** window, click on the extension properties button  .
  - u Select the message call pit group ID you want and confirm.

U-325 : DISPLAY MENU: EXTENSIONS

OBJECTIVE

- Managing the "Extensions" needed to define physical and human resources
  - Add an extension to a phone (see step **1** in this sheet).
  - Delete an extension from a phone (see step **2** in this sheet).
  - Assign an extension to a message call pit group in MDI display mode (see step **3** in this sheet).

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

1 To add a new private, public or message call pit phone to the system:

Note: *Condition required for adding an extension: the telephone identifier must be defined when the phone is added (see Sheet U-310).*

- From the M5000 CC Administrator application's **[View]** menu, select the **[Extensions]** command. the **"Extension"** window opens:

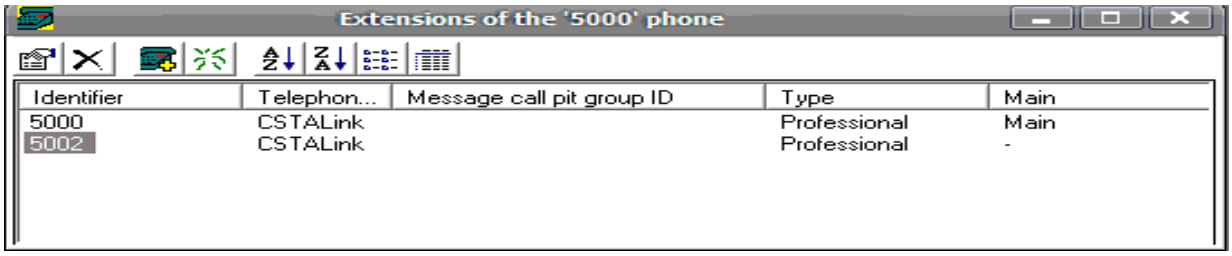


Figure 10.25 APPLICATION "EXTENSIONS" WINDOW M5000 CC ADMINISTRATOR

- In the **"Extensions"** window toolbar, click the **Add extension**  button.
- In the **"Extension Properties"** window, set the following parameters:
  - u Key in the extension number in the ***{Extension}*** text box.
  - u Click the button to the right of the ***{Phone Id}*** field: the **"Phones"** window opens; double click the name of the relevant phone in this window.

    Note: *if the **"Extension properties"** window is opened by the creation of a new phone, this option is disabled because the **{Phone Id}** field is already filled.*
  - u In the ***{CSTA link ID}*** scroll down list, select the identifier of the CSTA link with which the extension is to be associated. You cannot change the CSTA link associated with an extension when the extension is monitored. Each M5000 CC extension is monitored by a single CSTA link. As a new extension is being defined, you must assign it to a previously defined CSTA link. If the M5000 CC File Structure is from an updated V3 version, the existing extensions will be automatically allocated to the "DefaultLink" default link.
  - u For the extensions that are associated with a message call pit, the default option is creating new message callpit group by enter an ID in ***{message call pit group ID},*** it is also possible to use an existing message call pit group with the "Existing" option and select the message call pit ID from the ***{message call pit group ID}*** pull-down list.
  - u For extensions associated with a telephone (private or public),
    - Use radio buttons to define whether the extension is professional (mixed, push or pool) or personal.

- If the defined extension is the main extension, select the main checkbox (only one extension per telephone must be defined as main extension).

- Click ***[Validate]***.

2 To remove an extension from a phone

Note: *The previous operations are only available when no user is connected on this phone.*

- From the M5000 CC Administrator application's **[View]** menu, select the **[Extensions]** command. The **"Extensions"** window opens (see Figure 10.25).
- In the **Extensions** window, select a phone.
- There are two ways to display the extensions for this phone:
  - u In the toolbar in the **Extensions** window, click on the **Phone extension**  button, or
  - u Right click on the phone then select **[Extensions]** from the pop-up menu.
- There are two ways to delete an extension:
  - u Click on the **Remove extension**  button, or
  - u Right-click the extension then select **[Delete]** from the pop-up menu.
- Click on ***[OK]*** in the confirmation dialog box.

3 Assigning an extension to a message call pit group in MDI display mode:

Note: *After a call pit group is created (see Sheet U-326), you may assign an extension to this group. In MDI display mode, refer to Sheet U-324 (see MDI/SDI display mode in sheet U-345).*

- In **MDI** display mode, select the **[Extensions]** command from the M5000 CC Administrator application's **[View]** menu. The **"Extensions"** window opens (see Figure 10.25).
  - u In the toolbar in the **"Extensions"** window, click on the extension properties button  .
  - u Select the message call pit group ID you want and confirm.

U-326 : DISPLAY MENU: MESSAGE CALL PIT GROUPS

OBJECTIVE

- To manage the "Extensions" needed to define physical and human resources (in a solution without IVR only):
  - Adding a message call pit group (see step **1** in this sheet),
  - Deleting a message call pit group (see step **2** in this sheet),
  - Allocating an extension to a message call pit group (see step **3** in this sheet),

  Note: *For performance reasons, it may be useful to add several extensions playing back the same message to the same group. Calls will then be distributed cyclically to the different extensions in the group.*

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

1 Adding a message call pit group:

- Select the **[Message call pit group]** command in the M5000 CC Administrator application's **[View]** menu: the **"Message call pit group"** window opens:

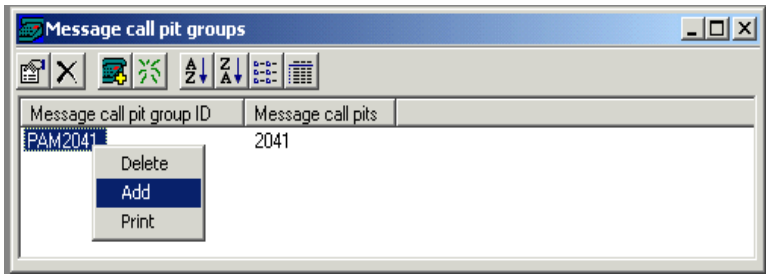


Figure 10.26 APPLICATION "MESSAGE CALL PIT GROUP" WINDOW M5000 CC ADMINISTRATOR

- Click on the  button in the toolbar.
- In the **"Message call pit group properties"** window, enter the identifier in the ***{Message call pit group Id}*** window.
- Click ***[Validate]***.

2 To delete a message call pit:

- Select the **[Message call pit group]** command in the M5000 CC Administrator application's **[View]** menu: the **"Message call pit group"** window opens (see Figure 10.26).
- Select the group to be deleted then click on the  button.
- A warning message stating **"You are going to delete a message call pits group. If this group is used in scripts, it could lead to errors. Do you want to continue?"** is displayed:
  - u if the group is used in a script that is currently in "Production", it is best if you do not delete it: click on ***[No]***,
  - u if the group is not being used in this kind of script, confirm by clicking on ***[Yes]***.

3 To allocate an extension to a message call pit group:

- An extension is not allocated to a message call pit group using the **[View > Message call pits groups]**

but by using the following menus, depending on the display mode that is used (see MDI/SDI display mode in Sheet U-345):

- In display mode, using the menu **[View > Phones]** (see Sheet U-324),
- In **MDI** display mode, using the **[View > Extensions]** menu (see Sheet U-325)

4 Message call pit group "ConfNoIVRStartTree":

- This message call pit group is used by Conference service is the strapping function is activated (u-321 - Use strapping for conference)

U-327 : DISPLAY MENU: USER GROUPS

OBJECTIVE

- Managing user groups:
  - Add a user group (see step **1** in this sheet).
  - Delete a user group (see step **2** in this sheet).
  - Assign a member to a user group (see step **3** in this sheet).
  - Remove a member from a user group (see step **4** in this sheet).
  - Assign a virtual terminal range to a user group (see step **5** in this sheet).
  - Define a user group's directory access rights (see step **6** in this sheet).
  - Define a user group's calendar server access rights (see step **7** in this sheet).
  - Defining the Send EMail access rights for a user group (see step **8** in this sheet).
  - Defining the Send SMS access rights for a user group (see step **9** in this sheet).
  - Define the supervision access right for a user group (see step **10** in this sheet)
  - Define the forward modification access right for a user group (see step **11** in this sheet)
  - Activating the calls & e-mails section display in portal (see step **12** in this sheet)
  - Giving right to an agent to select its user profiles (see step **13** in this sheet)
  - Assign one or more sections 'calls and e-mails' to a user group (see step **14** of this sheet)

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

1 Adding a user group:

- Select the **[User group]** command in the M5000 CC Administrator application's **[View]** menu: the **"User group"** window opens:

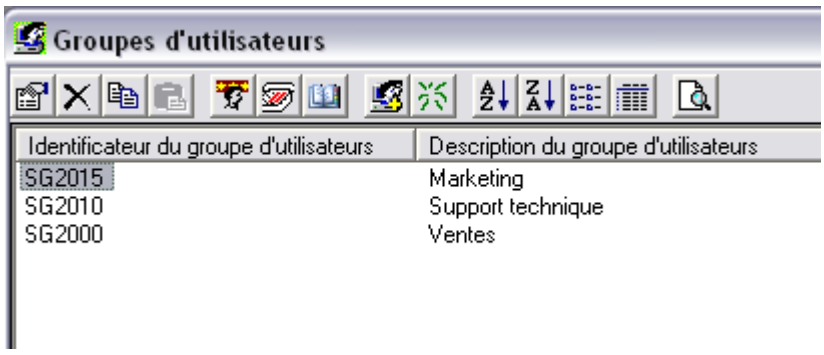


Figure 10.27 THE APPLICATION'S "USER GROUP" WINDOW M5000 CC ADMINISTRATOR

- Click on the  button in the toolbar.
- In the **"User group properties"** window, enter its ID in the ***{User group ID}*** field.
- Enter its description in the ***{User group description}*** field.
- Check ***{Send Email}*** in order to allow members of the group have the right to send EMail
- Check ***{Send SMS}*** in order to allow members of the group have the right to send SMS

- Check ***{Allow supervision}*** in order to allow the group member to have the right to make supervision. (see step **10** in this sheet)
- Check ***{Allow forward modification}*** in order to allow group member to have the right to modify the subscriber forward settings. (see step **11** in this sheet)
- Click ***[Validate]***.

2 Deleting a user group:

- Select the **[User group]** command in the M5000 CC Administrator application's **[View]** menu: the **"User group"** window opens: Figure 10.27
- Select the group to be deleted then click on the  button.
- A warning message **"Do you really want to delete the user group?"** appears:
  - Click ***[Yes]*** to confirm.

3 Adding a member to a user group:

- The member that can be added to the user group may be:
  - A user
  - A service
  - A service team
  - A Windows group.
- In the **"User group"** window, select the group to which you wish to add a member.
- In the toolbar of the **"User groups"** window, click the **User group members**  button:
- In the toolbar of the **"User group members"** window, click the **Add member**  **button:**
- Double-click the member you wish to change to “user group member”.

4 Deleting a member from a user group:

- Select a user group from the **User groups** window.
- Display the list of members in this group:
  - By clicking the **User group members**  button
  - Or by right-clicking the group then selecting **[Members]** from the pop-up menu.
- In the **"User group members"** window, select a member.
- There are two ways to delete this member:
  - Click the **Delete member**  button, or
  - Right-click the member then select **[Delete]** from the pop-up menu.
- Click on ***[OK]*** in the confirmation dialog box.

5 Assigning a virtual set range to a user group:

A virtual set is a set strictly restricted to supervising a group of extensions. To display the virtual set range window:

- In **SDI** display mode: The user groups management window appears with all the windows that are connected to it (including the virtual set range window).

  Note: *In SDI display mode, as soon as another user group is selected, the virtual set range window is updated. A single window is used to display information about all the user groups.*

- In **MDI** display mode: The user group management window opens. To display the virtual set range window in the user group management window:
  - Select the group you want, click the **virtual set range** button  for the group, or

- Right-click to display the pop-up menu and select **[Virtual set ranges]**.

Note: *In MDI display mode, there is one virtual set range window per user group. If you want to display information about another user group, you must select this group and repeat the operation described above.*

There are two ways to add and edit a virtual set range:

- Click the **Add virtual set range**  button in the toolbar, or
- Right click to display the pop-up menu and select **[Add]**.

There are four ways to edit an existing virtual set range. First of all, select the virtual set range to be edited:

- Click on the  button in the toolbar.
- Right click to display the pop-up menu and select **[Properties]**.
- Press the **<Enter>** key on the keyboard.
- Double click the relevant virtual set range name.

When a new range is added or an existing range is edited, the same window opens and the different fields to be completed are the following:

- ***{From}***: Lower virtual set range limit
- ***{to}***: Upper virtual set range limit
- ***{Alias}***: alias associated with the virtual set range (15 characters maximum).

6 Defining a user group's directory access rights :

- In the **"User groups"** window, select the group for which you wish to define directory access rights.
- In the toolbar of the **"User groups"** window, click the **Directories associated with this user group**  button:
  - In the **User group directories** window, you will find a list of all the defined directories as well as their access rights for the selected user group.
- In the **"User group directories"** window, select the directory for which you wish to modify the access rights in the selected user group.
- For the selected directory, it is possible to modify its access rights with three buttons:
  - **« Unassigning the user group directory »**  **:** deletes all the access rights of the user group selected for this directory.
  - **« Assigning the user group directory »**  **:** gives the selected user group simple access (no red list access) to the directory.
  - **« Assigning the directory red list »**  **:** gives the selected user group full access (also red list access) to the directory.
- It is also possible to define the access rights for a given directory, by right-clicking it and finding in it the afore-mentioned three options.

7 Defining the calendar server access rights for a user group

- In the toolbar in the **"User group"** window, click the **[Calendar server]**  button:
  The "**User group calendar servers**" window contains a list of all the calendar servers defined in the system, as well as their access rights for the selected user group.
- In the "**User group calendar servers**" window select the calendar server for which access rights must be modified for the selected user group.
- For the selected calendar server, access rights are assigned using the left button on the toolbar.

- **Authorise access**  : members of the group have access to the data provided by the selected calendar server.

- **Prohibit access**  : members of the group do not have access to the selected calendar server.

- It is also possible to define access rights for a particular calendar server by right-clicking the server and using the displayed pop-up menu.

8 Defining the Send EMail access rights for a user group

- In the toolbar in the **"User group"** window, click the **[Properties]**  button:

  - In the "**User group properties**" window check Send EMail in order to allow members of the group have the right to send EMail.

9 Defining the Send SMS access rights for a user group

- In the toolbar in the **"User group"** window, click the **[Properties]**  button:

  - In the "**User group properties**" window check Send SMS in order to allow members of the group have the right to send SMS.

10 Defining the Supervision access rights for a user group

- In the toolbar in the **"User group"** window, click the **[Properties]**  button:

  - In the "**User group properties**" window check ***{Allow supervision}*** in order to allow members of the group have the right to supervise contact.

Note: *This right apply only when CSTA Supervision is used (requires the definition of a Supervision CSTA telephony link; can be used from R6.1 PBX release).*

Note: *When this option is checked, the user can supervise every set contained in directories he can access, event if the directory access rgight is given through another user group.*

11 Defining the forward modification access rights for a user group

- In the toolbar in the **"User group"** window, click the **[Properties]**  button:

  - In the "**User group properties**" window check ***{Allow forward modification}*** in order to allow members of the group have the right to modify forward.

Note: *Forward can only be modified when CSTA supervision is used.*

Note: *In order to be allowed to modify a forward, the user must have the right to make supervision* (see step **10** in this sheet) *in addition to the right to perform forward modification.*

12 Activating the calls & e-mails section display in portal

- In the toolbar in the **"User group"** window, click the **[Properties]**  button:

  - In the "**User group properties**" window check ***{view calls & e-mails sections}*** in order to display calls & e-mails section in M5000 CC Portal.

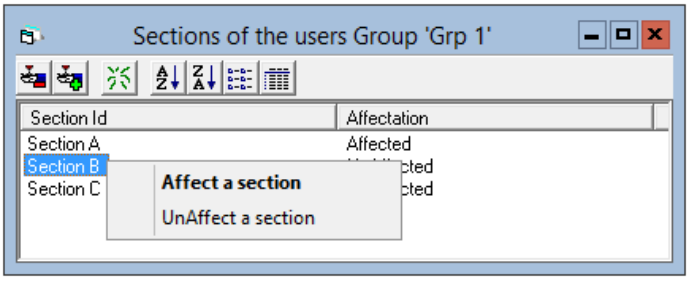
13 Giving right to an agent to select its user profiles

- In the toolbar in the **"User group"** window, click the **[Properties]**  button:

  - In the "**User group properties**" window check ***{change user profile}*** in order to allow agent to select their user profiles. Agent having this check box validated have the right tu use the user profiles application in M5000 CC Portal and can choose their profile for every service.

14 Assign one or more sections 'calls and e-mails' to a user group

- In the ’**Administrator**’ application, select the display mode '**SDI**' by clicking the menu ’**View / Options / SDI**'
- Select the menu '**View / User Groups**': Several windows on the management of user groups appear
- Select the group concerned in the '**User Groups**' window
- In the window '**Sections of the User Group**' set the desired assignments by using the buttons  in the toolbar or by using the context menu:



U-328: DISPLAY MENU: DIRECTORIES

OBJECTIVE

Managing directories:

- Add a directory (see step **1** in this sheet).
- Edit a directory (see step **2** in this sheet).
- Delete a directory (see step **3** in this sheet).
- Insert a directory (see step **4** in this sheet).
- Move a directory (see step **5** in this sheet).
- Synchronise a directory (see step **6** in this sheet).
- Test the validity of a directory (see step **7** in this sheet).

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

1 Adding a directory:

- Select the **[Directories]** command in the **[View]** menu of the M5000 CC Administrator application: the **"Directories"** window opens.
- Click the **Add directory**button  .
- Select the **[General]** tab.
- Enter an identifier for the directory in the ***{Identifier}*** input field.
- Select the type of directory that will be added in the ***{Type}*** drop-down list.
- Enter the right connection parameters in the ***{Connector}*** input field for the chosen directory.

  Note: *There is a wizard button on the right hand side of the connector input field used to generate information for the connector. Since the connection type is specific to each directory type, the wizard will be adapted to this latter and will facilitate the creation of connection parameters.*

  Note: *The settings for each connector depend on the specific configuration of the target directory (location on the network, internal structure, access rights, etc.). To define a particular connector (MiVoice 5000 for example), use the pop-ups available in the wizard and refer to the target directory server documentation for the values of the different parameters.*

  Note: *To be able to use Exchange 5.5 (Exchange 2007) connector, first run Setup on the Exchange 5.5 (Exchange 2007) server and tick the Install Exchange 5.5 (Exchange 2007) connector option.*

- Select the **[Generic fields]** tab and enter the names of the directory fields containing the required information (Surname, first name, company, telephone, e-mail, etc.). Nevertheless, if no field corresponds to any of these pieces of information, the input field may be left empty.

  u If you want to retrieve pictures associated to contacts, you have to set the picture field to a correct value. For some directories, this value is fixed and for other the value must correspond to an existing field

DIRECTORY TYPE	PICTURE FIELD VALUE
LDAP	thumbnailPhoto
Microsoft Exchange (2000/2003/2007 with SP)	ContactPicture

DIRECTORY TYPE	PICTURE FIELD VALUE
Microsoft Exchange 2010	ContactPicture
SQL (OLE DB)	The name of an existing field containing picture binary data or an accessible URL to the picture.
SQL (ODBC)	
XML	
MiVoice 5000 (internal/external)	thumbnailPhoto

u If you do not want to retrieve pictures associated to contacts, you have to leave the picture field empty

*Note: In order to display pictures in the Portal, you have to set in addition with the picture field of supported directories, the Network and Virtual Path (***Chapitre 10 : {Published folder} tab:***).*

- Select the **[Private fields]** tab. In this tab it is possible to add some references to information other than in the generic fields. Using the  button you can add a private field for which both pieces of information are specified:
  - u ***{External name}***: the header with which the information will be displayed in the agents' portal application.
  - u ***{Connector field}***: field name used to store the information in the directory.
- It is also possible to edit the private fields added using the  button, to delete them with the  button or to define their order of display in the agents' application using the  and  buttons.

Nota :
- *Certain private fields may contain some URLs, network paths or e-mail addresses which will be recognised by the system in the detailed WebUser application directory records in form of clickable links. considering the potential length of this information the links will be displayed to the user in a simplified form, for example:*

  http://www.google.be/ig?hl=fr will become www.google.be

  \\NomHote\AFS\Version10.1\Services\TechnicalSupport\M7480Routing.mdb will become M7480Routing.mdb

  \\NomHote\AFS\Version10.1\Services\TechnicalSupport\ will become Technical Support.

  However, the user will see the complete value of the information in his or her browser status bar.

- Select the **[Options]** tab.
- In the **[Synchronisation]** frame it is possible to define the period for automatic directory synchronisation with the M5000 CC global directory. If, nevertheless, this option is not activated, it is always possible to synchronise the directory manually using the  button in the directories' main window (see step **6**: synchronise a directory).
- In the **[Divers]** frame, it is possible to indicate whether or not the directory is a red list, using the ***{Red list}*** checkbox. If name resolution is activated, no number of the persons contained in this directory will be displayed for agents not authorised to display red lists.
- In the **[Divers]** frame it is possible to indicate whether or not searches for this directory will be conducted in the M5000 CC global directory. If this option is activated, at least one manual synchronisation must be made for the directory to be copied into the M5000 CC global directory.
- In the **[Identification mode]** frame, it is possible to choose either the default identification (using the Windows account with which the administrator is connected) or to specify a user name and password for

connection to this directory.

2 Editing a directory:

- Select the **[Directories]** command in the **[View]** menu of the M5000 CC Administrator application: the **"Directories"** window opens.
- Select the directory to be edited.
- Modify the parameters of the directory being edited (see step **1** for more information about directory parameters).
- Click ***[Validate]*** to confirm.

3 Deleting a directory:

- Select the **[Directories]** command in the **[View]** menu of the M5000 CC Administrator application: the **"Directories"** window opens.
- Select the directory to be deleted then click the  button.
- A warning message **"Do you really want to delete the directory?"** appears:
- Click ***[Yes]*** to confirm.

4 Inserting a directory:

Nota : • *The order of directories has its importance while conducting a search in the global directory. In fact, during name or number resolution, if the search is conducted in the global directory, for this directory (see the "Search in global directory" option in step **1**), the result returned will be the one corresponding to the first directory in which the name or number will be located.*

- Select the **[Directories]** command in the **[View]** menu of the M5000 CC Administrator application: the **"Directories"** window opens.
- Select the directory before which the new one will be inserted and click the  button.
- Enter the parameters of the new directory to be inserted (see step **1** for more information about the add-directory parameters).
- Click ***[Validate]*** to confirm.

5 Moving a directory:

- Select the **[Directories]** command in the **[View]** menu of the M5000 CC Administrator application: the **"Directories"** window opens.
- Select the directory that must be moved from the list of directories.
- Click the  button to move up the directory, or the  button to move down the directory.

6 Synchronising a directory:

Nota : • *Synchronising a directory copies all the data from the selected directory to the global SQL directory of the M5000 CC application. This type of synchronisation is made manually; it is also possible to set automatic configuration of a given directory (see step **1** for more information on automatic synchronisation parameters).*

- Select the **[Directories]** command in the **[View]** menu of the M5000 CC Administrator application: the **"Directories"** window opens.
- Select the directory to be synchronised then click the  button.
- A window opens giving the synchronisation result.

7 Testing the validity of a directory:

Nota : • *The directory validity test is used to know whether the parameters of the connector entered while adding or inserting the connector (see step 1 for more information about connectors) are correct.*

- Select the **[Directories]** command in the **[View]** menu of the M5000 CC Administrator application: the **"Directories"** window opens.

- Select the directory to be tested then click the  button.
- The test result then appears on the screen.
  - If the test is successful, a window opens with the first contact found in the tested directory.
  - If the test fails, an error message with the description of the error is displayed.

SPECIFIC CONFIGURATIONS

1 Domino

- ***{Public}***: select this option to define a connector to a public Domino directory.
- ***{Private}***: select this option to define a connector which will forward the private Notes directory contacts of the M5000 CC user.
  This type of connector requires activating roaming for all the M5000 CC users in the Domino server configuration.
- ***{Require a secure channel (SSL)}***: tick this option to transfer data from / to the Domino server through an encrypted channel.
  This function requires configuring SSL for the DIIOP task on the Domino server.
- ***{Host}***: specify the host name or IP address of the Domino server.
- ***{DIIOP port}***: enter the port number of the DIIOP task on the Domino server (63148 by default).
- ***{Database }***: indicate the location of the Domino directory database file. The path must be related to the data folder in the Domino installation directory.
- ***{User}***, ***{Password }***: specify the Domino user whose identity will be used by M5000 CC to make requests in the directory through this connector.

2 Exchange 2010

- ***{Public}*** : select this option to define a connector to a public directory.
- ***{Private}*** : select this option to define a connector which will forward the private directory contacts of the M5000 CC user.
- ***{Require a secure channel (SSL)}*** : tick this option to transfer data from / to the Exchange server through an encrypted channel.
- ***{Server}*** : enter the network name or IP address of the PC on which the Exchange 2010 server is running.
- ***{Identification}*** :specify identification type used by M5000 CC to make request to this connector.
  - Select NTLM or Negotiate, depending on the level supported by the Windows environment and configure the following two fields:
    - ***{User account}*** : enter the full identification (typically: <domain>\<identifier>) of the user whose identity will be used to make all the requests
    - ***{Password}*** : enter the password of the user whose identity will be used to make all the requests.
- ***{Contacts folder path}*** : If ***{Public}*** is selected, you have to specify the path allowing access to contact's directory.
  - If the path is directly under public folder, the name of the folder is sufficient.

    For example : <Public Contacts>.
  - If the path is not directly under public folder, you have to use separator character <\ >to build the path.

    For example : <Public Contacts\Support Contacts>.

Nota : *•For the definition of generic and /or private fields, the field name used to store the information in the directory may be a property of the Contact object defined in the web service or an extended MAPI property of Microsoft Exchange 2010. For example,*

- *If you want to display birthday's contact, you have to select <Birthday> as* ***{Connector field}***
- *If you want to use an extended MAPI property, you have to know its name and its identifier. Those information can be found with OutlookSpy. If you have as name <Test Custom Field>*

and as Identifier <00020329-0000-0000-C000-000000000046>, you can select
<http://schemas.micro-soft.com/mapi/string/{00020329-0000-0000-C000-000000000046}/Test Field> Custom
*as **{Connector field}**.*

U-329 : DISPLAY MENU: TELEPHONY LINKS

OBJECTIVE

- Configuring and managing a telephone link:
  - Open the telephony link management window (see step **1** in this sheet).
  - Add a telephony link (see step **2** in this sheet).
  - Check a telephony link connection (see step **3** in this sheet).
  - Edit a telephony link (see step **4** in this sheet).
  - Delete a telephony link (see step **5** in this sheet).
  - Restoring the main telephony link (see step **6** in this sheet)

Note: For M5000 CC, a CSTA link is a TCP connection that will be set up with a PBX CSTA server to monitor some extensions. A CSTA link is characterized therefore by the IP address and the IP port of a CSTA server and the extensions that are allocated to it.

Note: A VTI/XML link is a connection that will be set up with a PBX server to implement IVR resources in voice over IP mode. This link is characterised by an IP address and IP port. By default, the IP address is the IP address of the first available card (see details below). Port 3199 is the port generally used for the VTI/XML protocol.

Note: A SIP link is a connection that will be set up with a PBX server to implement IVR resources in SIP mode. This link is characterised by an IP address and IP port. Port 5060 is the port generally used for the SIP protocol.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

1 Open the telephony link management window:

- Select the **[Telephony links]** command in the M5000 CC Administrator application's **[View]** menu: the **"Telephony links"** window opens:

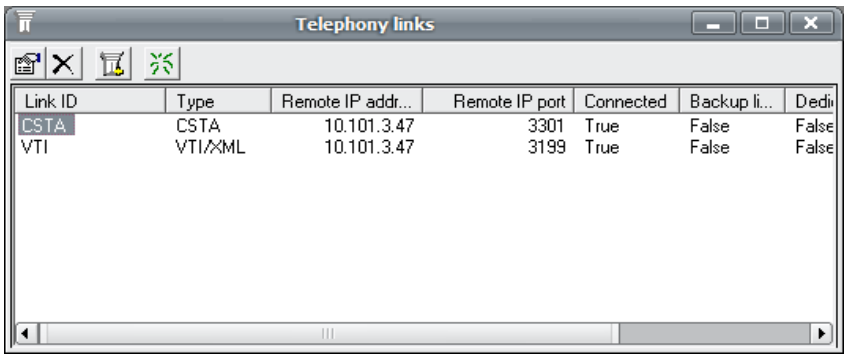


Figure 10.28 TELEPHONY LINKS WINDOW

The link configuration window lets you add, delete or modify the CSTA links and VTI/XML links. When a new M5000 CC file structure is created (installation program, see Section 9.2), the "DefaultLink" link is defined by default. If the M5000 CC file structure results from an updated version V4, this link is also defined and all the existing extensions are assigned to it. The remote IP address and IP port must be configured to correspond to the parameters of a PBX CSTA server. Several CSTA links may be defined to connect to several PBX CSTA servers. No redundancy is supported between the CSTA links. Defining several links makes it possible to supervise over 2000 extensions.

3 CSTA link type can be defined:

- A Standard link: this link can be used with any supported PBX version. A CSTA license is consumed at PBX level for every subscriber monitored on the link. It is recommended to not use any more this link type from R6.1 PBX release
- An M5000 CC link: this link can be used only from R6.1 PBX release. No CSTA PBX license is consumed. This link type is used to control M5000 CC resource: user phone, IVR resources, call pits. It is functionally equivalent to the Standard link.
- A Supervision link: this link can be used only from R6.1 PBX release. No CSTA PBX license is consumed but the subscriber monitoring is passive (no action can be performed): this link type is used only for monitoring the subscriber displayed in the portal directory application. The CSTA supervision replaces the Intercom supervision. It is recommended to not use anymore the intercom supervision from R6.1 PBX release.

It is possible to secure CSTA telephony link by defining backup link. These backup links can eventually be associated to a main CSTA link. When associated to a main link, the backup link will only be use when the associated main link is break down. Otherwise, the backup link can be used to secure several main links. However, the following constraints apply:

- A Supervision CSTA link can only be secured by a Supervision CSTA link
- A Standard or an M5000 CC CSTA link can be secured by a Standard or an M5000 CC CSTA link.

The following rules apply to select the backup link used when the main link can not be used anymore.

- For a Supervision link, the dedicated Supervision backup links are tried first, then the undedicated Supervision backup links
- For a Standard or M5000 CC link, the following order is followed:
  - The M5000 CC dedicated backup links
  - The Standard dedicated backup links
  - The M5000 CC undedicated backup links
  - The Standard undedicated backup links

To implement the IVR resources in voice over IP mode, you have to define at least one VTI/XML link, in addition to a CSTA link. This link is used to transmit VTI/XML telephony signals between M5000 CC and the PBX. Several VTI/XML links can be defined. Only one link is actually set up to the PBX. The other links are only activated in case of problem (network or IP card failure on the PBX). If the system is unable to set up a link, it tries to set up another one using the round-robin algorithm. Generally, Port 3199 is used for the VTI/XML protocol.

To implement the IVR resources in SIP mode, you have to define at least one SIP link, in addition to a CSTA link. This link is used to transmit SIP telephony signals between M5000 CC and the PBX. The remote IP address and IP port must be configured to correspond to the parameters of a PBX SIP server. Several SIP links may be defined to connect to several PBX SIP servers. No redundancy is supported between the SIP links.

SIP link supports different protocols UDP, TCP and TLS. Generally, Port 5060 is used with UDP and TCP and Port 5061 is used with TLS. You have also to define the local port used to communicate with the PBX.

In TLS mode, you have to defined:

- SRTP mode:
  - SRTP preferred: SRTP will be used if available (still accept RTP call)
  - SRTP only: SRTP will be used (don’t accept RTP call)
  - RTP only: RTP will be used (don’t accept SRTP call)
- Certificate CA: filename for trusted certificate. Files must be PEM (base64 encoded) X509 format, in plain text
- Certificate RSA: file containing TLS RSA certificate representing local identity. File must be PEM (base64 encoded) X509 format, in plain text
- Private Key RSA: file containing TLS RSA private key of local certificate. File must be PEM (base64 encoded) X509 format, in plain text or encrypted
- Private Password Key RSA: password used to read TLS RSA private key of local certificate if it is encrypted.

For more details please refer to call encryption in M5000 CC (6.6)

Note: *The local IP address to be used to set up SIP links is the one used by Dialogic HMP.*

The link configuration window is also used to modify a property that is common to all the links: the local IP address to be used to set up links. By default, if several network cards are available, M5000 CC uses the IP address of the first available network. However, you can choose another one, by specifying the IP address (and thus the card) to be used (see Sheet U-312). Moreover, the order of the cards may be modified, in the Windows advanced properties tab, to choose the one to be used by M5000 CC.

Caution: *In a multisite configuration, if two servers are each working on a CSTA server, the last two digits of these CSTA servers' X25 address cannot be the same (PBX configuration), otherwise there will be CSTA link disconnection problems.*

2 Adding a telephony link

- Click the  icon: the **"Telephony link properties"** window opens:
- Enter:
  - u link ID,
  - u the remote IP address of the PBX telephony server
  - u the remote IP port of the PBX telephony server
  - u the link type: CSTA, VTI/XML or SIP
  - u If telephony link type is CSTA, define the sub-type: Standard, M5000 CC or Supervision.
  - u Backup link or not
  - u For a dedicated or non-dedicated backup link: if it is dedicated, choose the mail link to which it is dedicated.

  Note: *For more information about backup links, see "4.12.2".*
- Once you have defined the link, associate it with an extension (see Sheet U-325) and an extension of the M5000 CC Media Server (see Section U-341).

3 Checking a telephony link connection:

- Telephone monitoring starts when the first M5000 CC Media Server or first agent connects to the M5000 CC Server. At this moment M5000 CC connects the links to the PBX. For each connected link, a message is displayed in the "Server connection messages" window (see U-0). The ***{Connected}*** column in the **"Telephony links"** window (see Figure 10.28) also lets you check whether a link is connected (not relevant with SIP link).

4 Editing a telephony link:

Note: *You cannot modify a link's parameters if it is connected.*

- To edit a link, click the  icon and the **"Telephony link properties"** window will appear:

5 Deleting a telephony link:

Note: *You cannot delete a link with which extensions are associated.*

- To delete a link, click the  icon.

6 Restoring the main link

- When a backup CSTA telephony link is connected, select this link and right click to display a menu. In this menu, select the "Restore main link command". Confirm then the command. Warning, the call in progress are lost as we will lost the supervision of all device monitored by this backup link.

U-330 : DISPLAY MENU: DONGLE

OBJECTIVE

- Accessing the **"Key code"** window lets you view and activate the key code and the characteristics of the functions installed in Mitel 5000 Contact Center.

  Note: *You can also access this window to view the key code via the M5000 CC Server application (see Sheet U-22).*

  Administrators can use their own applications to display all the information available in the M5000 CC Server and M5000 CC Media Server. This way, they have an instant overview of important information available in these applications.

  They may also activate the tracking tool and define the activation keys from this application. This is very useful when the **automatic start-up** solution is used because the M5000 CC Server and M5000 CC Media Server applications do not have a graphical interface.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

- Select the **[Key code]** command in the M5000 CC Administrator application's **[View]** menu: the **"Key code"** window opens.

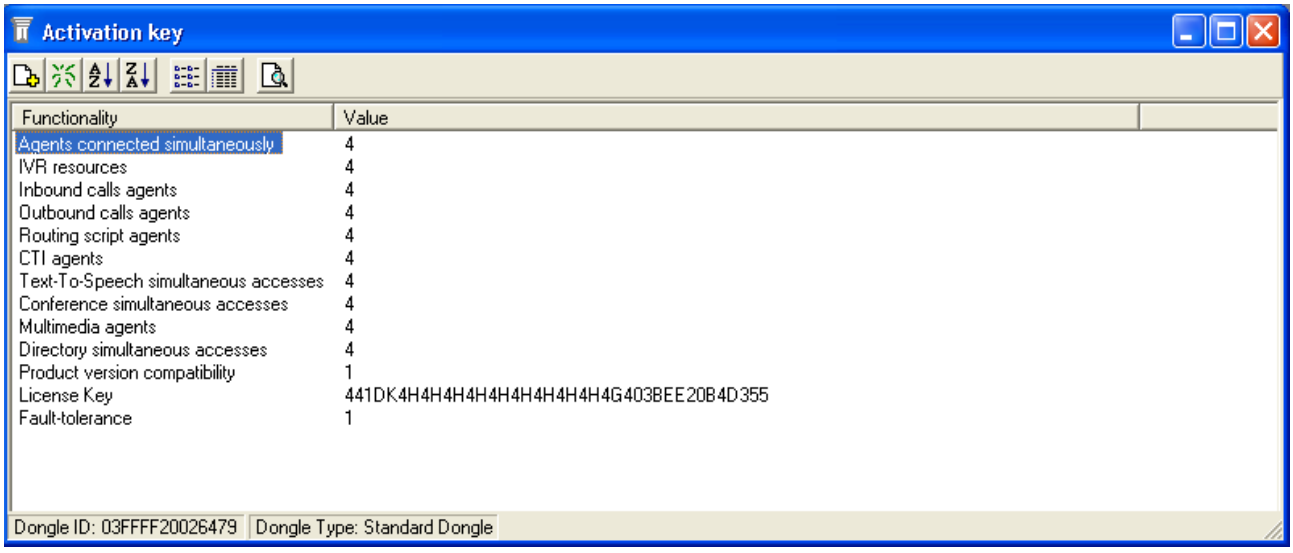


Figure 10.29 THE APPLICATION'S "KEY CODE" WINDOW M5000 CC ADMINISTRATOR

- **To activate all the functions, click Add a new key code**  **in the tool bar, or double-click a line on the {Feature} column: the key code input dialogue box opens:**
  - Enter the key in the ***{Enter new activation key:} field***.
  - Click ***[Validate]***.

Note: The window is exactly the same as the one for the M5000 CC Server application (see Sheet U-22) except that it enables the administrator to check or modify the key code used.

Note: Refer to the general information about the "Dongle" and "key codes" in Section 8.3.8.1.

U-331 : DISPLAY MENU: E-MAIL PROFILES

OBJECTIVE

- Managing the profiles used by M5000 CC.

  In M5000 CC, a profile lets you connect to a message server using the ID (account) of a particular user. This allows the processing of e-mails arriving in one or more inboxes accessible to this user.

  - Standard profile

    A standard profile enables the M5000 CC Server to set up a direct connection to a message server. E-mails are then received, processed and sent using standard protocols: IMAP (Internet Message Access Protocol) and SMTP (Simple Mail Transfer Protocol).

    A standard profile is also used by M5000 CC to connect to a mail server that is used for incoming SMS treatment after these SMS are transformed into E-mail

    A profile can be used either for processing E mail and Fax or for processing incoming SMS. We can not use the same profile to process both mail and SMS.

  - Exchange type profile

    Each Exchange profile corresponds to a Run (process) of the e-mail manager component. When the administrator adds a new profile, a new E-mail Manager component is automatically started. Profiles first have to be defined via the Mail application of the Windows Control Panel on the computer on which the M5000 CC Server application is running.

    When a profile is deleted, the E-mail Manager linked to it is stopped and all links between this profile and Services are removed. At the same time, all inbound mailboxes associated to this profile are removed. To delete a profile, all Services should not be used by any other application than the M5000 CC Service Manager.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

1 Define a profile:

- Select the **[Profiles]** command in the application's M5000 CC Administrator **[View]** menu: the **"Profiles"** window opens.

- In order to add a profile into the system, click the **Add**  **button** . The following **Profiles properties** window appears:

  - Select a profile type: Standard or Exchange.

  Standard profile

  - Enter a unique ***name*** for the profile.
  - Enter the ***{user name}*** and associated ***{password}*** known to the message server. Confirm the ***{password}*** in the ***{confirm}*** area.
  - In the ***{Sender address}*** text box, enter a valid e-mail address for the previously specified user. This address will be used as sender for all operations that require sending an e-mail via this profile (reply, reply all, forward, etc.).
  - Enter the domain name or IP address of the message server in the ***{Server name}*** text box.
  - Click Validate. The Profile folders window appears.
  - Choose a ***{Deleted items}*** folder from the proposed list, or enter a new folder name which will be created for this.
  - Choose a ***{Sent items}*** folder from the proposed list, or enter a new folder name which will be created for this.

Exchange profile

- Enter the ***{name}***name of the profile which has to match the name of the profile previously defined on the mail client PC.
- Enter the **{password}** (optional) which must correspond to the one defined in the profile. If it changes during the life of the E-mail Manager, the connection to MS Exchange Server is updated with the new password.

2 Assign a profile to the Service

- To assign a profile to the Service, edit the properties of the Service by clicking the **Properties**  icon in the Services window. The **Service properties** window opens:
- If necessary, select the profile from the drop-down list (this action can already be performed when creating the Service).
- If necessary, select the profile from the drop-down list (this action can already be performed when creating the Service).
- Depending on the profile is used for processing incoming E-mail (Fax) or SMS, select the profil in the service e-mail profile drop down list or in the SMS inbound profile drop down list.
- Click ***[Validate]***.

U-332DISPLAY MENU: SMS PROFILES

OBJECTIVE

- Managing the SMS profiles used by M5000 CC.

  In M5000 CC, a SMS profile lets you connect to a SMPP server using the ID (account) of a particular user. This allows the processing of SMS accessible to this user.

  - SMS profile

    A SMS profile enables the M5000 CC Server to set up a direct connection to a SMPP server. SMS are then received, processed and sent using standard protocols: SMPP (Short Message Peer to Peer).

    When a SMS profile is deleted, the SMS operations linked to it is stopped and all links between this profile and Services are removed.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

1 **Define a profile:**

- Select the **[Profiles]** command in the application's M5000 CC Administrator **[View]** menu: the **"Profiles"** window opens.

- In order to add a profile into the system, click the **Add**  **button** . The following **Profiles properties** window appears:

  - Enter a unique **Name** for the profile.
  - Enter the **version** of the SMPP protocol to use. The Server supports "v3.3" and "v3.4"
  - Enter the **connection mode** to use. if you wish to receive messages from the SMPP server, you have to choose Receiver or Transceiver.
  - Enter the host name or IP address of the message server in the **{Host name}** text box.
  - Enter the **{user name}** and associated **{password}** known to the message server.
  - Enter the **TCP/IP port** on the SMPP server to which the gateway should connect.
  - Enter the **system type**. This is an optional login parameter that should be set only if required by the SMPP server. The SMPP system administrator will provide this value, which when required, is usually a short text string.
  - Enter the **address TON** (Type Of Number). Set to 1 for international format
  - Enter the **address NPI** (Numbering Plan Indicator). Set to 1 for international format.
  - Enter the **address range**. This is a parameter used primarily when receiving messages. Set this field only if instructed to do so by your SMPP service provider.
  - Check '**Allow multiple SMS** per message in order to send long SMS'
  - Check '**System** to define this SMS profile as the system SMS profile'
  -
  - "Click ***[Validate]***.

2 **Assign a profile to the Service**

- To assign a SMS profile to the Service, edit the properties of the Service by clicking the **Properties**  icon in the Services window. The **Service properties** window opens:

- If necessary, select the profile from the drop-down list (this action can already be performed when creating the Service).
- Click ***[Validate]***.

U-333 : DISPLAY MENU: DIALLING RULES:

OBJECTIVE

- Add, move or delete a dialling rule.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

1 Adding a new numbering rule

- From the M5000 CC Administrator application's **[View]** menu, select the **[Numbering rules]** command: the **"Numbering rules"** window opens.
- If the numbering rule list is empty, click the **Add numbering rule**  button, or select the rule before or after which a new rule has to be inserted using the  or  button.
- Define the parameters of the new rule in the **"Numbering rule property"** window as indicated below:
  - u The basic phone number is the number to which the number to be dialled is compared.
  - u The translated phone number is the number actually dialled.

  The basic phone number may be defined using the joker characters "?" and " * ". The character ? refers to one and only one character. For example in the number "1 ???", all four-character numbers starting with 1 respect the the basic rule. The character ? may be used anywhere in the basic number.

  The character * cannot be used as last character and refers to a variable number of characters (possibly none). For example the number "2* " refers to all phone numbers starting with 2.

  To indicate the character * in a phone number (and not the joker character), use " * ".

  The following instructions must be followed while defining a numbering rule:

  - u The basic phone number and translated phone number must contain the same number of joker character " ? ".
  - u When the joker character " * " ends the translated phone number, it must also be used as last character of the basic number.
  - u If the use of numbering rules is activated on the **[Number translation]** box (see step **17** in Sheet U-312), the numbering rules are taken into account in the order of the list. Once the phone number respects a rule, it is translated according to this rule. The other rules are not taken into account. If necessary, see step **2** to move a rule.
  - u If no numbering rule applies, the number is translated based on the general translation rules.

    The table below describes some examples of translation:

BASIC TELEPHONE	TRANSLATED TELEPHONE	NUMBER DIALLED BY THE USER	NUMBER SENT TO THE PBX
2 ???	02 ???	2345	02345
2 ???	02 ?6 ?7 ?	2345	0236475
1*	01*	23456	023456
2*	2	23456	2
1307	01307	1307	01307

- The following rules are useful when a 4 digit numbering plan is used:
  - u When an operator wish to transfer a call to the 4000 internal subscriber voice mail, she must by default compose *544000. In order to allow to the operator to enter *544000 in M5000 CC Portal, it is necessary to define the rule:
    - Base phone number: **
    - Transformed phone number: **
  - u This rules makes every number starting with * sent without transformation to the PBX.
  - u In order to be able to call an external number with 4 digits like the 3699 for the French time answering machine, it is necessary to compose the 03699. In order that M5000 CC transforms automatically the 3699 in 03699, this rule must be added:
    - Base phone number: 3*
    - Transformed phone number: 03*
  - u This rule adds a 0 before any number starting with 3. It rules only when no internal subscriber have a phone number starting with 3.
  - u In some situation (tie line, hostel management), we wish that number starting with 8 are not transformed at all. This rule makes number starting with 8 no transformed by M5000 CC:
    - Base phone number: 8*
    - Transformed phone number: 8*

2 Moving a new numbering rule

Note: *The numbering rules are applied in the order of display on the list in the "Translation rules" window.*

- From the M5000 CC Administrator application's **[View]** menu, select the **[Numbering rules]** command: the **"Numbering rules"** window opens.
- Select the numbering rule to move.
- Click the **Move upwards**  button, or **Move downwards button** 

3 Deleting a numbering rule

- From the M5000 CC Administrator application's **[View]** menu, select the **[Numbering rules]** command: the **"Numbering rules"** window opens.
- Select the numbering rule to be deleted.
- Click **Delete**  .

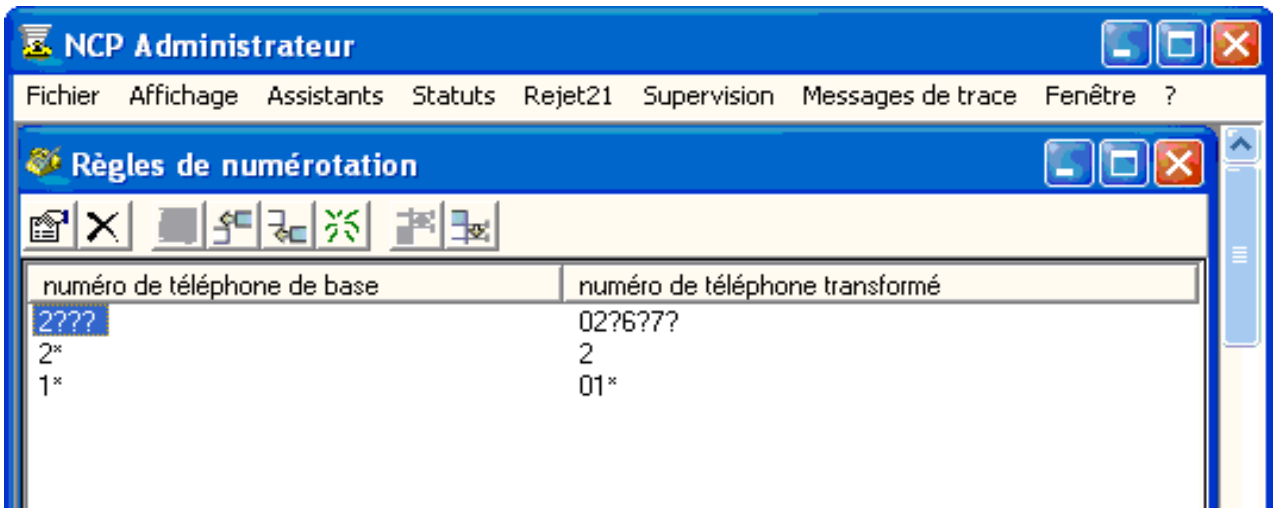


Figure 10.30 M5000 CC ADMINISTRATOR APPLICATION "NUMBERING RULES" WINDOW

Note : *In a PNIA configuration, these translations rules will not be applied to internal numbers. If a number is recognised as an internal PNIA number (its prefix corresponds to one of the 8FSZPQ prefixes listed in the PNIA translation rules (see Sheet U-351)), none of the translation rules defined in this window will be applied.*

U-334 : DISPLAY MENU: URLS DEFINED BY THE USER AND TERMINAL SERVER

OBJECTIVE

- Defining the web pages available from the portal
- Configuring Terminal Server and M5000 CC, to make the M5000 CC Administrator and M5000 CC Service Manager applications accessible via the portal:
  - Define a link to the Terminal Server default page (see step 1).
  - Hide the connection web page provided by Microsoft (see step 2).
  - Enter the connection parameters in advance (see step 3).
  - Limit access to a single application (see step 4).
  - Define the use of these links in M5000 CC (see step 5).

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

User defined URL

- Select the **[User-defined URL]** command from the **[View]** menu of the M5000 CC Administrator application: the **"User-defined URL"** window opens.

- Configuring the new link by defining the following parameters:
  - ***{Identifier}***: this identifier will be displayed on a button in the left frame of the portal. Therefore, a short summary is required here.
  - ***{URL}***: Full absolute address. (example: http://www.mitel.com). M5000 CC does not check the validity of the links and web pages to be opened. So, it is important to check their validity from the portal.
  - ***{Window opening option}*** : This option is used to open a link in a new window, or to include it in a portal frame.
  - ***Privilege***: define the users for whom this link will be available. If the ***[Portal user]*** box is ticked, the URL is available for all the users connected to the portal. Otherwise, it will only be accessible for the selected user type(s).
- Defining the order in which the different URLs will be displayed in the portal for users with access to more than one link.

Note: Modifications to the properties of a link or the order are only taken into account after the portal is restarted.

Configuring Terminal Server and M5000 CC

1 Define a link to the Terminal Server default page.

- Select the **[User-defined URL]** command from the **[View]** menu of the M5000 CC Administrator application.
- Define a URL pointing to **http://WebTS/TS/Default.htm**, as indicated previously.

  Since the size of the Terminal Server window is not controlled in this first case, it is preferable to choose the **Open new window** option.
- To test the link, start the portal and click the new URL button. The Terminal Server default page opens:

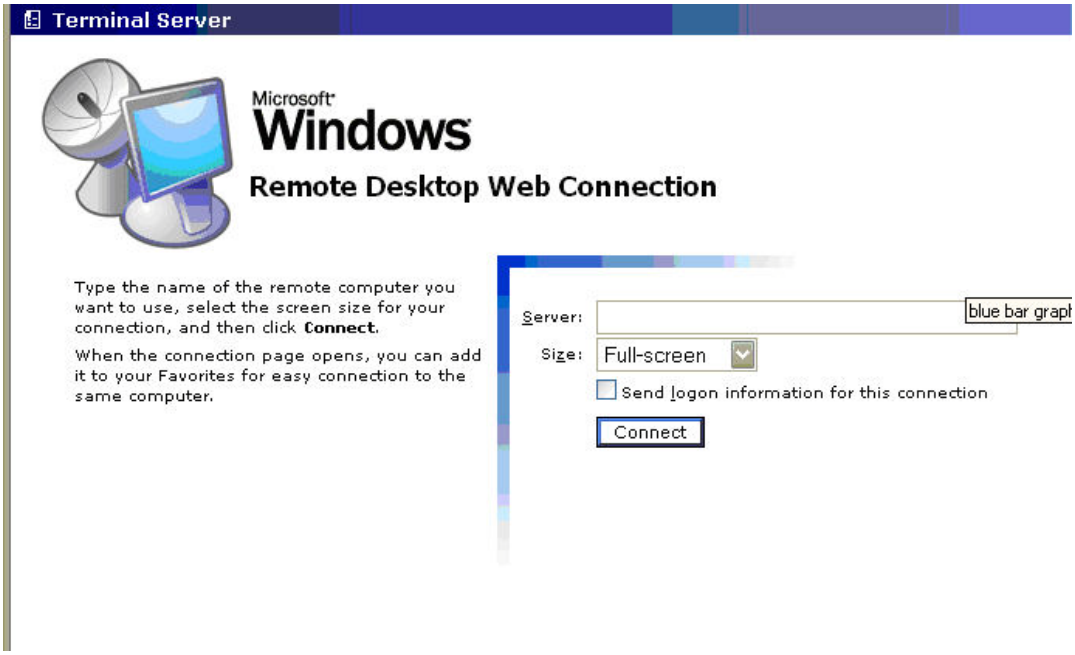


Figure 10.31 TERMINAL SERVER WINDOW

- Enter the name of the server "**TermServ**", then press the ***[Connect]*** button. A second connection window opens, prompting for the account parameters to use to connect to the server:

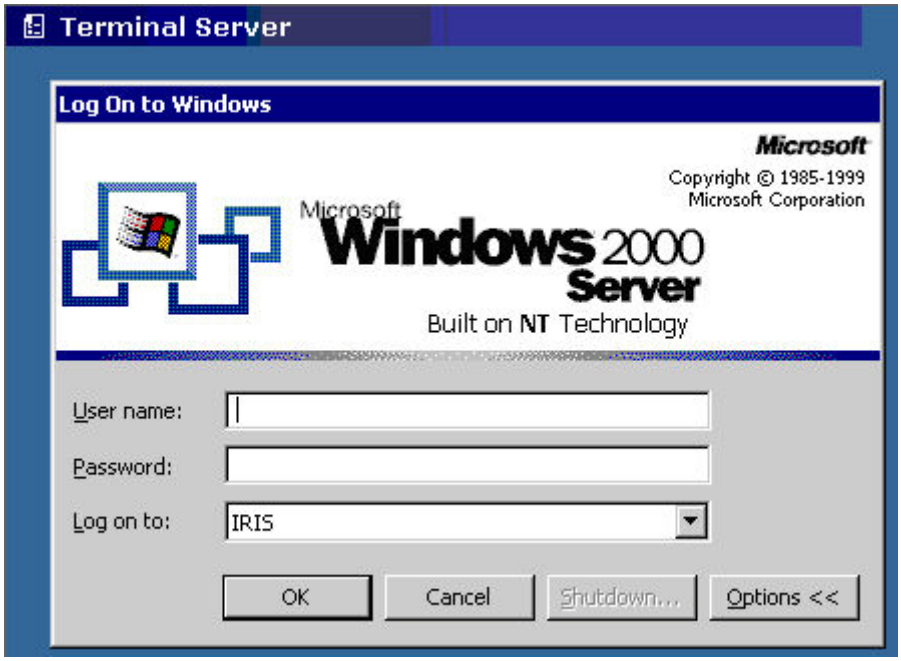


Figure 10.32 TERMINAL SERVER CONNECTION WINDOW

- Enter the required information then press the ***[OK]*** button. A remote session is opened on the server. It allows the applications installed on the server to be started, even if they are not web applications.

1 Hide the connection web page provided by Microsoft.

Without modifying the connection page provided by Microsoft, it is possible to avoid its display and immediately move to the server connection window. For this, fill in the URL with arguments (Query string). The general format for URL arguments is:

http://www.monserveur.fr/index.html?arg1=val1&arg2=val2&arg3=val3...

- Enter the following arguments:

- **AutoConnect**: If the value is 1, the page is not displayed.
- **Server**: Server name
- **FS**: size of the window to be opened. The default size is full screen. The values 1, 2, … are used to display some windows in ascending order.

By defining the link:

http://WebTS/TS/Default.htm?Server=TermServ&AutoConnect=1&FS=1

the corresponding portal button will give access to a server connection window whose size will be reduced. Here the size of the window is controlled and it is possible to open it in one of the portal frames.

1 Predefining the connection parameters

The connection step was previously cancelled, but there is still user authentication to the web server. This cannot be cancelled, but it is possible to make it easier by pre-filling the user name and domain fields. For this, you need to improve the default web page provided with Terminal Server.

To avoid any problem, it is preferable not to modify the original page but to make a copy of it. In the following description, a sub-directory http://WebTS/TS/M5000CC has been created to which all the files in the directory http://WebTS/TS have been copied.

- Using Notepad, open the default.htm page of the new directory and modify the autoConnect function by adding the four lines in bold as indicated below:

```
function autoConnect()
    Dim sServer
    Dim iFS, iAutoConnect

    sServer = getQS ("Server")
    iAutoConnect = getQS ("AutoConnect")
    iFS = getQS ("FS")

    if NOT IsNumeric ( iFS ) then
        iFS = 0
    else
        iFS = CInt ( iFS )
    end if

    if iAutoConnect <> 1 then
        autoConnect = false
        exit function
    else
        if iFS < 0 or iFS >= Document.all.comboResolution.options.length then
            iFS = 0
        end if

        if IsNull ( sServer ) or sServer = "" then
            sServer = window.location.hostname
        end if

        Document.all.comboResolution.selectedIndex = iFS
        Document.all.Server.value = sServer

        Document.all.Check1.Checked = true
        Document.all.editUserName.value = getQS("User")
        Document.all.editDomain.value = getQS("Domain")
        checkClick()

        btnConnect ()
```

```
        autoConnect = true
    end if
end function
```

These new lines use two new arguments to fill in the corresponding fields of the page:

- **User**: name of the user who will connect to the web server
- **Domain**: the user's domain.

The link thus obtained not only prevents the connection web page from being displayed, but also allows you to fill in two of the three connection fields:

```
http://WebTS/TS/M5000CC/Default.htm?Server=TermServ&AutoConnect=1&FS=1
&User=jdupond&Domain=iris
```

1 Limiting access to a single application

For security reasons, it is possible to limit a user's access to a single application installed on Terminal Server. For this, modify this user's (network or local) account parameters:

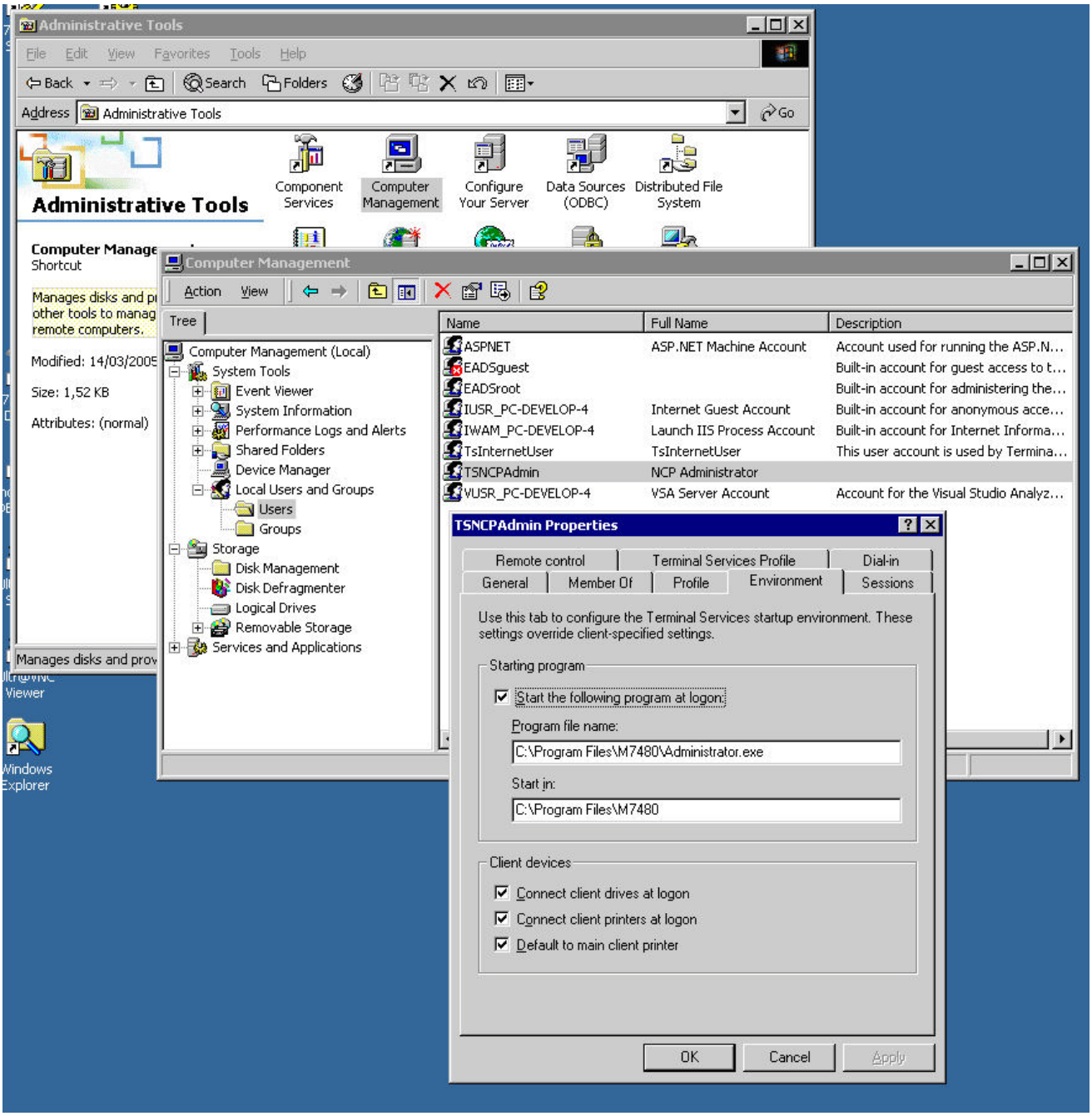


Figure 10.33 "USER PROPERTIES – ENVIRONMENT" WINDOW

- In the **{Environment}** tab, configure an application to be run at start-up by entering its full path and start directory.
- In the **{Sessions}** tab, it is highly advisable to end a session when the maximum duration is reached or when it is lost:

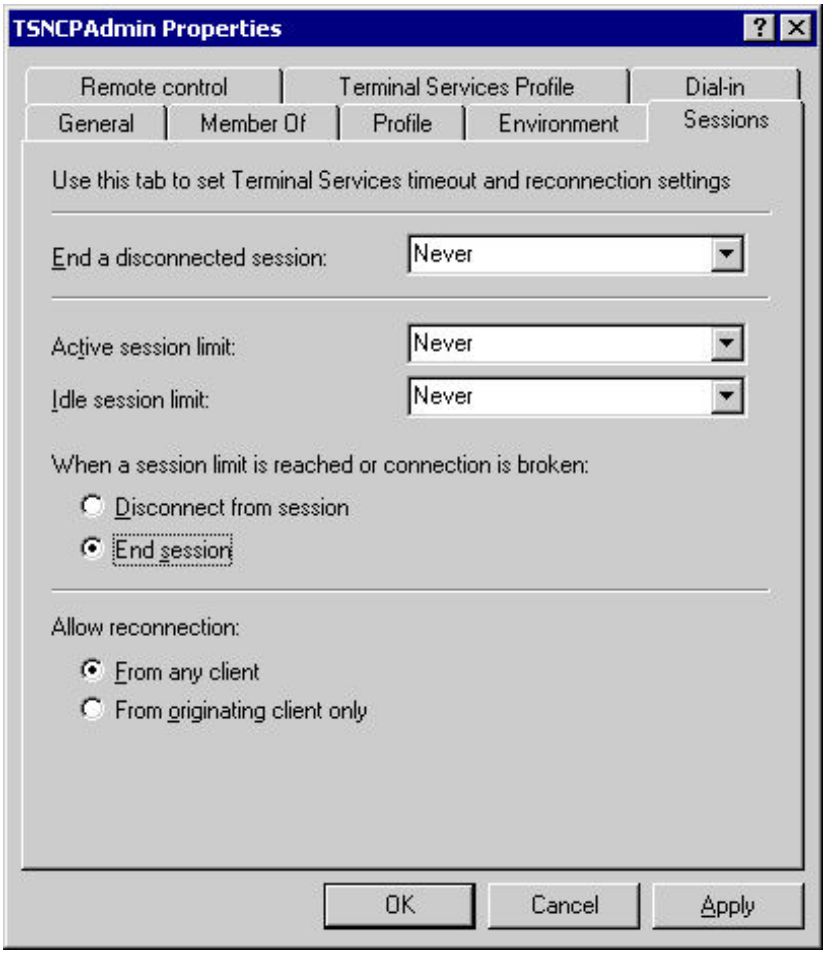


Figure 10.34 "USER PROPERTIES – SESSIONS" WINDOW

After these parameters have been modified, when the user concerned connects, the selected application will automatically be run, and the desktop inaccessible.

1 Defining the use of these links in M5000 CC

The procedures described previously allow the use of Terminal Server in different ways in M5000 CC. Here are two of them:

a) Terminal Server button

- Basic URL: http://WebTS/TS/Default.htm (default web page)
- Arguments: AutoConnect (optional), Server (obligatory for AutoConnect = 1), FS (optional)
- Objective: giving M5000 CC users access to Terminal Server.
- TS configuration: as you wish.
- Each user connects to the server with his or her network account.

b) Manager and Administrator button

- Basic URL: http://WebTS/TS/M5000CC/Default.htm (modified web page)
- Arguments: AutoConnect = 1, Server, FS (optional), Domain, User
  Example (2 links are necessary)
- http://WebTS/TS/M5000CC/Default.htm?Server=TermServ&AutoConnect=1 &User=**TSM5000CCAdmin**&Domain=iris
- http://WebTS/TS/M5000CC/Default.htm?Server=TermServ&AutoConnect=1 &User=**TSM5000CCSrvMgr**&Domain=iris
- Objective: allowing access to service manager and administrator applications and forbidding access to any other application.

Two accounts (network or local) must be defined and configured to automatically run Administrator for the first one and Service Manager for the second one.
In administrator, you then have to define two URLs which only differ in the User argument value. The link to the "Administrator account" may only be offered to M5000 CC Administrators, while the link to the “Service Manager account" should not be offered to service managers, team managers and team supervisors.
In this configuration, all the managers use the same account to connect to Terminal Server. Their personal identification only takes place upon M5000 CC connection.

U-335 : CALLS & E-MAILS SECTION

OBJECTIVE

- Add, edit, move and delete Calls & E-Mails section

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

1 Adding a new section

- From the M5000 CC Administrator application's **[View]** menu, select the **[Calls & E-mails sections]** command: the **"Calls & E-mails sections"** window opens.
- If the list is empty, click the  **Add Calls & E-mails section** button, or select the section before or after which a new section has to be inserted using the  or  button.
- Define the parameters of the new section in the **"Calls & E-mails section"** window as indicated below:
  - Enter the name of the section in the ***{name}*** textbox
  - Select the section type (see 8.3.4 : CALLS & E-MAILS SECTION) used for this section in the ***{type}*** combo box.
  - Enter the sound in the sound
  - Check the ***{use custom color}*** check box and pick up background and foreground color if you want to set specific color for displaying the section in the portal
  - Check the ***{default for push}*** checkbox if the section is the default section
  - Cheek the ***{default for pool}*** checkbox if the section is the default section for pool distribution (calls distributed by pool and mails)

2 Edit section properties.

To modify section properties:

- Select the **[Calls & E-mails section]** command in the M5000 CC Administrator application's **[View]** menu: the **"Calls and E-mails section"** window opens.
- There are three possible ways to edit the properties of a section:
  - Select section by clicking on the corresponding element, then click on the  button or
  - Right-click on selected element and then select **[Properties]** from the pop-up menu or
  - Double-click on a selected item.

- Refer to step 1 in this sheet for the description of the different fields in the **"Calls and E-mails section"** window.
- Click on **[OK]** to confirm the modifications.

3 Delete a section

To remove a section from the system:

- Select the **[Calls & E-mails section]** command in the M5000 CC Administrator application's **[View]** menu: the **"Calls and E-mails section"** window opens.
- Select a section from the list.
- There are two ways to delete a section:

- u Click on the  button, or
- u Right click on the selected section then select **[Delete]** from the pop-up menu.

- Click on **[OK]** in the confirmation dialog box.

4 Moving a section

Note: *The section are displayed in the order defined by the administrator*

Select the **[Calls & E-mails section]** command in the M5000 CC Administrator application's **[View]** menu: the **"Calls and E-mails section"** window opens.

Select the section to move.

- Click the **Move upwards**  button, or **Move downwards button** 

U-336 : DISPLAY MENU: REPORT SERVER

OBJECTIVE

- Configuring the M5000 CC Report Server

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

To configure the M5000 CC Report Server:

- From the M5000 CC Administrator application **[View]** menu, select the **[Report Server]** command: the **"Reporting Server"** window opens.
- Configure the following fields:
  - Data entry field ***{Report Server PC name:}***,
  - Data entry field ***{Report Server communication port with the Web server:}***,
  - ***{E-mail profile used in the Report Server}*** selection field in a scroll down list,
  - Click ***[Validate]***.

Note: *The number of the port entered in this window must be the same as that entered (during installation see § 9.2) in the "HKEY_LOCAL_MACHINE\Software\Dialog Systems\AGORA\General Information\Reporting Server IPPort" register of the web server PC.*

U-337 : DISPLAY MENU: PNIA: CONFIGURING SQL

OBJECTIVE

- Configuring the ACP Directory Server

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

Configuring the ACP Directory Server (see Section4.16.3)

- From the M5000 CC Administrator application **[View]** menu, select the **[SQL directory Server]** command: The **"SQL directory server"** window opens.
- Configure the following fields:
  - ***{Activate connection between M5000 CC Server and SQL directory server}*** checkbox
  - ***{Host name}*** entry field
  - ***{Instance name}*** entry field
  - ***{Authentication type}*** entry field
  - Identity to use to connect to the M5000 CC Server according to authentication type
  - ***{Use name resolution for private calls}*** checkbox
  - Click **[Validate]**.

U-338: DISPLAY MENU: CALENDAR SERVER

OBJECTIVE

- Managing and configuring the calendar servers
  - Add a calendar server (see step **1** in this sheet).
  - Edit a calendar server (see step **2** in this sheet).
  - Delete a calendar server (see step **3** in this sheet).

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).
- The access rights for the calendar of each contact must first be defined either on the calendar server (Exchange, Domino; system administrator task) or using the client application (Outlook, Notes; task performed by the end user corresponding to the contact).

PROCEDURE

1 Adding a media server

- From the M5000 CC Administrator application's **[View]** menu, select the **[Calendar Server]** command: the **"Calendar servers"** window opens.
- Click **[Add]**  .
- Enter a unique name in the ***{Identifier}*** field.
- Fill in the ***{E-mail domains}*** list with all the e-mail address suffixes for which this connector will handle the calendar requests. You can use the special character "*".
  To obtain information about the calendar, such as the appointments and presence status of a given contact, the e-mail address of this contact is used to determine which calendar server to query. Therefore, it is possible to obtain calendar information about a contact, no matter the M5000 CC directory (even an external directory) from which the contact's details have been obtained, provided this contact has an e-mail address.
  For example, if a contact, John Smith, with the e-mail address "john.smith@anycompany.com" is found in an LDAP directory, it will be possible to obtain the calendar data for this contact with a calendar connector containing "anycompany.com" on his list of e-mail domains.
- Selecting a ***{Type}*** of calendar server
- Tick ***{Require a secure channel (SSL)}*** if the calendar has been configured to accept secure connections for calendar requests.
- Fill in the options specific to the type of calendar server chosen.

2 Editing a calendar server

- From the M5000 CC Administrator application's **[View]** menu, select the **[Calendar Server]** command: the **"Calendar servers"** window opens.
- Select the calendar server which must be edited and click **[Properties]**  .
- Modify the parameters of the currently edited calendar server (see step 1 in this sheet for more information about calendar server parameters).
- Click **[OK]** to confirm.

3 Deleting a calendar server

- From the M5000 CC Administrator application's **[View]** menu, select the **[Calendar Server]** command: the

"Calendar servers" window opens.

- Select the calendar server to be deleted then click **[Delete]**  .
- A warning message appears: “Do you really want to delete the calendar server?”
- Click **[Yes]** to confirm.

SPECIFIC CONFIGURATIONS

1 Domino

- ***{Host}***: specify the host name or IP address of the Domino server.
- ***{DIIOP port}***: enter the port number of the DIIOP task on the Domino server (63148 by default). Specify the TCP/IP port number and not the SSL port, even if SSL is activated for DIIOP.
- ***{User}***, ***{Password }***: Specify the Domino user whose identity will be used by M5000 CC to make calendar requests through this connector.

2 Exchange

- ***{Server}***: enter the network name or IP address of the PC on which the Exchange server is running.
- ***{Identification}***: leave blank ("-") to use the portal user’s identity to send requests to the Calendar server (standard configuration). In this case, if the Exchange server and M5000 CC Portal are not on the same PC, configure the PC hosting the M5000 CC Portal, as well as the user accounts of the domain using the M5000 CC Portal with the calendars as reliable for delegation. Without this configuration, authentication errors (error 401) will appear when a user consults a calendar for which he has consultation rights (even his or her own calendar). This problem is known as Double Hop Issue.

If the identity of a particular user must be used for all the requests:

- Select NTLM or Negotiate, depending on the level supported by the Windows environment

- Select Form if form-based authentication (FBA) is activated on Exchange Server,

then configure the following two fields.

- ***{User account}***: enter the full identification (typically: <domain>\<identifier>) of the user whose identity will be used to make all the requests.
- ***{Password}***: enter the password of the user whose identity will be used to make all the requests.
- ***{Public directory name}*** and ***{Calendar directory path}***: complete according to Exchange server configuration, to allow the creation of web requests.
- Tick ***{Use e-mail address to access voicemail box}*** if the web requests must use the contact’s e-mail address instead of his/her name.

3 Exchange 2010

- ***{Server}*** : enter the network name or IP address of the PC on which the Exchange 2010 server is running.
- ***{Identification}*** : leave blank ("-") to use the portal user's identity to send requests to the Calendar server (standard configuration). In this case, if the Exchange server and M5000 CC Portal are not on the same PC, configure the PC hosting the M5000 CC Portal, as well as the user accounts of the domain using the M5000 CC Portal with the calendars as reliable for delegation. Without this configuration, authentication errors (error 401) will appear when a user consults a calendar for which he has consultation rights (even his or her own calendar). This problem is known as Double Hop Issue.

If the identity of a particular user must be used for all the requests:

- Select NTLM or Negotiate, depending on the level supported by the Windows environment,

then configure the following two fields:

- ***{User account}*** : enter the full identification (typically: <domain>\<identifier>) of the user whose identity will be used to make all the requests.
- ***{Password}*** : enter the password of the user whose identity will be used to make all the requests.

U-339 : DISPLAY MENU: VIRTUAL CENTRES

OBJECTIVE

- Defining virtual centres:
  - Add a virtual centre (see step 1 in this sheet).
  - Modify a virtual centre (see step 2 in this sheet).
  - Delete a virtual centre (see step 3 in this sheet).

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).
- At lease one ""VMWare VirtualCenter" application must be accessible.

PROCEDURE

1 Adding a virtual centre:

- From the M5000 CC Administrator application **[View]** menu, select the **[Virtual centres]** command: the **"Virtual centres"** window opens.
- Click **Add**  to add a virtual centre to the system. The **Virtual centre properties** window opens:
  - Enter a unique ***{name}*** for the virtual centre.
  - Enter the ***{user name}*** and associated ***{password}*** known to the virtual centre. Confirm the ***{password}*** in the ***{confirm}*** area.
  - In the ***{Link}*** text box, enter a valid link for the previously specified virtual centre. (example: https://PC-VMWARE-VC:444/sdk)

  Note: *The ""VMWare VirtualCenter" application must be installed on the PC corresponding to the above link (example: PC-VMWARE-VC).*

  - Enter the data centre name in the ***{data centre}*** text box.
  - Click ***[Validate]***.

2 Modifying a virtual centre:

- From the M5000 CC Administrator application **[View]** menu, select the **[Virtual centres]** command: the **"Virtual centres"** window opens.
- Click **Properties**  to modify a virtual centre on the system. The **Virtual centre properties** window opens:
  - Enter the ***{user name}*** and associated ***{password}*** known to the virtual centre. Confirm the ***{password}*** in the ***{confirm}*** area.
  - In the ***{Link}*** text box, enter a valid link for the previously specified virtual centre. (example: https://PC-VMWARE-VC:444/sdk)

  Note: *The ""VMWare VirtualCenter" application must be installed on the PC corresponding to the above link (example: PC-VMWARE-VC).*

  - Enter the data centre name in the ***{data centre}*** text box.
- Click ***[Validate]***.

3 Deleting a virtual centre

- From the M5000 CC Administrator application's **[View]** menu, select the **[Virtual centres]** command: the **"Virtual centres"** window opens.
- Select a virtual centre from the list.
- There are two ways to delete this virtual centre:

- u Click the Delete  button, or
- u Right-click the virtual centres then select ***[Delete]*** from the pop-up menu.

- Click ***[OK]*** in the confirmation dialogue box.
-

COMMENTS

- The use of a virtual centre is associated with the start of an M5000 CC Media Server (”Configuring M5000 CC Media Server’s physical PCs:)

U-340 : DISPLAY MENU: WALL DISPLAYS

OBJECTIVE

- Configuring the Wall display:
  - Define the Wall Display properties (see step **1**in this sheet).
  - Assign the Wall Display to the Services (see step **2** in this sheet).
  - Display the "Service properties" of remote Servers on a wall display (see step **3** in this sheet).

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

1 Define Wall Display properties:

- Select **[Wall displays]** in the M5000 CC Administrator application's **[View]** menu.
- Click the  icon: the **"Wall display properties"** window opens.
- Configure the Wall Display properties:
  - Select the serial port (COM1 to COM4) to which you want to connect the wall display from the ***{Serial port}*** drop-down list.
  - Select the number of line(s) used on the wall display from the ***{Number of lines}*** drop-down list. The maximum number of lines is 4.
  - Select the maximum number of characters that can be used by the wall display from the ***{Maximum number of characters}*** list.
  - ***{Communication protocol}***: select "Alpha™" or "Activox" from the drop-down list, depending on the type of Wall display you have (see the descriptions in Section 8.4.11.2).

2 Assigning the wall display to Services:

- Select **[Wall displays]** in the M5000 CC Administrator application's **[View]** menu.
- Click on the  icon.
- The following information appears in non-modifiable fields in the **"Wall display properties"** window:
  - ***{Wall display Id},***
  - ***{Serial port},***
  - ***{Number of lines},***
  - ***{Maximum number of characters},***
  - ***{Communication protocol}***.
- In the **{Area}** tab:
  - Select the number of areas used on the wall display from the ***{Number of areas}*** scroll down list. (see note). The maximum number of zones is equal to the number of lines (when a new wall display is created, this number is set to 1 by default).

    Note: *In a wall display, you have the possibility to define one or more zones. A zone is a set of at least one line. The maximum number of zones is equal to the number of lines of the wall display.*
  - For **For each zone defined**:
    - assign a group of lines by entering the first and the last line numbers of this group into the two textboxes.

By default, a zone contains at least one line. Another important point is that zones can't cover each other (a line can't belong to two different zones)

u Assign one or more Services to a wall display zone. The assignment is done by clicking on the arrows:

-  Assign the selected Service.
-  Unassign the selected Service.
-  Assign all Services.
-  Unassign all Services.

Note: *When you assign a Service to a zone, the non filtered statuses are displayed by default. The selection of information in the zone (see Sheet U-482)can be changed by the Service manager of the assigned Service.*

- In the ***{Show Title?} scroll down list select***:
  - **"Don't show"** in this zone or
  - **"Show title permanently"** in this zone or
  - **"Show title only once"** in this zone (at the beginning of the sequence of displayed properties)

  u If "Show title permanently" or "Show title only once" is selected, you can check the ***[Show Service Id]*** checkbox if you want to use the Id of the service as title for this zone.

  u If ***[Show Service Id]*** is not checked, the title can be introduced by the user via the ***{Title}*** textbox.

  u Finally, you can decide to display global information (see note and comments at the end of the sheet) about the Services by ticking ***[Show Global Info]***.

  Note: *The general information about the input (output) properties in only displayed if there is at least one Service.*

- In the **{Automatic start}** tab
  - Check or uncheck the ***{Wall display must be started in service mode}*** checkbox if you want or do not want the wall display to be automatically started by the M5000 CC Server.

    Note: *Default value = unchecked (start in service mode deactivated; therefore, the wall display starts using the desktop shortcut).*

  - Enter the name of the PC on which the wall display service is running in the ***{PC name}*** field.
  - Enter the maximum stop time for the wall display in service mode, in the ***{Maximum stop time in service mode}*** field.

    Note: *Default value = 80 [Seconds]*

  - Enter the maximum start time for the wall display in service mode, in the ***{Maximum start time in service mode}*** field. This value represents the maximum time available for the "M5000 CC Wall Display Service" start procedure. After this limit, the start procedure is considered to have failed.

    Note: *Default value = 50 [Seconds]*

- Click ***[Validate]***.

3 Display the "Service Properties" of remote Servers on a wall display:

The Service properties of remote Servers can be displayed on a wall display, like the "Service properties" of the local Server. A remote DNIS must be defined.

COMMENTS

Statuses Global Information

In addition to Service statuses, it is possible to get status summaries for a type of Service: inbound or outbound. Inbound/outbound global information is available on the info bar menu as soon as there is at least one inbound/outbound Service in Production and that other conditions depending on the client application are

satisfied:

- M5000 CC Service Manager : the person is manager of the Service.
- M5000 CC User : the agent is assigned to the Service.
- M5000 CC Administrator : no condition.
- M5000 CC Wall Display : the Service is selected by the Administrator in at least one area..

The set of Services taken into account for the calculation also depends on the Services selection:

- M5000 CC Service Manager, M5000 CC User, and M5000 CC Administrator global information is computed on Services selected on the info bar menu, or on all selectable Services if none has been selected.
- M5000 CC Wall Display : the calculation is for all the Services selected on the wall display by the Administrator.

Depending on the type of data, the calculation returns an addition (for example: the Number of calls), a maximum value (Longest waiting time) or an average value (Service Quality).

Important:

- Display properties of the data (choice of the prefixes, suffixes and positions) is copied from the administrator's display (see Sheet U-348) but the selection of a data is based on the selection in the Services of the set: only properties selected in all Services are displayed in the global information.
- Properties (thresholds, beep, ...) specific to the wall display are not available for global information. The default display color is: amber.

U-341 : DISPLAY MENU: MEDIA SERVERS

OBJECTIVE

- Managing media servers, the resources and sockets required to manage the contact centre's voice, e-mail and web communications.
  - Managing the media servers:
    - u Add a media server (see step 1).
    - u Modify the properties of a media server defined already (see step 2).
    - u Delete a media server (see step 3).
  - Managing the resources:
    - u Add a resource to a given media server (see step 4).
    - u Modify the properties of an already defined resource (see step 5).
    - u Delete a resource from a given media server (see step 6).
  - Managing sockets:
    - u Add a socket to a given media server (see step 7).
    - u Modify the properties of an already defined socket (see step 8).
    - u Delete a socket from a given media server (see step 9).

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

1 Adding a media server:

a) Adding a logical computer

- From the M5000 CC Administrator application **[View]** menu, select the **[Logical machines for media server]** command: the window **"Logical PCs used by media servers"** opens.
- In the left part of the **"Logical machines used by media servers"** window, right-click **[Logical machines]**, then select **[Add Logical Machine]** in the pop-up menu: the **"Logical machine properties"** window opens.
- Enter the name of the logical PC in the ***{Logical machine name}*** text box; this name is entirely free. Then click ***[Validate]***.
- When we click on ***[Validate]***, the application automatically select the command to add a M5000 CC Media Server and display the **"Media server properties"** window (see next section)

Remarque :For more information about logical PCs, see ***Defining a logical PC for the media server*** in the chapter ***Failure tolerance***.

b) Adding an M5000 CC Media Server

To add a media server, first define the logical PC on which the M5000 CC Media Server *will start (see "a)Adding a logical PC").*

- In the left part of the **"Logical machines used by media servers"** window: select the logical PC on which the M5000 CC Media Server will start.
- In the toolbar of the **"Logical machines for media server"** window, click the ***[Add]***  button: the **"Media server properties"** window opens.
- Enter the different characteristics of the media server in the **"Media server properties"** window.
  - u Enter the media server identifier in the ***{Media server ID}*** drop-down list.
  - u Enter the media server log file path ***{Log file path (local path on the media server}***. This

parameter contains the log file path used by the M5000 CC Media Server; this path must be considered as the path for the media server PC in question, even if it is introduced from another PC (Administrator PC).

Note: *The log file is a file where the M5000 CC Media Server saves information about its working. If this field is blank, an error message appears and the M5000 CC Media Server will not initialize.*

u Enter the local path (to the media server) for the segment files in the ***{Local path (to media server) for segment files}*** box. This parameter enables the media server to know whether it must copy the segment files associated with incoming voice services in production locally and in which directory. This is only useful if the media server is started on a Pc other than the one on which the M5000 CC file structure, and thus the segment files, are located.

Note: *This parameter is optional.*

u On the ***{Automatic start}*** table:

- Enter the maximum stop time for the media server in service mode, in the ***{Maximum stop time in service mode}*** box. When the M5000 CC Media Server are alerted about the start of the Server Shutdown procedure, they immediately stop accepting new calls and a timeout equivalent to the value of the parameter entered in this box is initialized. At the end of this timeout, the M5000 CC Media Server are stopped and the current scripts are no longer processed. If the shutdown execution rule is not verified, the M5000 CC Media Server return to their normal activity. It is, therefore, important that the value defined here be above the "MaxStopPendingTime" value defined in the "Versions.cfg" database from the Administrator properties window.

Note: *Default value = 80 [Seconds]*

- Enter the maximum start time for the media server in service mode, in the ***{Maximum start time in service mode}*** box. This value represents the maximum time available for the "M5000 CCMediaServerService" start procedure. Once this time has elapsed, the start procedure is considered as failed.

Note: *Default value = 50 [Seconds]*

- Check or uncheck the ***{Media server must be started in service mode}*** checkbox if you want or do not want the media server to be automatically started by the M5000 CC Server.

Note: *Default value = unchecked (start in service mode deactivated; the media server starts using the desktop shortcut).*

u On the ***{Record via MAPI}*** table:

- Enter in the ***{MAPI profile for recording function}*** box, the profile name used to send e-mails while executing a "SaveVoiceMail" node and during agent recording.

Note: *See in the operating system's Control Panel.*

u In the ***{MAPI password for recording function}*** box, enter the password used to connect to the message server.

Note: *This parameter is optional.*

u On the ***{Socket for web}*** table:

- In the ***{IP address of the socket to use for web functions}*** box, enter according to network configuration:

  -**Without Proxy**: Public IP address

  -**With Proxy**: IP address of M5000 CC Media Server local PC (or PC name if the computer has one address only).

Note: *Internet format address.*

- In the ***{IP port of the socket to use for web functions}*** box, enter according to network configuration:

  -**Without Proxy**: One port free

  -**With Proxy**: One port selected from the Client Proxy configuration file.

Note: *Value between 1 (preferably 1024) and 65535.*

u On the ***{System socket}*** table:

- In the ***{System socket IP address}*** box, enter the IP address to which the M5000 CC Server sends notification messages: the M5000 CC Media Server address.

Note: *The IP address has to be in the Internet dotted format.*

u In the ***{System socket IP port}*** box, enter the UDP port on which the M5000 CC Server sends the messages.

Note: *M5000 CC Media Server listening port*

u On the ***{Voice synthesis licences}*** table:

• Tick the ***{Maximum licence allocation}*** box to automatically reserve a number of "Simultaneous Text-To-Speech access" licences equal to the number of analogue, IP for IVR or IP resources for conference defined for this M5000 CC Media Server (see remarks COMMENTS about IP resources for conference).

Note: *This option corresponds to the default configuration.*

u In the ***{Specific licence allocation}*** box, enter the number of "Simultaneous Text-To-Speech access" licences to reserve for this M5000 CC Media Server.

- When we add a Media server to a logical computer to which no physical computer is associated, the Administrator application displays a new window that allows associating a physical computer to the logical computer. The user cans:

u Select an existing physical computer in the drop down list. In this case, the selected physical computer is associated to the logical computer.

u Enter the name of a physical computer. In this case, a new physical computer is added to the configuration with default option value, then, this physical computer is associated to the logical computer.

Note: *This function is only available if the **{Maximum licence allocation}** option is unchecked.*

c) Configuring M5000 CC Media Server's physical PCs:

For choosing the physical PC on which the logical machine serving as support for the media server will run.

- Select the **[Computers for Media Server]** command from the M5000 CC Administrator application **[View]** menu: the **"Computers used by media servers"** window opens.

- In the toolbar of the **"Computers used by media servers"** window, click ***[Add a computer]***  : the **"Computer properties"** window opens.
- Enter the name of the logical machine in the ***{Machine name}*** text box.

Note: *This "Media server name" must correspond to the name of the PC on which the media server will run; its syntax must respect the syntax for the names of the PCs that are part of a Microsoft Windows domain.*

- In the **{Socket}** tab, you must redefine the IP address properties defined already in the logical PC (the properties defined here will have priority over those defined in the logical machine). When the **[use … by default]** boxes are ticked, the Media server will use the properties of the logical machine on which its is defined.
- In the **{ESX servers}** tab, it is possible to specify the ESX server on which the Media server can run (only if the VMWare infrastructure is available). For this, just choose ***[Use only with the above ESX servers:]*** then click ***[Add]***  . An "ESX server properties" window opens. Enter the name of the host computer and the domain name of this computer in the corresponding text boxes and click ***[Validate]***.

Note: *Using an ESX server as the computer associated with a media server's logical PC implies that this latter be without SIV.*

Note: *To use this function, you have to declare at least one virtual centre (see Sheet* U-339*).*

Remarque :For more information see ***Problems of media servers*** in the chapter ***Failure tolerance***.

d) Assigning a computer to or removing a computer from a logical machine:

- Select the **[Logical machines for Media Server]** command from the M5000 CC Administrator application **[View]** menu: the window **"Logical PCs used by media servers"** opens.
- In the left part of the **"Logical machines used by media servers"** window: select the logical machine to which you wish to assign a computer.
- The computers that may be assigned to the logical machine are displayed in the **"Computers associated with the logical machine"** window. If no computer is defined, you must define one (see ***"Configuring M5000 CC Media Server's physical PCs:"***).

- Select a computer in the **"Computers associated with the logical machine"**  window and click ***[Assign logical machine to computer]*** (in the toolbar of this same window) to assign the selected computer to the logical machine. You can repeat this operation several times to assign several computers to the logical machine.
- To cancel a computer assignment, just select an already assigned computer in the **"Computers associated with logical machine"** window (the ***{Member}*** field is equal to "Yes") and click ***[Unassign logical machine from computer]***  .

2 Modifying media server properties

- Select the **[Logical machines for Media Server]** command from the M5000 CC Administrator application **[View]** menu: the window **"Logical PCs used by media servers"** opens.
- There are three possible ways to edit the properties of a media server:
  - u Select a media server by clicking the identifier of the corresponding media server, then click the ***[Properties]***  button or,
  - u Right-click " Media server ID" then select ***[Properties]*** from the pop-up menu, or
  - u Double-click a "Media server name".
- Refer to step 1 in this sheet for the description of the different fields in the "**Media server properties"** window.
- Click on ***[OK]*** to confirm the modifications.

  While editing the media server properties, you have the possibility to modify the media server name. This makes it possible to keep the configuration of this media server (including resources and sockets) if the PC name must be changed.

Remarque :The IP address properties and logical machine properties will be modified if they are redefined in the **[Computers for media server]** box in the **[View]** menu (if the ***[use ... by default]*** boxes are not ticked.

3 Deleting a media server:

- Select the ***[Logical machines for Media Server]*** command from the M5000 CC Administrator application **[View]** menu: the window **"Logical PCs used by media servers"** opens.
- Select a media server from the list.
- There are two ways to delete this media server:
  - u Click the Delete  button, or
  - u Right-click the media server then select ***[Delete]*** from the pop-up menu.
- Click ***[OK]*** in the confirmation dialogue box.

  When a media server is deleted, all the resources and sockets associated with this media server are also deleted.

4 Adding a resource to a given media server

- On the list of media servers in the **"Logical machines used by media severs"** window, select the media server to which you wish to add a resource.
- In the toolbar of the **"Logical machines used by media server"** window, click the Resources  button.
- In the **"Resources"** window, click the ***[Add resource] button***  .
- Enter the different characteristics of this resource in the **Resource properties** window:
  - u Enter the resource identifier in the ***{Resource name}*** text box. Example: Resource01
  - u Enter the extension number of this resource in the ***{Extension number}*** text box.

  Note: *This number will be used by the selected telephone interface to manage this resource.*

u Enter the profile for this resource in the ***{Resource profile}*** list. A choice is made from four pre-defined profiles:

- IP for IVR: resource on Dialogic card managed via HMP interface ("Voice over IP")
- Analogue: resource on Dialogic card managed via CSTA interface
- Call pits: call pit type resource
- IP for Conference: resource on Dialofic card managed via HMP interface, used for Conference service. Maximum 400 IP for Conference resources can be defined. All the IP for Conference resources must be declared on the same Media Server
- SIP for IVR: resource on Dialogic card managed via HMP interface ("SIP")
- SIP for Conference: resource on Dialogic card managed via HMP interface, used for Conference service. Maximum 400 SIP for Conference resources can be defined. All the SIP for Conference resources must be declared on the same Media Server

Note: *Depending on the value chosen for this profile, some lists of this properties window may be deactivated when they are not pertinent.*

u Enter the name of the Dialogic channel associated with this resource in the ***{Dialogic channel name}***.

Note: *This list is deactivated because it is not pertinent for call pit type resources.*

- Enter the type of traffic associated with this resource in the ***{Type of traffic on resource}*** list. This type can take on three predefined values:

u Combined: the resource can be used for incoming calls and for strapping type calls.

u Incoming Call: the resource can be used only for incoming calls.

u Strapping: the resource can only be used for strapping type calls (calls redirected or transferred from a call pit to an analogue resource and vice versa).

Note: *This list is deactivated because it is not pertinent for call pit type resources.*

- Enter the name of the telephone link associated with this resource in the ***{Name of telephone link to use}*** list. This list is pre-completed via the list of telephone links defined in the M5000 CC system.

Note: *This parameter is required by the media server to use the resource. However, the resource may be validated without telephone link to enable the administrator to define this link later.*

- Enter the name of the telephone link associated with this resource in the ***{Name of SIP link to use}*** list. This list is pre-completed via the list of telephone links defined in the M5000 CC system.

Note: *If the chosen sip link is set to used TLS, the resource will encrypt the messages and eventuality the call (if SRTP).*

- Enter the SIP port number associated with this resource in the ***{SIP port}***. This is pre-completed via a port number not yet used by M5000 CC.
- Enter the extension password of this resource in the ***{Extension password}*** text box.

Note: *The default password of an IP resource is 0000.*

5 Modifying the properties of an already defined resource

- Select the **[Logical machines for Media Server]** command from the M5000 CC Administrator application **[View]** menu: the window **"Logical PCs used by media servers"** opens.
- In the **"Media server"** window toolbar, click the Resources  button.
- There are three possible ways to edit the properties of a media server:

u Select a resource by clicking the identifier of the corresponding resource, then click the ***[Properties]***  button or,

u Right-click "Resource ID" then select ***[Properties]*** from the pop-up menu, or

u Double-click a "Resource ID".

- Refer to step 4 in this sheet for the description of the different fields in the "**Media server properties**" window.
- Click on ***[OK]*** to confirm the modifications.

6 Adding a resource of a given media server

- Select the ***[Logical machines for Media Server]*** command from the M5000 CC Administrator application **[View]** menu: the window **"Logical PCs used by media servers"** opens.
- In the toolbar of the **"Logical machines used by media server"** window, click the Resources  button.
- Select a resource from the list.
- There are two ways to delete this resource:
  - Click the Delete  button, or
  - Right click on the resource then select ***[Delete]*** from the pop-up menu.
- Click ***[OK]*** in the confirmation dialogue box.

7 Adding a socket to a given media server

- From the list of media servers in the media server window, select the media server to which you wish to add a socket.
- In the toolbar of the **"Logical machines used by media servers"** window, click the ***[Socket]*** button.
- In the **"Socket"** window, click ***[Add socket]***  .
- Enter the different characteristics of this resource in the **Socket properties** window:
  - Enter a socket identifier in the ***{Socket name}*** text box.

  Note: *Used in "SendUDP" and "GetUDP" nodes*
  - Enter the socket IP address in the ***{Socket IP address}*** text box.

  Note: *The IP address must be in "Internet address" format.*
  - Enter the socket IP address in the ***{Socket IP address}*** text box.

  Note: *Value between 1 (preferably 1024) and 65535.*

Remarque :The socket properties entered via the widow **"Computers used by media servers"** (**[Computers for media server]** command of the **[View]**) menu will have priority over the properties defined in the window **"Logical machines used by media servers".**

8 Modifying the properties of an already defined socket

- Select the **[Logical machines for Media Server]** command from the M5000 CC Administrator application **[View]** menu: the window **"Logical PCs used by media servers"** opens.
- Click the ***[Socket]*** button in this window. The **"Sockets"** window opens.
- There are three possible ways to edit the properties of a socket:
  - Select a socket by clicking the identifier of the corresponding socket, then click the ***[Properties]***  button, or
  - Right-click **"Socket ID"** then select ***[Properties]*** from the pop-up menu, or
  - Double-click a **Socket ID**.
  - Refer to step 7 in this sheet for the description of the different fields in the **"Socket properties"** window.
  - Click on ***[OK]*** to confirm the modifications.

Remarque :The socket properties entered via the widow **"Computers used by media servers"** (**[Computers for media server]** command of the **[View]**) menu will have priority over the properties defined in the window **"Logical machines used by media servers".**

9 Adding a socket of a given media server

- Select the ***[Logical machines for Media Server]*** command from the M5000 CC Administrator application **[View]** menu: the window **"Logical PCs used by media servers"** opens.
- Click the ***[Socket]*** button in this window. The **"Sockets"** window opens.
- Select a socket from the list.

- There are two ways to delete this socket:
  - Click the Delete  button, or
  - Right click socket then select ***[Delete]*** from the pop-up menu.
- Click ***[OK]*** in the confirmation dialogue box.

COMMENTS

Some IP conference resources can only be defined for a single media server. In fact, if the administrator tries to add some IP conference resources to several media servers, a clear message will be displayed, explaining that this type of resource can only be used on one media server at a time.

The media server with conference resources is considered as the Conference media server. This media server will manage all calls to the conference bridge, the execution of the conference script, the messages played before, during and after each conference, etc.

For more information about logical PCs for media servers, see the section ***"Media server problems"*** in the chapter ***"Failure tolerance"***.

Nota :
- *The conference node execution requires some limitation in Media Server configuration. See page 87 for more information*

U-342 : DISPLAY MENU: VOICE SYNTHESIS CHANNELS

OBJECTIVE

- Managing the channels used for voice synthesis:
  - Open the voice synthesis management window (see step in this sheet).
  - Associate voice synthesis to a language (see step 2 in this sheet).
  - Modify voice synthesis (see step 3 in this sheet).
  - Delete voice synthesis (see step 4 in this sheet).

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).
- The call server must be started and the voices used for voice synthesis must be pre-installed on the PC(s) on which the call server is running.

PROCEDURE

1 Opening the voice synthesis management window:

- From the M5000 CC Administratorapplication **[View]** menu, select the **[Voice synthesis]** command: the **"Voice synthesis voice"** window opens:

Figure 10.35 VOICE SYNTHESIS VOICE WINDOW

This configuration window is used to add, modify or delete a voice synthesis voice. The aim is to associate a voice synthesis voice with a language so that this voice is used when a message must be synthetisised in the associated language.

2 Associating a voice synthesis voice to a language:

- To associate a voice synthesis voice, click the  icon: the **"Language properties"** window opens.
- Indicate the language concerned.

  To indicate the language concerned, you can either select one of the languages proposed, or enter a new language.
- Choose the associated voice.

  The voices available depend on the voice synthesis engine, which is installed on the machine on which the M5000 CC Media Server is run.

3 Modifying a voice synthesis

- To modify a voice synthesis:
  - u Double-click the language concerned.
  - u Select the language concerned then click the  icon.
  - u Right-click the language concerned then select the **[Properties]** command.
- Modify the voice synthesis in the **"Language properties"** window.

4 Deleting a voice synthesis voice

- Select the language concerned then click the  icon.

U-343 : DISPLAY MENU: NETWORKING

OBJECTIVE

- Configuring remote Servers
  - Configure the multi-Server parameters and the properties of the overflow Servers (see step **1** in this sheet),
  - Configure the multi-Server parameters and the properties of the innerflow Servers (see step **2** in this sheet),

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

COMMENTS

- To be able to transfer a call or information from one Server to another Server, a relation between them must be declared. This link between two Servers is defined in the M5000 CC Administrator application of each of them. One part of the relation indicates that the Local Server can transfer a call to another Server **(OVER:** an overflow Server is defined). The other part of the relation tells that the Local Server can receive a transferred call from an other Server (**IN** : an innerflow Server is defined).
- In the Figure 10.36 the connection between the Server A and the Server B is initiated when the overflow Server (Server B) is defined on the innerflow server (Server A). A local IP port of the range defined on Server A is used to create the connection. The use of this port is accepted by Server B if the IP address and IP port used to connect are known to Server B (remote port and IP address properties). This lets you be be sure of the identity of the computer that wants to connect.

  Note: *An "Activated" property lets you suspend the connection between the 2 Servers. It is recommended to deactivate the overflow Server because it initiates the connection.*

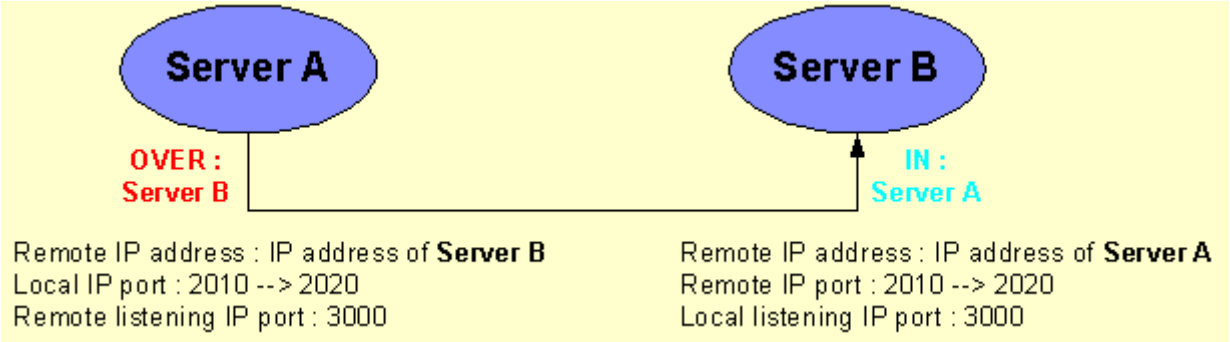


Figure 10.36 REMOTE SERVER BLOCK DIAGRAM

PROCEDURE

1 Configure the multi-Server parameters and the properties of the overflow Servers:

- Select the **[Network > Overflow Servers]** command in the M5000 CC Administrator application's **[View]** menu: the **"Overflow Server"** window opens (see Figure 10.37):

  This window indicates to the M5000 CC Administrator application all the remote Servers that have been defined to receive calls transferred from the Local Server: picture from the computer that initiates the connection : Server A

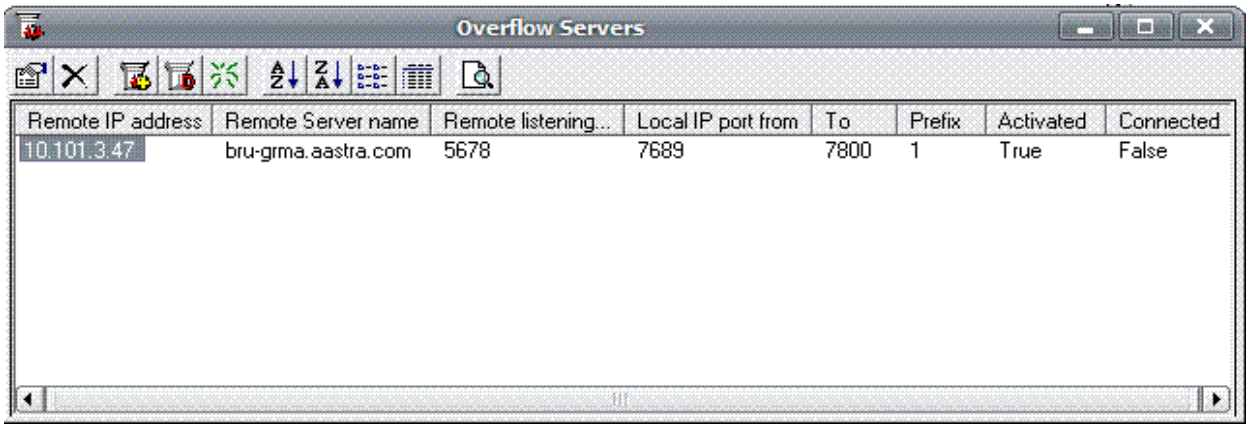


Figure 10.37 "INNERFLOW SERVERS" WINDOW

- The overflow server can be activated (A)  to enable it to connect to a remote Server or be deactivated (D)  to prevent it connecting to a remote Server. To activate or deactivate a Server right click on an element then select the **[Activation]** or **[Deactivation]** option from the menu. This property is useful to suspend a connection between two remote Servers without deleting the item.

Overflow Server properties :

- Click on the  icon to access the **"Overflow Server properties window"** :
  - ***{Remote IP address}*** : this field may be filled with the IP address or the name of the Remote Server on the network.
  - ***{Remote listening IP port}***: IP port used by the Remote Server to listen for new connections.
  - ***{Local IP port from}*** : start of the range for the local IP port to initialise the connection (a range of ports is used to ensure that one is free).
  - ***{to}***: end of the range for the local IP port (must be greater than or equal to the start of the range).
  - ***{Prefix}***: prefix of the PBX of the Remote Server, to be added when a transfer is executed.
  - ***[Activated]*** checkbox: overflow Server activation, which means it is able to connect to a remote Server.
  - ***[Use a fixed local address]***checkbox: used to specify the **[Local address]** which is the local address used to set up connection with the remote server.
    This parameter is useful if the server has several network cards.
  - ***[Connected]***: read-only property that shows if the connection is established.

2 Configure the multi-Server parameters and the properties of the innerflow Servers:

- Select **[Network > Innerflow Servers]** in the M5000 CC Administrator application's **[View]** menu: the **"Innerflow Server"** window opens.

  This window indicates to the M5000 CC Administrator application all the remote Servers that have been defined to send calls to the Local Server: picture from the computer that accepts the connection : Server B.

- The Innerflow Server can be activated (A)  to enable it to connect to a remote Server or be deactivated (D)  to prevent it connecting to a remote Server. To activate or deactivate a Server right click on an element then select the **[Activation]** or **[Deactivation]** option from the menu. This property is useful to suspend a connection between two remote Servers without deleting the item.

Innerflow Server properties:

- Click on the  icon to access the **"Innerflow Server properties window"**:

  - ***{Remote IP address}*** : this field may be filled with the IP address or the name of the Remote Server on the network. This is used to check the identity of the computer that wants to connect.
  - ***{Remote IP port from}*** : start of the range for the IP port used by the Remote Server to initialise the connection. This is used to check the identity of the computer that wants to connect.
  - ***{to}***: end of the range for the local IP port (must be greater than or equal to the start of the range).
  - ***[Activated]*** checkbox: innerflow Server activation, which means that it is able to connect to a remote Server.
  - ***[Connected]***: read-only property that shows if the connection is established.

U-344 : DISPLAY MENU: SUB-NETWORKS

OBJECTIVE

- Define the sub-network parameters to enable sub-network broadcasting

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

COMMENTS

In the standard method, the broadcast is only sent to the Local Area Network: the messages are not sent via routers. To get round this problem, another broadcast technique is available in the IP network: the specific subnet directed broadcast. This technique allows sending only once the same information to different client applications located on the same sub-network, even if these client applications are not on the same sub-network as the Server.

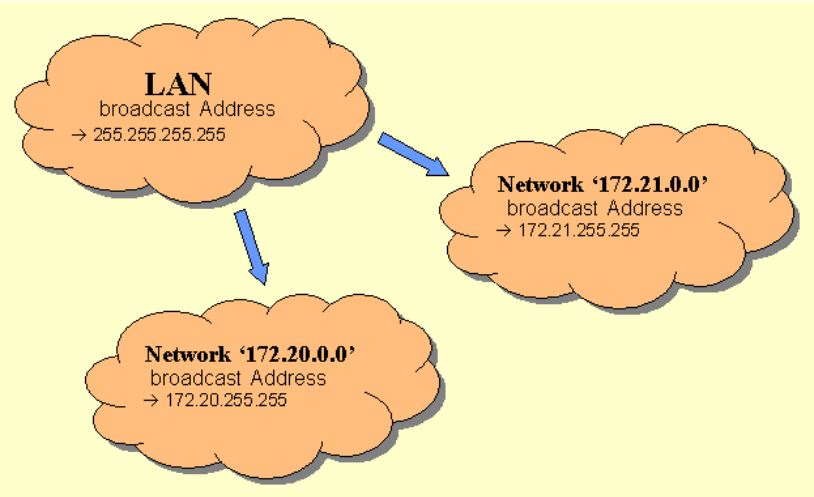


Figure 10.38 SUBNET BLOCK DIAGRAM

COMMENTS

Note: You are not allowed to add or delete a sub-network in "Maintenance Mode" (see night mode in Sheet U-312).

To define the sub-network parameters

- To define a sub-network, select the **[Sub-network]** command from the M5000 CC Administrator application's **[View]** menu: The **"Sub-networks"** window opens (see Figure 10.39).

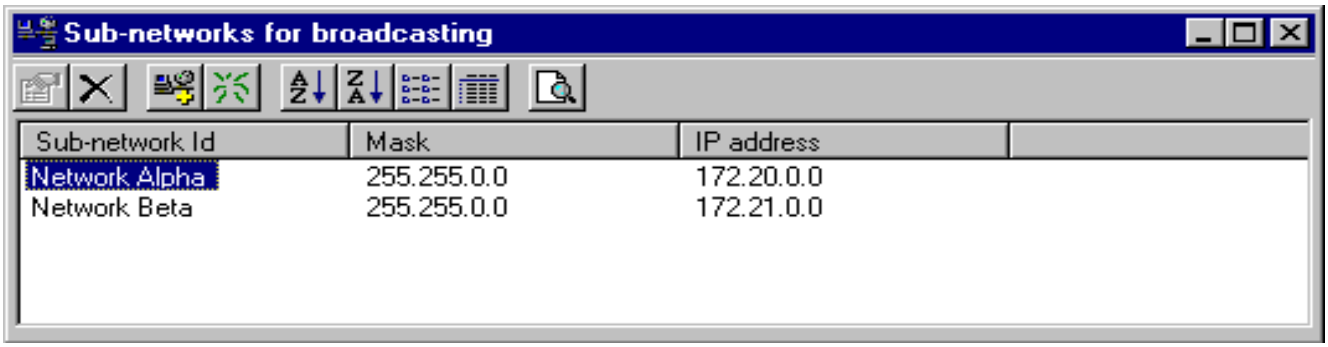


Figure 10.39 "SUB-NETWORKS FOR BROADCASTING" WINDOW

The **"Sub-networks"** window shows to the administrator all sub-networks that have been defined to receive broadcast messages.

1 Add sub-network:

- To add a sub-network, click on the  icon:
- In the **"Sub-network properties"** window, enter in the following fields:
  - u ***{Sub-network Id:}*** : Id of the sub-network (see note)
  - u ***{Mask}*** : mask used to send the broadcast (default value during sub-network creation: "255.255.0.0") (see note)
  - u ***{IP address}*** : IP address of the sub-network to which the broadcast message will be sent (see note).

  Note: *These first three fields can only be modified when a sub-network is created; they are greyed out on modification of the properties.*

  - u ***{UDP ports lower bound}***: UDP range lower
  - u ***{UDP ports upper bound}***: UDP range upper
  - u ***{TCP ports lower bound}***: TCP range lower
  - u ***{TCP ports upper bound}***: TCP range upper.
- Click on ***[OK]***; the definition line for this sub-network appears in the **"Sub-networks"** window.

2 Modifying a sub-network:

- To access the sub-network properties:
  - u Double-click directly on the name of the network concerned.
  - u Select the name of the sub-network concerned, then click on the  icon.
  - u Right-click the name of the subnet concerned, then select the **[Properties]** command.
- In the **"Sub-network properties"** window:
  - u You can also modify the lower/upper UDP/TCP limit values (the first three fields are grayed out and cannot be modified; to modify them, delete this sub-network, then recreate it).

3 Delete sub-network:

- Select the name of the sub-network concerned, then click on the  icon.
- Click on ***[OK]*** in the deletion confirmation message window.

U-345 : DISPLAY MENU: OPTIONS

OBJECTIVE

- To define the MDI/SDI display mode of the M5000 CC Administrator application

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

To define the MDI/SDI display mode of the M5000 CC Administrator application, select the **[Options]** command from the M5000 CC Administrator application's **[View]** menu, then one of the two menu display options:

- **[MDI]** (Multiple Document Interface) : This display mode provides the information requested in different windows without any link between them.
- **[SDI]** (Single Document Interface mode) : In this mode, all the windows are linked. Highlighting an element in a window will update all the elements linked to this element from other windows. Click on one will highlight all related items of other windows.

U-346 : STATUS MENU: DISPLAY

OBJECTIVE

- To show the display, configured earlier in the "Display properties" (see Sheet U-348) to manage the M5000 CC Administrator application's information bar.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).
- First parameter the "Display properties" in Sheet U-348.

PROCEDURE

- To show the M5000 CC Administrator application's display, select the **[View]** command from the M5000 CC Administrator application's **[Status]** menu: A new field appears stating **"No Service"** (see Figure 10.40).
- Right-click on the field and choose among the different Services the scope of the variables you have opted for. It is also possible for an administrator to get global information on the different Services (of the same type).
- The status bar available over the "whole" application switches from one Service to another if you want to display information for several Services

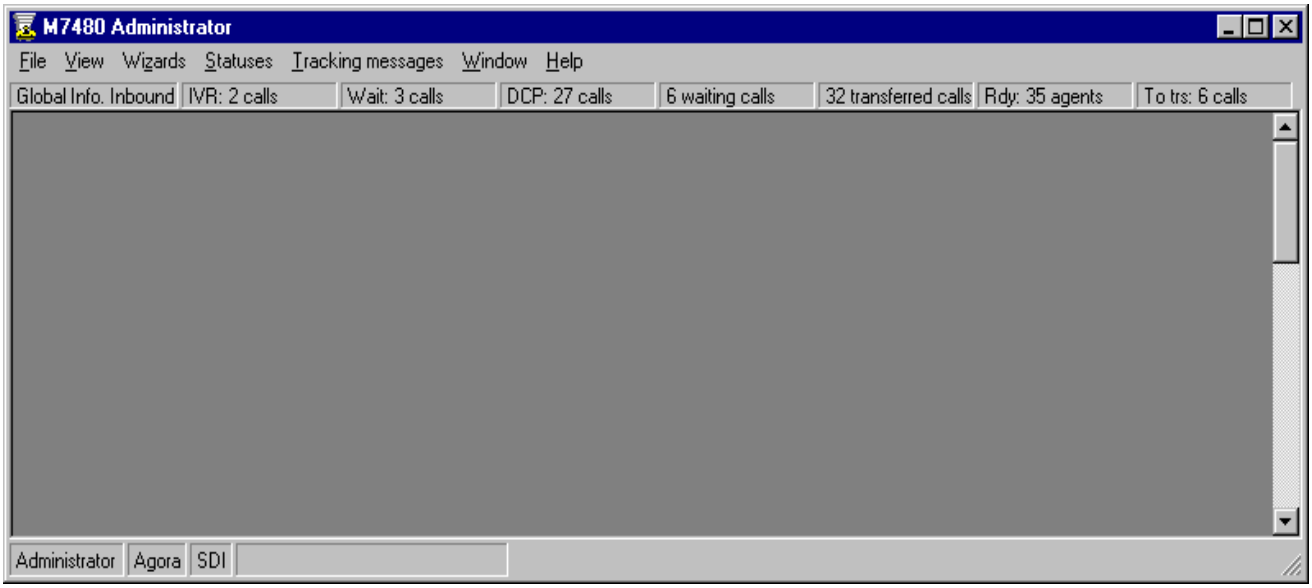


Figure 10.40 "WHOLE" INFORMATION BAR IN THE APPLICATION WINDOW M5000 CC ADMINISTRATOR

- If the application is reduced to an "Always visible" bar and you want to display the information for several services, the different services will be displayed one beneath another:

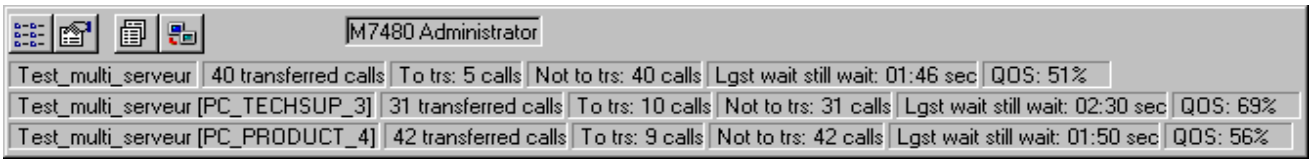


Figure 10.41 INFORMATION BAR "ALWAYS VISIBLE" IN THE M5000 CC ADMINISTRATOR APPLICATION WINDOW

U-347 : STATUS MENU: UDP PROPERTIES

OBJECTIVE

- Setting the maximum UDP size (UDP: User Datagram Protocol) which will be sent by the Server.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

To set the UDP properties:

- Select the **[UDP properties]** command from the M5000 CC Administrator application's **[Statuses]** menu. The **[UDP Properties** window opens.
- In the ***{Datagram length (bytes)}***scroll down list, select the maximum size of UDP which will be sent by the Server. This size depends on the network on which the installation has been done. By default, this value is set to 3000.
- Click ***[Validate]***.

U-348 : STATUS MENU: DISPLAY PROPERTIES

OBJECTIVE

- To parameter first the "Display properties" (see Sheet U-346) before managing the M5000 CC Administrator application's information bar.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

General information bar management:

In order to visualize information regarding the different Services he created, the administrator has to follow 4 steps:

- Choose the variables he wishes to display on his application
- Edit the properties of the variables and possibly change the prefix and suffix
- Check the box indicating that the variables will be displayed on his application and validate
- Choose the Service(s) for which the variables have to be displayed

Note: The Display properties of the remote Service may be displayed like the Properties of the local Service. A remote DNIS must be defined.

Open the "Display properties" window:

- To choose the variables to be displayed, select the **[Display properties]** command from the M5000 CC Administrator application's **[Status]** menu: the **"Display properties"** window opens, presenting around a hundred variables.

To edit the Properties of a variable:

- Select the variable concerned and click on the button  : the variable editing window opens (***{Prefix}***, ***{Suffix}*** fields and ***{View checkbox in :}*** **[Administrator]**).
- If necessary, change the suffix and prefix that appear on the application. Do not forget to check the box **[Administrator]** if you want the variables to appear in the info bar of the M5000 CC Administrator application.
- To manage the M5000 CC Administrator application info bar completely, show the display (see Sheet U-346).

U-349 : STATUS MENU: PARAMETER

OBJECTIVE

- To parameter the number of statuses shown in the IVR ports load histograms before their display (see Sheet U-360).

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

To parameter the number of statuses shown in the IVR ports load histograms:

- To choose the variables to be displayed, select the **[Settings...]** command from the M5000 CC Administrator application's **[Status]** menu: the **"Status parameters"** window opens.
- Enter the number of statuses that will be shown in the IVR ports load histograms. This number has to be between 2 and 100, with a default value of 50.
- Click ***[Validate]***.

Note: For more information, refer to the broadcast frequency configuration (**{Broadcast}** tab in the "**Properties**" window see Sheet U-312).

U-350 : DISPLAY MENU: PNIA: CONFIGURING

OBJECTIVE

- Defining all the parameters required to integrate M5000 CC into a PNIA environment.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

Select the **[PNIA]** command then **[Configuration]** in the **[View]** menu of the M5000 CC Administrator application: the **"PNIA configuration"** window opens.

- Tick the option **"Use PNIA numbering plan (Inter-Armed Forces Numbering Plan)"** if the multi-site to which the M5000 CC connects is configured to use PNIA.
- In the **"Local multi-site number"** text box, enter the number of the multi-site to which M5000 CC connects. This number is determined by the management centre. Since a management centre can manage several multi-sites, you must specify this number in the M5000 CC configuration so M5000 CC can know the translation rules to use. (The translation rules file contains the rules for several multi-sites.)
- In the **"Translation rules download URL"** text box, enter the HTTP address of the subscriber number translation rules file. This file is used to synchronise the translation rules with the management centre.
  - This address must normally point to the management centre web server, to allow automatic synchronisations of translation rules. But if your M5000 CC cannot connect to the management centre (for instance, due to the presence of a restrictive firewall on your network), this URL can point to any web server on which you will manually copy the file generated by the management centre. Of course, manual and automatic M5000 CC synchronisations will always use the file copied manually: therefore, there will no longer be any guarantee that the translation rules used by M5000 CC will be up to date if you have not copied the updated file from the management centre.
  - The content of the file must respect the format of the file generated by the management centre. Since some administrators or external applications are not expected to generate such files, the format for this file is not explained here.
- Tick the option **"Synchronise translation rules automatically"** if you want M5000 CC to regularly import the latest translation rules file. The next two parameters are used to define the frequency and time of automatic synchronisations:
- In the **"Synchronisation period"** text box, enter the number of days between two successive automatic synchronisations. Manual updates do not affect the rate at which automatic synchronisations are performed.
- In the **"Synchronisation time"** text box, enter the time at which automatic synchronisation starts. If the M5000 CC Server is in maintenance mode at that time, synchronisation is postponed for a few minutes after the end of maintenance mode.
- At any time (except during the server maintenance period) you can click the **"Update translation rules"** button to manually synchronise the translation rules from the management centre.

Click **[Validate]** when all the parameters have been defined.

U-351 : DISPLAY MENU: PNIA: TRANSFORMATION RULES

OBJECTIVE

- Displaying the subscriber number translation rules currently used by M5000 CC in a PNIA environment.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

Select the **[PNIA]** command then **[Translation rules]** in the **[View]** menu of the M5000 CC Administrator application: the **"PNIA translation rules"** window opens.

This window shows the list of subscriber number translation rules currently used by M5000 CC to convert short numbers to long numbers and vice versa. It comprises two columns:

- The **"8FSZPQ"** column shows the prefix for long numbers.
- The **"XY"** column shows the prefix for short numbers.

A subscriber number is converted as follows: a long number (with 10 digits) has the format "8FSZPQMCDU", and a short number the format "XYMCDU". To translate a subscriber number, M5000 CC keeps its last four digits ("MCDU") and replaces all the others ("8FSZPQ" for long numbers and "XY" for short ones) with the corresponding prefix displayed on the list ("XY" or "8FSZPQ").

Example: if a rule "812345 - 50" exists on the "8FSZPQ - XY" list, the long number "**812345**6789" will be translated into the short number "**50**6789" (and vice versa).

This list is only displayed and cannot be modified by the administrator: the only way to modify it is to update it (manually or through automatic synchronisation) from the management centre (see SheetU-350).

This list is only displayed if M5000 CC has been configured to use the inter-armed forces numbering plan (see Sheet U-350).

U-352 : : REJECT21 MENU: "AUTOMATIC MODE", "SYSTEM OPEN" OR "SYSTEM CLOSED"

OBJECTIVE

- Applying one of the opening or closing modes for the Reject21 function (for a configuration without IVR only):
  - Automatic Mode (see step **1** in this sheet),
  - System open (see step **2** in this sheet).
  - System closed (see step **3** in this sheet),

Note: For more information about calculating the status of different Services, see 9.3.4.2.2.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

1 Automatic mode :

- To apply the automatic mode to the Reject21 function, select the **[Automatic mode]** command from the M5000 CC Administrator application's **[Reject21]** menu.

  The **"Automatic Mode"** is used when the administrator wants the decision to close the Services to be assessed by the rules he has defined. Of course, if the rule assessment does not lead to closing the services, the decision to close may come from the service manager (depending on the mode selected, see Sheet U-417).

2 System open :

- To apply the **"System open"** mode to the Reject21 function, select the **[System open]** command from the M5000 CC Administrator application's **[Reject21]** menu.

  The **"System open"** mode is used when the administrator doesn't want to close all the Services either manually or by using rules. In this case, the status of the different Services will only depend on the mode used in the M5000 CC Service Manager. Each Service manager may either close a Service he is managing, open it, or use the automatic mode that assesses the status of the Service according to the rules defined in the properties of this Service (see Sheet U-417).

3 System closed:

- To apply the **"System closed"** mode to the Reject21 function, select the **[System closed]** command from the M5000 CC Administrator application's **[Reject21]** menu.

  The **"System closed"** mode is used when the administrator wants to close all the services defined in M5000 CC. If this option is chosen, the Services will be closed whatever the mode used in the M5000 CC Service Manager (see Sheet U-417).

U-353 : REJECT21 MENU: DEFINING THE RULES

OBJECTIVE

- To define the rules for closing the Reject21 function (applicable to a configuration without IVR only):

Note: For more information about calculating the status of different Services, see § 9.3.4.2.2.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

PROCEDURE

Note: The rules defined by the administrator will be calculated on the basis of global information for the whole system.

- To access the window for determining the closure rules for the Reject21 function, select the **[Rules definition]** command from the M5000 CC Administrator application's **[Reject21]** menu. The **"Closing rules definition"** window opens and contains two boxes, ***{Time rule}*** and ***{Threshold rules}***.

***{Time rule}* box**

1 Definition of the time rule

- The set of time ranges defined for a Service is indicated in the ***{Time rule}*** part of the rule definition window.
- IF the user wants to assess the specified time rule, he must select the ***[Verify time rule]*** option. This option lust also be selected to be able to add new ranges or delete and modify he existing ones.

2 To add a range to the time rule

- To add a time range, click on ***[Add]***. The **"Choose time range"** window opens. Three types of range are possible:
  - u The user may simply specify a time range, during which the Services will be closed every day of the year. In this case, the user must check the ***[Every day]*** option, then indicate the ***{opening time}*** and the ***{closing time}*** for the Services in the corresponding fields.
  - u The user may also specify a day of the year (a public holiday, for example) during which the Services will be closed. In this case, the user must check the ***[Day of year]*** option and indicate the relevant day. Finally, the ***{opening time}*** and the ***{closing time}*** for the Services must be indicated in the corresponding fields.
  - u A day of the week may also be indicated. To do this, the user must tick the ***[Day of the week]*** option and select one of the proposed days of the week (from Monday to Sunday). Finally, the ***{opening time}*** and the ***{closing time}*** for the Services must also be indicated in the corresponding fields.

  Note: *If any of the relevant fields is not filled in by the user a message will be displayed.*

3 Delete a time range

- In the list of time ranges, select the one to be deleted and click on the ***[Delete]*** button or
- Right click and select **[Erase]** from the pop-up menu.

4 Modify a time range

- In the list of time ranges, select the one to be modified and click on the ***[Update]*** button or
- Right click and select **[Properties]** from the pop-up menu.

In both cases, the time range selection window is displayed, indicating all the properties of the time range selected. Modify the properties, then click on ***[OK]***. The new properties will be taken into account straight away.

***{Threshold rules}* box**

1 The longest call wait time

This rule is checked if the ***[Longest wait time rule]*** option is checked. The "Longest wait time" is one of the statuses that are calculated in real time (one of the properties that can be displayed (see Sheet U-348). If this value exceeds the specified closing rule, the Services will be closed immediately. Their statuses will change to open again when the longest wait time falls below the specified opening threshold. Of course, the longest wait time will be calculated on the basis of all the calls in this system.

2 Number of waiting calls

To activate this rule, the ***[Verify the number of waiting calls rule]*** option must be checked. The "Number of calls currently waiting" is one of the statuses that are calculated in real time (one of the properties that can be displayed (see Sheet U-348). If this value exceeds the specified closing rule, the Services will be closed immediately. Their statuses will change to open again when the number of calls waiting time fall below the specified opening threshold. Of course, the number of calls will be calculated over all the calls in the system.

3 The calls ratio

This rule is checked if the ***[Verify calls ratio rule]*** option is checked. The calls ratio corresponds to the number of calls per agent connected and ready (expressed as a percentage). If this value exceeds the specified closing rule, the Services will be closed immediately. Their statuses will change to open again when the calls report falls below the specified opening threshold. Of course, the number of calls and the number of agents will be calculated on the basis of all the calls in the system.

If the user indicates anything other than 0 in the ***{% agents ready}*** field, this rule will only be taken into account if the percentage of agents ready defined by the user is reached. This percentage is the ratio (expressed in %) of the number of agents ready (in the whole system) out of the total number of agents in the system (number of users defined as agents in at least one service in the M5000 CC Administrator application).

4 The agent ratio

To activate this rule, the ***[Verify the agent ratio rule]*** option must be checked. The agent ratio corresponds to the number of agents connected, ready and for whom all the extensions (both professional and personal) are free out of the number of agents connected, no matter their current activity (expressed in percentages). If this value falls below the specified closing rule, the Services will be closed immediately. Their statuses will change to open again when the agent ratio rises above the specified opening threshold. Of course, the different number of agents will be calculated on the basis of all the agents in the system.

5 The call frequency

The ***[Verify the call frequency]*** option must be checked to activate this rule. The user must not specify any thresholds expressed in calls/sec. He may choose to indicate the number of calls per X seconds, where X must be a positive integer. The number of seconds indicates the time range used to calculate the call frequency. If this frequency exceeds the specified closing rule, the Services will be closed immediately. Their statuses will change to open again when the call frequency falls below the specified opening threshold. Of course, the frequency will be calculated on the basis of all the calls sent to the system. It is important to note that the frequency will be calculated by taking into account the rejected calls (if the Reject21 is active).

Example:

The frequency is calculated every minute (60 seconds), the opening threshold is set at 10 calls and the closing threshold is set at 20 calls.

The Service will be closed if over 20 calls arrive during this time. Then, if fewer than 10 calls arrive during the next 60 seconds, the Service will open again. This threshold rule is the only one that does not depend on real time statuses and which is assessed according to the number of seconds indicated for each Service.

U-360 : USING THE COMMANDS IN THE "SUPERVISION" MENU

OBJECTIVE

- Accessing the different windows used to monitor and check information from the M5000 CC Server and the M5000 CC Media Server.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).

COMMENTS

Administrators can use their own applications to display all the information available in the M5000 CC Server and M5000 CC Media Server. This way, they have an instant overview of important information available in these applications.

They may also activate the tracking tool and define the key code from their application. This is very useful when the "automatic start-up" solution is used because the M5000 CC Server and M5000 CC Media Server applications do not have a graphical interface.

PROCEDURE

"LOG message" window

- To access the **"Server log messages"** window, select the **[Log messages]** command from the M5000 CC Administrator application's **[Monitoring]** menu.
- The administrator selects **[Log messages]** from the **[Monitoring]** menu and may choose between the M5000 CC Server application and a list of possible M5000 CC Media Server applications. The administrator may also stop processing the log messages using the **Start** (green light icon) or **Stop** (red light icon) buttons in the toolbar.

"Components connected to M5000 CC Server" window

- To access the **"Connected components"** window, select the **[Connected components]** command from the M5000 CC Administrator application's **[Monitoring]** menu.
- The **"Connected components"** window indicates the applications that are connected to the M5000 CC Server, such as M5000 CC Media Server, Statistics Builder, M5000 CC User, M5000 CC Administrator, M5000 CC Service Manager and the different e-mail manager components that appear with the associated profile name.
- This window is identical to the corresponding window displayed in the M5000 CC Server application (see Sheet U-0).

"Agents' extensions" window

- To access the **"Agents' extensions"** window, select the **[Agents' extensions]** command from the M5000 CC Administrator application's **[Monitoring]** menu.
- This window is identical to the corresponding window displayed in the M5000 CC Server application (see Sheet U-20).

"Clients' extensions" window

- To access the **"Clients' extensions"** window, select the **[Clients' extensions]** command from the M5000 CC Administrator application's **[Monitoring]** menu.
- This window is identical to the corresponding window displayed in the M5000 CC Server application (see Sheet U-21).

Runs Visualization window

- To access the **"Runs visualization: Server...."**, select the **[Runs > *Media Server name*]** command from the M5000 CC Administratorapplication's **[Monitoring]** menu.
- The list of M5000 CC Media Server for which the administrator may display Run information is available. Indeed, each Runs Visualization window is dedicated to the runs handled by a specific M5000 CC Media

Server.

- This window displays an additional information compared with the corresponding window displayed in the M5000 CC Media Server application (see Sheet U-121) :
  - **Asynchronous node is terminated** : indicates if the execution of an asynchronous node is terminated.

"Media Server status" window:

- To access the **"Media Server Status"** window, select the **[Media Server Status> *Media Server name*]** command from the M5000 CC Administrator application's menu **[Monitoring]**.
- This window displays an additional information compared with the corresponding window displayed in the M5000 CC Media Server application (see Sheet U-120) :

"IVR port load" window

- First parameter the number of statuses shown in the IVR ports load histograms before their display (see Sheet U-349).
- To display the M5000 CC Media Server IVR ports load histograms, select the **[IVRportsload > *histogram name]*]** command from the M5000 CC Administrator application's **[Monitoring]** menu then click the histogram you want to view (e.g.: Average number of ports used).

U-370 : USING THE COMMANDS IN THE "TRACKING MESSAGE" MENU

OBJECTIVE

- Accessing tracking messages from the M5000 CC Server and M5000 CC Media Servers.

OPERATOR LEVEL

- Administrator.

TOOL(S)

- PC where the M5000 CC Administrator application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized administrator (see Sheet U-310).
- You must run the **"Debug Viewer"** application before starting the tracking tool (see the beginning of this online help).

PROCEDURE

Since the M5000 CC Server and M5000 CC Media Server do not display any interface anymore when they are launched by a Windows NT Service, all the tracking messages can be viewed through the M5000 CC Administrator application. This menu is available only if the M5000 CC Administrator application is connected to a M5000 CC Server.

"Server" option

- To access the M5000 CC Server tracking messages, select the **[Server]** command from the M5000 CC Administrator application's **[Tracking message]** menu:
  - The **[Server]** option appears checked in the menu,
  - The **[Server tracking properties]** command in the same menu becomes available (not grayed out) and lets you access a list of tracking messages:
    - **[Inbound call]**,
    - **[Outbound call]**,
    - [CSTA Extensions >All the extensions,
      All the agent extensions,
      ....],
    - **[Global CSTA tracking]**,
    - **[Status message]**.

"Media Servers" option

- To access a M5000 CC Media Server's tracking messages, select the **[Media Server > *Media Server Names*]** command from the M5000 CC Administrator application's **[Trackingmessages]** menu, then one of the Media Servers for which you want to activate the traces.

U-400 : USING THE MENUS IN THE M5000 CC SERVICE MANAGER APPLICATION

OBJECTIVE

- Defining the main tasks of a service manager or team manager, by specifying the presentation sheets for these tasks (Sheets U-400 to U-405).
- To present all the application's menu commands, specifying transfers or links to procedures associated with these commands.

OPERATOR LEVEL

- Service Manager or Team Manager.

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

Note: The M5000 CC Server application must be launched before any other application ; there is an automatic startup of the Server, should you forget to launch it.

- Commission the M5000 CC Service Manager application (see Sheet C-400).

PROCEDURE

Defining the main tasks of a service manager or team manager:

- Basic and start-up operations for the M5000 CC Service Manager application (see Sheet U-401)
- Configure a service (see Sheet U-402).
- Monitor a Service (see Sheet U-403).
- Filter information (see Sheet U-404).
- Script management guidelines (see Sheet U-405).

Description of the M5000 CC Service Manager application menus:

Note: For a "Team manager", the list of menus or commands in certain menus displayed is reduced compared to the "Service manager". The Tableau 10.1 specifies the applicability of the menu commands according to the operator level.

- The general M5000 CC Service Manager application window contains the following menus (see Figure 10.42 and Tableau 10.1):

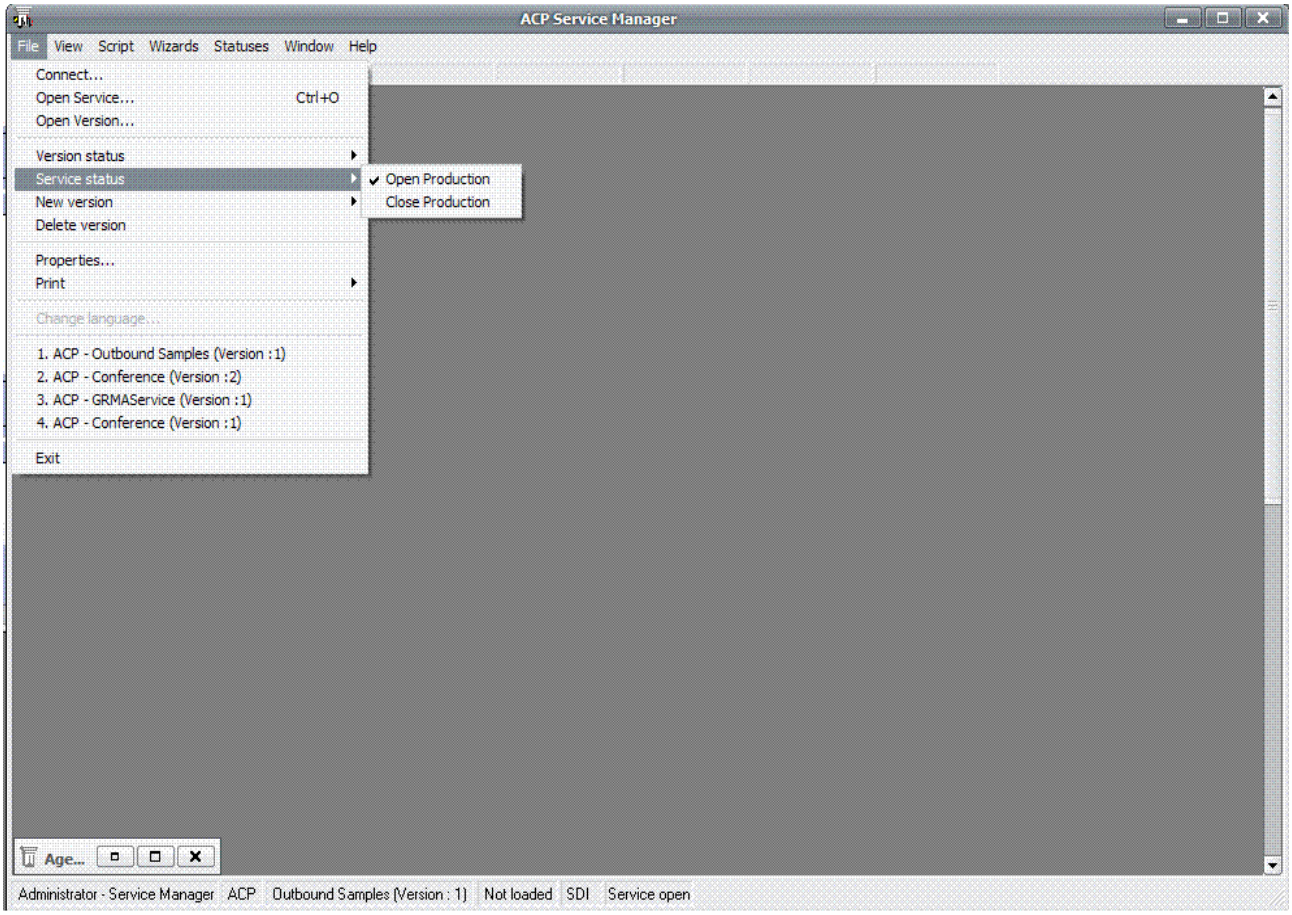


Figure 10.42 OVERVIEW OF THE M5000 CC SERVICE MANAGER APPLICATION, AS SEEN BY A "SERVICE MANAGER"

- Refer to the corresponding U sheets when you need more information on a particular command:

Table12:

MENUS AND COMMANDS	FUNCTION OR COMMENT	MANAGER DEPARTMENT	TEAM MANAGER	TEAM SUP.	SHEET NO.
File :	Access to general commands	X	X		
Connect	Connect the M5000 CC Service Manager application to the M5000 CC Server then identify yourself as a Service manager or authorized team supervisor.	X	X	X	U-410
Open service	Opens a Service.	X	X	X	U-411
Open version	Opens a Service version	X	X	X	U-412
Version Status	Attributes the "Beta" or "Production" Status to the current Service version	X			U-413
Service status	To define one of the possible statuses for the current Service.	X			U-414
New Version	Creates an "empty" Service version or one "based on another version"	X			U-415
Delete Version	Deletes the current version	X			U-416
Properties	Configures all the general M5000 CC Service Manager properties	X			U-417
Print	Prints all the information about the configuration of a Service.	X	X	X	U-418
Change Language	Changes the M5000 CC Service Manager application language	X	X	X	U-419
Exit	Closes the M5000 CC Service Manager application.	X	X	X	U-420

Table13:

MENUS AND COMMANDS	FUNCTION OR COMMENT	MANAGER DEPARTMENT	TEAM MANAGER	TEAM SUP.	SHEET NO.
View :	To access the display commands	X	X		
Outbound call list	To Format/Import/Add calls to the Outbound call lists	X			U-430
Service number range	To manage the DNIS ranges and associate them with "Production" and "Beta" versions	X			U-431

Table13:

Mail-box	To manage the "Production" and "Beta" status of each inbox defined by the administrator.	**X**			U-432
Personal messages	To create/edit/delete a personal (text) message and display a message in a "programmed" or "immediate" manner.	**X**	**X**		U-433
Agents	To assign (unassign) agents to (from) a Server or team. To select an agent whose conversations will be recorded. To allow/prohibit personal messages on wall displays	**X**	**X**		U-434
User Profiles	To manage user profiles	**X**			U-435
Languages	Adding/deleting some languages used by a Service. Defining the level of knowledge for each language of an agent.	**X**	**X**		U-436
Skills	To add/delete a skill used by a Service. To define the level of knowledge for each ability of an agent.	**X**	**X**		U-437

Table14:

MENUS AND COMMANDS	FUNCTION OR COMMENT	MANAGER DEPARTMENT	TEAM MANAGER	TEAM SUP.	SHEET NO.
Teams	To add/delete a team to or from a Service version. To enable/remove the team supervision for an agent. To allow/prohibit personal messages on wall displays	**X**	**X**		U-438
Add-on Modules	(Reserved)	**X**			
Sounds	To manage the system sounds (create, play, modify	**X**			U-440
Tree structures	To manage the trees and nodes of a script	**X**			U-441
Variables	To manage the "global" variables of a script (add, edit properties)	**X**			U-442
Filters	To manage the filters for a Service (add, edit, delete).	**X**			U-443
Always on top.	To reduce the application to an "Always on top" bar (see example Figure 10.62 in Sheet U-480)	**X**	**X**		
Options	Defines the MDI/SDI display mode of the M5000 CC Service Manager application	**X**	**X**		U-443
Scripts :	Access to script management commands	**X**			
"Load" or "Unload"	To load/unload the script of the current Service version.	**X**			U-450
"Compile" or "Save"	To compile then save the script of the current Service version	**X**			U-451

Table15:

MENUS AND COMMANDS	FUNCTION OR COMMENT	MANAGER DEPARTMENT	TEAM MANAGER	TEAM SUP.	SHEET NO.
Update clients	To update the client applications and test the script	**X**			U-452
Wizards:	To display all the wizards which have been created and are being used (after the initial installation, only the "SimpleRout" wizard appears in the menu)	**X**			

Table15:

SimpleRout	To create the full series of steps to run a "SimpleRout" wizard	**X**			U-460
Status :	Access to the different status management (see general information about the **[Status]** menu below this table.	**X**	**X**	**X**	
Agents	Supervising agents	**X**	**X**	**X**	U-470
Calls	To supervise the calls	**X**	**X**	**X**	U-471
E-mails	To monitor e-mails	**X**	**X**	**X**	U-472
Extensions	To supervise the extensions.	**X**	**X**	**X**	U-473
Web sessions	Supervise the Web sessions	**X**	**X**	**X**	U-474
Quality of Service	Supervise the quality of service of voice calls.	**X**	**X**	**X**	U-475
E-mail quality of Service	To monitor E-mail quality of Service	**X**	**X**	**X**	U-476
Waiting time	To monitor waiting times	**X**	**X**	**X**	U-477
Waiting time for e-mails	To monitor the e-mail processing times.	**X**	**X**	**X**	U-478
Service status	To monitor the Service status.	**X**	**X**	**X**	U-479
Display	Info bar management in the M5000 CC Service Manager application	**X**	**X**	**X**	U-480
Alarm	Displays information about setting off alarms in the services.	**X**	**X**	**X**	U-481

Table16:

MENUS AND COMMANDS	FUNCTION OR COMMENT	MANAGER DEPARTMENT	TEAM MANAGER	TEAM SUP.	SHEET NO.
Wall Display	To select the information transmitted to the wall displays.	**X**			U-482
Display properties	Management of the information bar for the statuses displayed on the M5000 CC Service Manager, M5000 CC User and/or M5000 CC Wall Display applications.	**X**			U-483
Parameter	To configure the sampling and status information display parameters.	**X**			U-484
&Configuration statuses of the day	To configure the day statuses available for agents.	**X**			U-485

Table16:

Window :	Access to commands which describe (cascade horizontal) and activate the windows that are open on the screen:	**X**	**X**	**X**	
?	Access to the "A bout" application and the Mitel 5000 Contact Center on-line help	**X**	**X**	**X**	

Tableau 10.1 LIST OF APPLICATION MENU COMMANDS M5000 CC SERVICE MANAGER

General information about the M5000 CC Service Manager application [Statuses]

Each service manager may display in real time the statuses for all the Services he manages as a histogram or camembert. This applies to both local and remote Services In addition, these statuses may be filtered using the filters defined for each Service.

When the service manager / team manager or supervisor logs out to let another manager log in, all open histograms and pie charts disappear. If this same Service manager / team manager or supervisor logs back into the Service later, all the status windows that were open when he logged out are automatically displayed in the same position and in the same size as they were when he logged out. The same Services and filters as before are used. Therefore, the Service manager / team manager or supervisor does not need to re-open or reset the same histograms and pie charts one by one to a desired location. Of course, he may close some and open new ones.

The **[Service Status]** option is only used if the Reject21 is active.

U-401 : BASIC OPERATIONS AND STARTING THE M5000 CC SERVICE MANAGER

OBJECTIVE

- To present the main tasks that a Service manager or team manager or supervisor must carry out in a certain order when the application is started.
- To present the basic operations of a Service manager or team manager or supervisor with links to the sheets concerned.

OPERATOR LEVEL

- Service manager, or team manager or supervisor.

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- Commission the M5000 CC Service Manager application (see Sheet C-400).
- The M5000 CC Server application must also be activated (see Sheet C-0).

PROCEDURE

To start using the M5000 CC Service Manager application correctly, carry out the following steps:

- Change the M5000 CC Service Manager application language (see Sheet U-419),
- Connect to a M5000 CC Server and identify yourself as a Service manager or authorized team supervisor (see Sheet U-410),
- Open a Service (see Sheet U-411),
- Open a Service version (see Sheet U-412),
- Print the configuration of a Service (see Sheet U-418),

U-402 : CONFIGURING A SERVICE

OBJECTIVE

- To present the tasks that a Service manager (or manager/team manager or supervisor for certain operations) must carry out to configure a Service).

OPERATOR LEVEL

- Service manager, or team manager or supervisor.

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service or team manager, or as an authorized team manager or supervisor (see Sheet U-410).

PROCEDURE

Carry out the following tasks to configure a Service:

- Service version management:
  - Create a new Service version (for Service managers only) (see Sheet U-415),
  - Open a Service version (see Sheet U-412),
  - Status of a Service version (for Service managers only) (see Sheet U-413),
  - Delete the current version (for Service managers only) (see Sheet U-416),
- Properties common to both inbound and outbound Services
  - Assign / unassign agents to / from a Service (see Sheet U-434),
  - Languages used by a Service and language level of each agent (see Sheet U-436) : the Service manager may add and remove a language as well as modify the language level of agents in his Service; the team supervisor may only modify the language level of the agents in his team.
  - Agent skills (see Sheet U-437): the Service manager may add and remove a skill as well as modify the skill level of agents in his Service; the team manager may only modify the skill level of the agents in his team.
  - Agent teams (see Sheet U-438) : only the Service manage may add, delete, and distribute agents to the different Service teams. The team manager may only view the agents in his own team.
  - Break time (for Service managers only) (see Sheet U-417),
  - Display mode (see Sheet U-443),
  - Configuring the agents' day statuses (for Service managers only) (see Sheet U-485),
  - Defining creation rights, deleting and viewing service team managers.
- Inbound Services properties:
  - Service number range (for Service managers only) (see Sheet U-431),
  - Voice Service quality threshold (for Service managers only) (see Sheet U-417),
  - Service quality threshold for e-mails (for Service managers only) (see Sheet U-417),
  - Record agent's phone conversation (see Sheet U-434),
  - Filters (for Service managers only) (see Sheet U-443),
  - The number of consecutive "No Answer" before logout (for Service managers only) (see Sheet U-417),
  - Maximum agent "Not Ready" (for Service managers only) (see Sheet U-417),
  - Maximum agent PCP (Post-Call Processing) (for Service managers only) (see Sheet U-417),
  - Define the closing rules for a Service (Reject21 - for Service managers only) (see Sheet U-417),
- Outbound Service properties (for Service managers only):
  - Open / close an outbound Service (see Sheet U-414),
  - Set waiting times before next retry (see Sheet U-417),
  - List of outbound calls (see Sheet U-430),
- Conference Service properties (for the Conference Bridge function only):

- Associating a DNIS with each language defined in the service (see Sheet U-436)
- The content of conference e-mails can be personalised in each language (see Sheet U-436).

U-403 : SERVICE SUPERVISION

OBJECTIVE

- Presenting the tasks that a Service or team manager or team manager or supervisor must perform to monitor a Service.

OPERATOR LEVEL

- Service manager, or team manager or supervisor.

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log on and identify yourself as Service or team manager, or as an authorized team manager or supervisor (see Sheet U-410).

PROCEDURE

Carry out the following tasks to monitor a Service:

- Display the status properties in the information bar (see Sheet U-483),
- Display the status properties on the wall display (see Sheet U-483).
- Display the agent extensions (see Sheet U-470).
- Monitor dynamically the status information (see the second part of this Sheet),
- Personal messages (see Sheet U-433),
- The Reject 21 (see Sheet U-414),
- Filter the statuses in real time and the statistical reports (see Sheets U-404, U-443 and U-470),

To monitor status information dynamically:

The Service manager, like the team manager or supervisor can follow the dynamic evolution of a Service by monitoring the status information. For this he must click one of the following elements in the M5000 CC Service Manager application's **[Status]**menu:

- Agents (see Sheet U-470),
- Calls (see Sheet U-471),
- E-mails (see Sheet U-472),
- Extensions (see Sheet U-473),
- E-mail processing times (see Sheet U-478),
- Web sessions (see Sheet U-474).
- Quality of Service:
  - Voice calls (see Sheet U-475) and
  - E-mails (see Sheet U-476),
- Waiting time (see Sheet U-477),
- Service Status (Reject21) (see Sheet U-479).

Most of these elements can be viewed in pie charts or in histograms. Information is collected as snapshots of the system parameters, taken at regular intervals (by default every 5 seconds).

The Service or team manager / team supervisor may modify the status-related data collection parameters (see Sheet U-484):

- the number of samples displayed in the histograms,
- the display of status values in the diagrams,
- the display of different Not Ready or "PCP" statuses.

He can also retrieve random values for each histogram and pie chart (Demo mode) (see Sheet U-30). These values do not correspond to the real behavior of the system: they are only used for demonstration purposes.

The Service manager may configure the information that will be visible in the day statuses of an agent and also authorize the agents to view their status (see Sheet U-485).

U-404 : FILTERING INFORMATION

OBJECTIVE

- Information filtering management.

OPERATOR LEVEL

- Service Manager

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized Service manager (see Sheet U-410).

PROCEDURE

The Service manager can use real time statuses to monitor the state of his contact center. These provide regular information on the state of the Service at a given moment. This real time information can be classed in two categories:

- information about all agents assigned to the Service (for example, number of ready agents, number of free extensions)
- information about calls / e-mails (for example, number of calls waiting, number of e-mails waiting, average call waiting time before transfer)

There are however numerous situations where the Service manager is not interested in all the calls handled by the Service or all agents, but a sub-group of calls or agents (for example: as Service manager I am interested in the agents in team A and the calls they handle). The Service manager obtains this information by defining filters. With M5000 CC a sub-group of calls and agents can be defined using a filter. Once these two sub-groups have been defined, M5000 CC evaluates all the information on these two sub-groups in real time just like for the whole Service.

If you do not define a filter (see note), the service-status related information that may be displayed in the M5000 CC Service Manager's information bars (see Sheet U-483), in the M5000 CC User application (see Sheet U-346), wall displays (see Sheet U-483) will apply to all the calls and agents in the Service. The purpose of the filter is to refine the search for information in order to pin down potential trouble as quickly as possible. The Service manager and the team supervisor have access to well-targeted information in order to supervise the contact centre agents.

Note: Service status information which is available on the info bar of the client applications; it is global to all calls and agents of the Service and can be insufficient. This information cannot be applied to specific categories of calls or agents.
The purpose of the filter is to solve this problem.
A filter is a set of conditions that calls and/or agents have to meet to be taken into account in the calculation of a status information relating to a Service.

The information may also be displayed in the statuses in real time (see § 8.3.7.2.2) and backed up periodically in the statistics (see appendix in § 12.2.2). At the end of the call, the call statistics and the filters through which the call has passed can be saved. This enables the call statistics to be consolidated on the basis of criteria defined by the Service manager.

For example, within a multilingual Service, it is not possible to show status information per language without using a filter.

For more information on the filers, refer to the following sheets or chapters:

- To define a filter for the display properties (for Service managers only) (see Sheet U-443),
- To configure the agent extension display window (see Sheet U-470),
- Filtered reports (see appendix in § 12.2.3).

U-405 : SCRIPT MANAGEMENT GUIDELINES

OBJECTIVE

- To present the series of tasks that a Service manager must carry out to manage scripts.

OPERATOR LEVEL

- Service Manager

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized Service manager (see Sheet U-410).

PROCEDURE

Scripts are managed using the M5000 CC Service Manager application. This section describes how the Service manager manages the script of a particular Service version.

Service managers follow these successive steps:

1 Load the script (see Sheet U-450),

0 Incoming services: manage the sounds (see § 8.5.7 and Sheet U-440),

0 Build the trees:

- Define the global variables (see Sheet U-442),
- Define new trees (see Sheet U-441) :
  - u Define tree arguments
  - u Define local variables
  - u Add nodes,
- Import trees from other Service versions (see Sheet U-441),

0 Compile and save the script (see Sheet U-451),

0 Set the Service version to "Beta" mode (see Sheet U-413),

0 Update the client applications and testing the script (see Sheet U-452),

0 Set the Service version to "Production" mode (see Sheet U-413),

0 Update the client applications again (see Sheet U-452).

U-410 : FILE MENU: CONNECT

OBJECTIVE

- Connecting the M5000 CC Service Manager application to the M5000 CC Server then
- Log in as Service manager, or authorized team manager or supervisor.

OPERATOR LEVEL

- Service Manager or Team Supervisor.

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- Commission the M5000 CC Service Manager application (see Sheet C-400).
- The M5000 CC Server application must also be activated (see Sheet C-0).

PROCEDURE

Connection

Note: The **[File]** menu keeps and lists the names of the "Versions.CFG" files of the last four connections. The opportunity provided by this is used in the following second method.

Two connection methods are available:

1 Select **[Connect]** from the M5000 CC Service Manager application's **[File]** menu to open the ***"Select a Server database"*** window:

- Select the file named "Versions.CFG" corresponding to a running Server.
- Click ***[Open]*** to connect.

0 In the M5000 CC Service Manager application's **[File]** menu, select the "Versions.CFG" file which corresponds to the active Server from the list of recently accessed files (see note above).

Log in as Service manager or authorized team supervisor.

- You must be defined as Manager in at least one Service or supervisor in at least one team.
- In the **Login** window, enter your user identifier or your alias number in the ***{User}*** dialogue box.
- Enter the password in the ***Password"*** field.

U-411 : FILE MENU: OPEN SERVICE

OBJECTIVE

- Open service

OPERATOR LEVEL

- Service Manager or Team Supervisor.

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service manager or authorized team supervisor (see Sheet U-410).

PROCEDURE

To open a Service:

- Select the **[Open a Service...]** command from the M5000 CC Service Manager application's **[File]** menu to open the **"Open Service"** window:
- In the **"Open Service" :** window:
  - Click on the name of the Service you want to open then click on ***[OK]*** or double click on the name of the Service (this produces the same result).
- If you do not want to open a Service version, click ***[Cancel]*** in the **"Open version"** window that has just been opened, or refer to Sheet U-412.

U-412 : FILE MENU: OPEN VERSION

OBJECTIVE

- To open a Service version

OPERATOR LEVEL

- Service Manager or Team Supervisor.

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service manager or authorized team supervisor (see Sheet U-410).

PROCEDURE

There are two ways to open a Service version:

1 **To open a version of the current Service normally:**

- Select the **[Openversion]** command from the **[File]** menu of the M5000 CC Service Manager application.
- In the window that opens, click on the name of the Service version you want to open then click on ***[OK]*** or double click on the name of the Service version (this produces the same result).

2 **To quickly open a Service version:**

- From the **[File]** menu, select one of the Service versions which were opened recently and are still listed in the menu. They appear in the menu as the Service name followed by the version number between brackets.
- Log in as Service manager or authorized team supervisor (see Sheet U-410).

U-413 : FILE MENU: VERSION STATUS

OBJECTIVE

- To attribute the **"Beta"** or **"**Production" Status to the current Service version.

OPERATOR LEVEL

- Service Manager

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized Service manager (see Sheet U-410).
- Required conditions before performing this step:
  - The script of the current version has to be compiled (see Sheet U-451)..
  - The status of a Service version has to match:
    - u the DNIS status for the calls (see Sheet U-431)
    - u the e-mail box status for the e-mails (see Sheet U-432).

PROCEDURE

1 To attribute the "Beta" or "Production" Status to the current Service version :

- Select the **[Versions status > Beta]** command from the M5000 CC Service Manager application's **[File]** menu.
- A warning message is displayed if the script is not loaded: click ***[OK]*** to load it.

2 To attribute the "Production" Status to the current Service version :

- Select the **[Versions status > "Production"]** command from the M5000 CC Service Manager application's **[File]** menu.
- A warning message is displayed if the script is not loaded: click ***[OK]*** to load it.

U-414 : FILE MENU: SERVICE STATUS

OBJECTIVE

- To define one of the three possible statuses ("Automatic mode", ("Open Service" or "Close Service") for the current Service.

OPERATOR LEVEL

- Service Manager

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service manager or authorized team supervisor (see Sheet U-410).
- The Reject21 functionality must be active (see Sheet U-417).

Note: Like the administrator, the Service manager may also define the status of the Service for which he is responsible. The Service status may only be defined in "without IVR" configuration and with the Reject 21 functionality active.

PROCEDURE

To define one of the three possible statuses ("Automatic Mode", "Open Service" or "Close Service") for the current Service, select one of the three options in the **[Service Status]** command from the M5000 CC Service Manager application's **[File]** menu.

1 [Automatic mode] :

- Select the **[Service Status > Automatic Mode]** command from the M5000 CC Service Manager application's **[File]** menu. The **[Automatic Mode]** option is checked in the menu.

  The "Automatic Mode" is used when the administrator wants the decision to close the Service to be assessed by the rules he has defined. Of course, of the rule assessment does not lead them to close the Services, the decision to close may come from the Service manager (depending on the mode selected).

2 [Open Service] :

- Select the **[Service Status>Open Service]** command from the M5000 CC Service Manager application's **[File]** menu. The **[Open Service]** option is checked in the menu.

  This "Open Service" command is used when the Service manager does not want to close his Service either manually, or to use some rules. In this case, the status of the Service will only depend on the mode used in the M5000 CC Administrator application. The administrator may then either close all the Services, leave them open, or use the automatic mode which assesses the status of the Services according to the rules defined in the M5000 CC Administrator (see Sheet U-352).

3 [Close Service] :

- Select the **[Service Status>Close Service]** command from the M5000 CC Service Manager application's **[File]** menu. The **[Close Service]** option is checked in the menu.

  If this option is chosen, the Service will be closed no matter the mode used in the M5000 CC Administrator application (see Sheet U-352).

Note: *For more information about calculating the status of different Services, see 9.3.4.2.2.*

COMMENTS

General information on the stats bar of the Service Manager application

If the Reject 21 is active for the Service (at least one inbound call put has been associated with the Service by the administrator, see Sheet U-321), a new box appears in the Service status bar. This box indicates the real status of the Service. If the status is open, information of type **"x % open"** is indicated, and if the status is closed, information of type **"x % closure (Source of the closure)"** is indicated.

- x represents a number between 0 and 100 which corresponds to the ratio (in %) of the number of inbound call pits in the required state to the total number of inbound call pits. When we talk about inbound call pits, we mean the inbound call pits associated with the Service in question.
- The **source of the closure** may have four values:
  - **"Administrator"** : the closure comes from the M5000 CC Administrator application (rule applied or

manual mode closed).

- **"Service Manager"** : The closure comes from the M5000 CC Service Manager (rule performed or manual mode closed)
- **No Production version** : the closure is due to the fact that there is no version in "Production" for the Service
- **"Minimum closing time"** : after the automatic mode, the Service which was closed must be reopened. However, the Service will remain closed if this other Service has not been closed for over 10 sec.

U-415 : FILE MENU: NEW VERSION

OBJECTIVE

- To create an "empty" Service version or one "based on another version"

OPERATOR LEVEL

- Service Manager

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized Service manager (see Sheet U-410).

PROCEDURE

There are two ways to create a Service version:

1 **To create a new empty Service version :**

- Select **[New version > Empty version (Ctrl+N)]** from the M5000 CC Service Manager application's **[File]** menu.
- If a message box appears, telling you that a script already exists for that version, click ***OK*** to erase it.
- A message box appears, displaying the number of newly created Service versions. click ***[OK]***.

2 **To create a new Service version based on the current version**

- Select the **[New version > Save as new version]** command from the M5000 CC Service Manager application's **[File]** menu.
- If the script for the current version is not currently loaded, a warning message box appears: click ***[OK]***,
- A message box appears, displaying the number of the newly created version. click ***[OK]***.
- The new version is created as an exact copy of the current version. Further modifications of the copy do not change the original Service version.

U-416 : FILE MENU: DELETE VERSION

OBJECTIVE

- To delete the current version

OPERATOR LEVEL

- Service Manager

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized Service manager (see Sheet U-410).

PROCEDURE

To delete the current version :

- Select the **[Delete the version]** command from the **[File]** menu of the M5000 CC Service Manager application.
- Two successive warning message boxes appear: click ***[OK]***,

U-417 : FILE MENU: PROPERTIES

OBJECTIVE

- To parameter all the general M5000 CC Service Manager properties

OPERATOR LEVEL

- Service Manager

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized Service manager (see Sheet U-410).

PROCEDURE

To manage the M5000 CC Service Manager system properties:

- Select the **[Properties]** command from the M5000 CC Service Manager application's **[File]** menu to open the **"Properties"** window: Click each tab's label to access the fields for parametering the different system properties, then click ***[Validate]*** once all the parameters have been configured:

1 {Server} tab

The following (non-modifiable) information is displayed in the M5000 CC Service Manager **{Server}** properties tab:

- The ***{Name}*** of the M5000 CC Server.
- The name of the computer where the M5000 CC Server is ***{Loaded on :}***.
- The ***{Root directory}*** (M5000 CC File Structure) location.

2 {Service} tab:

- **{Service properties}** (Inbound and outbound services) box:

  The following (non-modifiable) information is displayed in this box:

  - The ***{name} of the Service*** to which the Service manager is connected.
  - The ***{Type} of Service.*** inbound or outbound.
  - The version number of the ***{Beta Version}*** (if there is no "Beta" version in the Service, the value is "none").
  - The version number of the ***{"Production" Version}*** (if there is no "Production" version in the Service, the value is "none").

- **{Service quality}** (Inbound services only) box:

  To parameter the voice quality of Service threshold

  In the {Quality of voice service threshold} text box, enter the maximum number of seconds a caller should ever have to wait before being linked to an agent. The wait time (see Sheet U-477) and quality of service (see Sheet U-475) can be supervised.

  Note: *This threshold is compared to a dynamic temporal value associated with each call: the wait time. This function is used to modify the value of a global variable. Indeed, some nodes can reset this value during execution.*

  To parameter the voice service quality threshold for the inbound Services:

  - In the ***{Quality of voice service threshold}*** text box, enter the maximum number of seconds a caller should ever have to wait before being linked to an agent.

  To parameter the e-mail quality of Service threshold

  The e-mail quality of Service threshold is a delay (a combination of days, hours, minutes and seconds) that represents a "reasonable" duration before a customer's e-mail is treated. The processing time (see Sheet U-478) and quality of service (see Sheet U-476) can be supervised.

  To set the voice service quality threshold for the inbound Services:

  - In the ***{E-mails quality of Service threshold}*** section, part, enter the maximum number of days, hours, minutes and seconds not to be exceeded for the the processing duration to be considered as reasonable.

The Service manager can set the value of the e-mail quality of Service threshold for inbound Services only. The default value is 20 hours.

The threshold is used to compute the e-mail quality of Service (see § 1.4) as the percentage of e-mails treated before reaching the defined threshold. For example, if the e-mail threshold value is 20 hours, if 7 e-mails are treated within 20 hours and 3 e20mails are treated later, then the computed values will be:

- The percentage of e-mails treated before reaching the threshold: 70% (this is the e-mail quality of Service)
- The percentage of e-mails processed after the threshold has been reached: 30 %.

- **{Recordings}** (Inbound services only) box:

Note: *To record agents' telephone calls, you must first assign them as recorded agents using the **[Agents]** command in the **[View]** menu (see Sheet U-434).*

To record agents, you must specify the e-mail address to which the agents recordings are sent. The file path can be specified in one of the following ways:

- Enter the complete e-mail address directly in the ***{Send the agent recordings}*** textbox or
- Click the ***[A...]*** button then in the **"Address book"** which opens:
  - Select the file using the dialog box.
  - Select, from the drop-down list, an existing String-type variable containing the path at run-time.
- Tick the option ***[Include voice message as link]*** to use a link instead of attaching the file to the e-mail.

- **{Status computing}** box:
  - Enter the duration in seconds in the ***{Status validity period}*** field.
- **{Name resolution }** box:
  - In this box it is possible to see whether or not name resolution via directories is active (view only).

3 {Version} tab:

The following information is displayed in the **{Version}** :Onglet

- The ***{Number}*** (non-modifiable)
- The ***{Description}*** of the version: the name of the user who created the version and the time of creation.
- The version file name (file.ide) (non-modifiable).
- The ***[Show agent script before transferring call]*** option: check this box if you want the agent to be able to see the sheet before speaking to the client on-mine. For example, this may enable him to find out why the client is calling.
- ***[Automatic save of script execution*** option:. check this box if you want the last window shown to the agent to be hidden. This last window asks the agent to confirm that the script execution is complete. This option is often used in association with the automatic PCP so that the agents do not forget to return to "Ready" status.
- For an incoming service, the ***{ CRM record Pop-up}*** box contains a text which indicates that the CRM record is managed through the CallTransfer node, for calls, and DistributeEMail node for e-mails. These nodes are described in **Chapter 13 : Development appendix**.
- For an outgoing service, the ***[Start user tree in Portal]*** option can be selected to require the script tree(s) of User type to be executed and displayed in the web portal used by the agent. If this option is checked, the User Interface nodes appear in place of a CRM card: the ***{CRM pop-up card}*** configuration box is therefore not shown.
- For an outgoing service, the ***{CRM pop-up card}*** box is used to define the URL of the sheet to be displayed when an outgoing call is presented to an agent. It is only visible if the ***[Start user tree in Portal]*** option is not selected.
- In the ***{CRM record (URL) address}***, enter the URL to be used to start the CRM record. You can select some global variables by pressing **<F2>** and selecting the variable. When the node is executed, each variable will be replaced by its value when the CRM record is presented.
- In the ***{Allow CRM record to be opened by agents}*** checkbox, set whether the agent can reopen the CRM record after closing it.

*Note: For a CRM record to be displayed by the portal when a call is presented, the **{CRM record (URL) address}** text box should not be empty. This text box contains variables only; the variables should not be empty the character string.*

The validity of the URL entered is not checked upon compilation: what is checked is only that the variables used actually exist.

For more information about the CRM card display function, see 8.8 : CRM sheet :.

4 {Agents} tab:

The properties defined in the **{Agents}** tab relate to agent activity in particular.

- **{Break duration}** (Inbound and outbound services) box:

  The break time for the agent between two calls: ***{Break time for the current Service}*** field (in seconds, the duration is a positive number). The agent may interrupt this break time (by changing to "Ready" or "Not Ready" status) but cannot extend it.

- **{Automatic activity change} box**(Inbound and outbound services):

  The Service manager may indicate the following durations:

  u ***{Define a maximum agent "Not Ready" duration}*** (in seconds) field and box. The agent's status changes automatically to “Ready” or “Disconnected” when this duration is reached. This property must not be defined by obligation. In this case, an agent's activity will not be modified automatically.

  u ***{Define a maximum "PCP" call duration}*** (in seconds) field and box. When this duration is reached, the agent's status changes automatically to “Ready” (or “Disconnected”) and the call processing operation is terminated (or the call will move to an off-line script). The agent may then process a new incoming or outgoing call (if its status is “Ready”). This property must not be defined by obligation. In this case, an agent's activity will not be modified automatically.

  Inbound services only:

  u ***Number of consecutive 'No Answer' before automatic logout*** field: this number indicates the consecutive number of times a call may be presented to an agent before the agent processes it. The agent will be disconnected automatically if this value is reached. The disconnection time will be saved in the corresponding statistical report (see § 12.2.3.18).

- **{Nuisance calls}** box:

  This box contains the **{Allow nuisance call identification by agents}** checkbox which, when ticked, allows the agents of an incoming service to qualify the calls they receive as nuisance calls or non-nuisance calls. When this service option is activated and the call is transferred with the agent script (see Sheet U-460 "TransferCall" node in Section 13.2.2.7), the web interface displays an additional button enabling the agent to toggle call qualification between “nuisance” and “non-nuisance”.

  This button will only be made visible in the portal. (The information will only be available in Web Services).

  Moreover, the button will be displayed in the status corresponding to the value of the intrinsic variable "CallQualification" on the call in progress. Thus, if a first agent identifies a call as a "nuisance call" (thereby setting the global variable "CallQualification" to 1, see global variable "CallQualification" (in Section 13.3.2.6)) then forwards it to a colleague, the second agent receives the call and the button on his or her interface will automatically appear in the “nuisance” status. This agent can modify the value of this variable by clicking the button.

5 {Closing rules} tab:

{Time rule} box

- Definition of the time rule

  u The set of time ranges defined for a Service is indicated in the **{Time rule}** part of the rule definition window.

  u IF the user wants to assess the specified time rule, he must select the ***[Verify time rule]*** option. This option lust also be selected to be able to add new ranges or delete and modify he existing ones.

- To add a range to the time rule

  u To add a time range, click on ***[Add]***. The **"Choose time range"** window opens. Three types of range are possible:

  • The user may simply specify a time range, during which the Services will be closed every day of the year. In this case, the user must check the ***[Every day]*** option, then indicate the ***{opening time}*** and the ***{closing time}*** for the Services in the corresponding fields.

  • The user may also specify a day of the year (a public holiday, for example) during which the Services will be closed. In this case, the user must tick the ***[Day of year]*** option and indicate the relevant day. Finally, the ***{opening time}*** and the ***{closing time}*** for the Services must be

indicated in the corresponding fields.

- A day of the week may also be indicated. To do this, the user must tick the ***[Day of the week]*** option and select one of the proposed days of the week (from Monday to Sunday). Finally, the ***{opening time}*** and the ***{closing time}*** for the Services must also be indicated in the corresponding fields.

Note: *If any of the relevant fields is not filled in by the user a message will be displayed.*

- Delete a time range
  - In the list of time ranges, select the one to be deleted and click on the ***[Delete]*** button or
  - Right click and select **[Erase]** from the pop-up menu.
- Modify a time range
  - In the list of time ranges, select the one to be modified and click on the ***[Update]*** button or
  - Right click and select **[Properties]** from the pop-up menu.

  In both cases, the time range selection window is displayed, indicating all the properties of the time range selected. Modify the properties, then click on ***[OK]***. The new properties will be taken into account straight away.

{Threshold rules} box

- The longest call wait time

  This rule is checked if the ***[Longest wait time rule]*** option is checked. The "Longest wait time" is one of the statuses that are calculated in real time (one of the properties that can be displayed (see Sheet U-483). If this value exceeds the specified closing rule, the Services will be closed immediately. Its status will change to open again when the longest wait time falls below the specified opening threshold. Of course, the longest wait time only concerns the calls sent to the Service.
- Number of waiting calls

  To activate this rule, the ***[Verify the number of waiting calls rule]*** option must be checked. The "Number of calls currently waiting" is one of the statuses that are calculated in real time (one of the properties that can be displayed (see Sheet U-483). If this value exceeds the specified closing rule, the Services will be closed immediately. Their statuses will change to open again when the number of calls waiting time fall below the specified opening threshold. Of course, the number of calls waiting will be calculated on the basis of the calls sent to the Service.
- The calls ratio

  This rule is checked if the ***[Verify calls ratio rule]*** option is checked. The calls ratio corresponds to the number of calls per agent connected and ready (expressed as a percentage). If this value exceeds the specified closing rule, the Services will be closed immediately. Its status will change to open again when the calls ratio falls below the specified opening threshold. Of course, the number of calls and the number of agents will be calculated on the basis of the Service.

  If the user indicates anything other than 0 in the ***{% agents ready}*** field, this rule will only be taken into account if the percentage of agents ready defined by the user is reached. This percentage is the ratio (expressed as a %) of the number of agents ready, assigned to the Service out of the total number of agents assigned to the Service.

  Example:

  A Service is assigned 10 agents. In the case indicated in the image above: while 3 agents assigned to this Service are not connected, the Service will remain open even if the 60% is reached for the call ratio. If more agents assigned to the Service connect, the rule will be verified normally.
- The agent ratio

  To activate this rule, the ***[Verify the agent ratio rule]*** option must be checked. The agent ratio corresponds to the number of agents available (according to the distribution algorithm chosen for the service, see the “Distribution” tab) on the number of connected agents, no matter their current activity (expressed in percentage). If this value falls below the specified closing rule, the Services will be closed immediately. Its status will change to open again when the calls ratio falls below the specified opening threshold. Of course, the different number of agents will be calculated on the basis of all the agents in the Service.
- The call frequency

  The ***[Verify the call frequency]*** option must be checked to activate this rule. The user must not specify any thresholds expressed in calls/sec. He may choose to indicate the number of calls per X seconds, where X must be a positive integer. The number of seconds indicates the time range used to calculate

the call frequency. If this value exceeds the specified closing rule, the Service will be closed immediately. Its status will change to open again when the call frequency falls below the specified opening threshold. Of course, the frequency will be calculated on the basis of all the calls sent to the Service. It is important to note that the frequency will be calculated by taking into account the rejected calls (if the Reject21 is active).

Example:

The frequency is calculated every minute (60 seconds), the opening threshold is set at 10 calls and the closing threshold is set at 20 calls.

The Service will be closed if over 20 calls arrive during this time. Then, if fewer than 10 calls arrive during the next 60 seconds, the Service will open again. This threshold rule is the only one that does not depend on real time statuses and which is assessed according to the number of seconds indicated for each Service.

6 {Rights} tab:

The team manager's agent creation, removal or assignment functions can be activated or deactivated according to the needs of each Mitel 5000 Contact Center and service. The following options are related to a service (i.e. a different value can be specified for each service) but are common to all the managers of the same service.

The rights granted to team managers by a service manager are divided into two distinct categories:

- The team manager may or may not create/remove system users. To give him this right, select the option ***[Agent creation and deletion right]***. This option is only available if the service managers have been granted the right to create and delete users by the administrator.
- The service manager grants team managers a minimum, intermediate 1, intermediate 2 or maximum assignment right (select the corresponding option in the tab): A description of each of these rights can be found in the window itself.

A team manager can remove an agent from his team at any moment. On the other hand, if the team manager does not have sufficient rights to re-assign the agent to his team later, a clear warning message is displayed when the manager requests the agent's removal from the team.

Depending on the choice made by the service manager, the graphical interfaces displayed to the team manager are updated (activation or deactivation of some buttons, etc.).

The service manager can only grant his team managers a right if he himself has received the corresponding right from the administrator:

- He can always grant minimum and intermediate 1 rights.
- He can only grant intermediate 2 right if he has received the intermediate right.
- He can only grant the maximum right if he has received the maximum right.

7 {Distribution} tab:

(This tab is only available for incoming services.)

For agents using a telephone with several extensions, the manner in which to determine whether an agent is available to receive a new incoming voice call can be configured by Service. Three options are available:

- Idle extension
- No active call
- No active professional call

Since there is an explanation of each option in the window, they will not be detailed here. However, no matter the option chosen, one condition for call distribution is the presence of a free professional extension.

The option chosen will not only affect the distribution of voice calls (both from a script with or without IVR and for an agent-to-agent transfer) but also, in the real-time statuses, the display properties for the number of available agents.

8 {Outgoing Calls} tab:

Note: This tab is only available for outgoing services.

"Options for immediate outgoing professional calls" box

- **Allow immediate outgoing professional calls**:

  This option enables agents to make immediate outgoing professional calls on their own initiative.

  However, for an agent to be able to make this type of call:

  • The service must be open.

- The service must be in production.
- The agent must be assigned to this service.
- The agent must be connected and have at least one free professional extension.

- **Maximum call creation time**:
  Maximum time (in seconds) given to agents, in this service, to create an immediate outgoing professional call (number and name input). Since the agent is "reserved" during this period, he will become available again at the end of this maximum time.
- **Call priority:**
  Priority level for immediate outgoing professional calls
- **Maximum number of retries:**
  Maximum number of attempts to reach the right person
- **Maximum number of connections:**
  Maximum number of attempts to set up a connection.

"Make outgoing calls box"

Nota : • *This option applies to all outgoing professional calls, regardless of whether or not they are created on the agent's initiative.*

- **With confirmation:**
  All the calls presented to agents for this service will require a confirmation on the part of the agents before being made.
- **Without confirmation:**
  All calls presented to agents for this service will be made automatically.

  Note: *The first attempt to make an outgoing professional account created on the agent's initiative never requires a confirmation; it is always make automatically. The retries will respect the rule defined in this tab.*

"Presentation timeout options" box

Nota : • *This option applies to all outgoing professional calls, regardless of whether or not they are created on the agent's initiative.*

- **Activating the presentation timeout:**
  It is possible to define a maximum presentation time for these calls if this option is activated.
- **Presentation timeout:**
  If the option is activated, you can define the maximum presentation time (in seconds) in this option. The time taken into account for this option starts when the call record (or script) is presented to the agent and stops when the phone call is initiated. It does not include the call creation time (for an outgoing call created on the agent's initiative).

U-418 : FILE MENU: PRINT

OBJECTIVE

- To print all the elements that relate to the configuration of a Service.

OPERATOR LEVEL

- Service manager, or team manager or supervisor.

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service manager or authorized team supervisor (see Sheet U-410).

PROCEDURE

There are two ways to print the configuration of a Service:

1 From the [File] menu:

- In the **[File]** menu, select **[Print]** then one of the following options, depending on the operator level:
  - u For the Service managers: **[DNIS range], [agents], [languages], [skills], [teams], [sounds], [trees]** or **[variables]**.
  - u For the team supervisors: **[agents], [languages], [team skills]**.

Depending on the elements selected, choose the related items (child windows) which must also be printed and check ***[View]***. An HTML report will be output in Internet Explorer.

- To print a report, use the normal Internet Explorer print option.

2 Click on the print button .

- In the item display window, click on the **print**  **button.**
- Select the elements to be printed according to the operator level:
  - u For the Service managers: **[DNIS range], [agents], [languages], [skills], [teams], [sounds], [trees]** or **[variables]**.
  - u For the team supervisors: **[agents], [languages], [team skills]**.

  Depending on the elements selected, choose the related items (child windows) which must also be printed and check ***[View]***. An HTML report will be output in Internet Explorer.
- To print a report, use the normal Internet Explorer print option.

Notes :

- If you select the ***[General print]*** option, check the options you want and click on ***[OK]***. The following window provides all the necessary information about Services.
- All the services and related items will appear in form of a tree.
- Check the  icon in the tree window to display the print settings window. Select the options you want and click on ***[OK]***.

U-419 : FILE MENU: CHANGE LANGUAGE

OBJECTIVE

- To change the M5000 CC Service Manager application language

OPERATOR LEVEL

- Service manager, or team manager or supervisor.

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- Commission the M5000 CC Service Manager application (see Sheet C-400).
- The following procedure must be carried out before you connect to the M5000 CC Server (see Sheet U-410).

PROCEDURE

Note: The language change also applies to other M5000 CC applications installed on the same PC.

To change the M5000 CC Service Manager application language:

- Select the **[Change language]** command from the M5000 CC Service Manager application's **[File]** menu.
- Select the relevant language in the **"Language selection"** window and click on ***[OK]*** : The language used for the labels, titles, menus, etc. changes.
- You may now connect to the M5000 CC Server (see Sheet U-410).

U-420 : FILE MENU: EXIT

OBJECTIVE

- Closes the M5000 CC Service Manager application.

OPERATOR LEVEL

- Service manager, or team manager or supervisor.

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service manager or authorized team supervisor (see Sheet U-410).

PROCEDURE

- There are 2 ways to close the M5000 CC Service Manager application:
  - Select the **[Exit]** command from the M5000 CC Service Manager application's **[File]** menu, or
  - Click on the  button in the M5000 CC Service Manager application's general window.

U-430 : DISPLAY MENU: OUTBOUND CALL LIST

OBJECTIVE

After describing the window for editing the list of outbound calls (see step **1** in this sheet), this sheet presents the different tasks applicable to the management of Outbound call lists:

- Adding calls to versions of an outbound Service (see step **2** in this sheet),
- Importing call lists from an external source (see step **3** in this sheet),
- Adding a list of calls from an external application (see step **5** in this sheet),
- Adding a new call from an inbound script (see § 13.2.4.10.4 in the appendix),

Note: *It is also possible to manage the outbound call list from an external application using the Outbound call list API (see § 8.4.13).*

- *In an outbound Service, the M5000 CC Media Server calls customers using the phone numbers found in the dial list. Calls are immediately transferred to agents.*

OPERATOR LEVEL

- Service Manager

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized Service manager (see Sheet U-410).

PROCEDURE

1 Description of the "Dial list edition" window

To access the **"Dial list edition"** window (see Figure 10.43), select the **[Dial list]** command from the M5000 CC Service Manager application's **[View]** menu.

The dial list is a list containing, for each entry, the following properties:

- A unique identifier (can be any string)
- The name of the person to contact (can be any string)
- The telephone number to dial (can be any diallable or canonical telephone number, see Section 13.2.2.7.4).
- The priority level of the call (between 0 and 99)
- The date and time of the next scheduled attempt (or 12/31/9999 if not scheduled yet)
- The number of retries still allowed
- The number of connections still allowed. This property is similar to the number of retries but is decremented only if the call was successful (someone answered it) but the desired person has not been reached. In this case, the number of retries is reset to its initial value.
- The date and time of the latest attempt
- The result of the latest attempt
- A Boolean entry indicating if the call is loaded by the Server. This means that the call is currently being handled by the system.
- The name of the team to which the agent must belong (or a zero-length string if team is not used)
- The identifier of the agent that has to make the call (or a zero-length string if the agent is not known)
- The level required for each skill and each language defined in the Service version (values between 0 and 99, where 0 is the weakest level).

There are in fact two dial lists for each outbound Service: one for the Beta version and one for the Production version. An identifier has to be unique within a version.

Note: *The number of visible entries is limited to 50.*

The result of a call can take on any of the following values: see the global "CallResult" variable (see § 13.3.2.5).

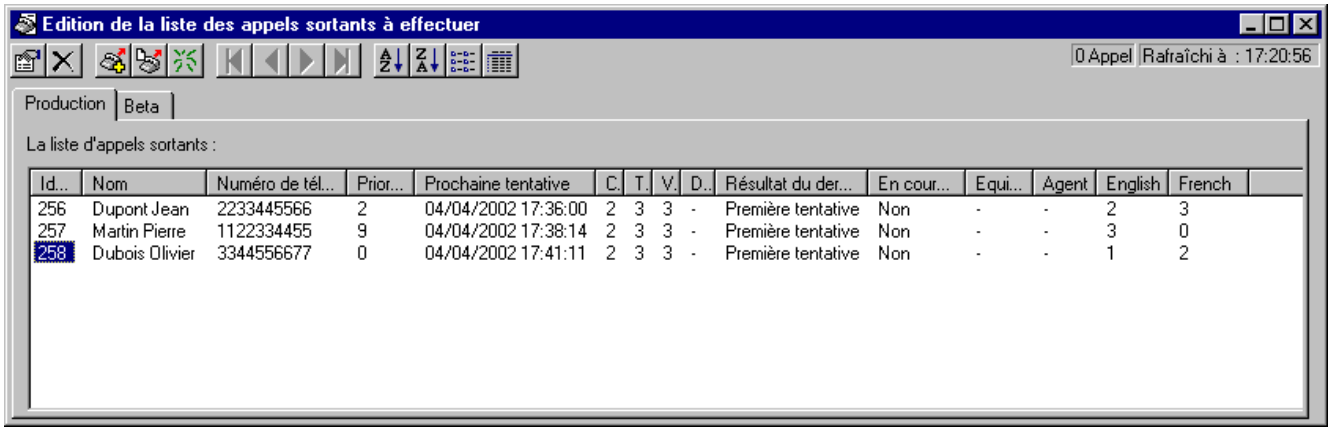


Figure 10.43 "DIAL LIST EDITION" WINDOW

2 To add a call to an outbound Service version

One of the tasks of a Service manager is to complete the dial list. When he adds a new call to the dial list, he must:

- Select the **[Dial list]** command in the M5000 CC Service Manager application's **[View]** menu.
- In the **"Dial list"** window (see Figure 10.43):
  - u click on the **{Beta}** tab if you want to add a call to the dial list for the "Beta" version, or
  - u click on the **{Production}** tab if you want to add a call to the dial list for the "Production" version of the current Service.
- Click the **Add**  button or right click anywhere in the window and select the ***[Add]*** command from the pop-up menu.
- In the **"Add an Outbound call"** window, enter the call characteristics:
  - u Enter a unique identifier for the call in the ***{Id}*** text box.
  - u Enter the name of the person to call in the ***{Name}*** text box.
  - u Enter the phone number of the person to call in the ***{Phone number}*** text box. You have to format the number as a raw number sequence, plus an optional square ("#") character at the end. A comma (",") is a directive telling the system to wait a quarter of a second before dialling subsequent numbers.
  - u Enter the priority associated with the call in the ***{Priority}*** text box
  - u Enter the time of the first call attempt in the ***{First call time}*** text box. The format is: *DD/MM/YYYY HH:MM:SS*. If you do not want to specify a date for the first attempt, you can leave this text box empty (by deleting its content).
  - u Enter the maximum number of attempts to join the person in the ***{Max Connections}*** and ***{Max Retries}*** text boxes. A connection is established if someone answers: if it is not the person you wanted to call, subsequent attempts can be scheduled, up to ***{Max connections}***. If no connection was established due to a network error, or a "No answer" or a "Busy" tone, subsequent attempts can be scheduled, up to ***{Max retries}***.
  - u If you want a specific agent to handle the call, type its identifier in the ***{Agent}*** text box.
  - u If you want the agent to be a member of a specific team, type the team identifier in the ***{Team}*** text box.
  - u You can also set the required level in each language and skill of the Service version. These requirements are used for selecting the agent who will handle the call.
  - u Check ***[Use Dial Properties]*** if you want the system to check and complete the phone number if necessary.
    For example, if all external numbers have to begin with a zero followed by a short waiting time, the system can automatically add "0," to the phone number entered in the ***{Phone number}*** text box if you select this option.
- Click on ***[OK]*** to confirm.

Nota : • *In some cases, high-level phone numbers can be used (see § 13.2.2.7.4).*

• *The Id, Name and Phone number characteristics must never be set to a zero-length string.*

3 To import a list of calls from an external source

A practical way to complete the dial list is to import the calls from an external source (Excel file, Access file, CSV file, text file; SQL server...).

To import a list of calls:

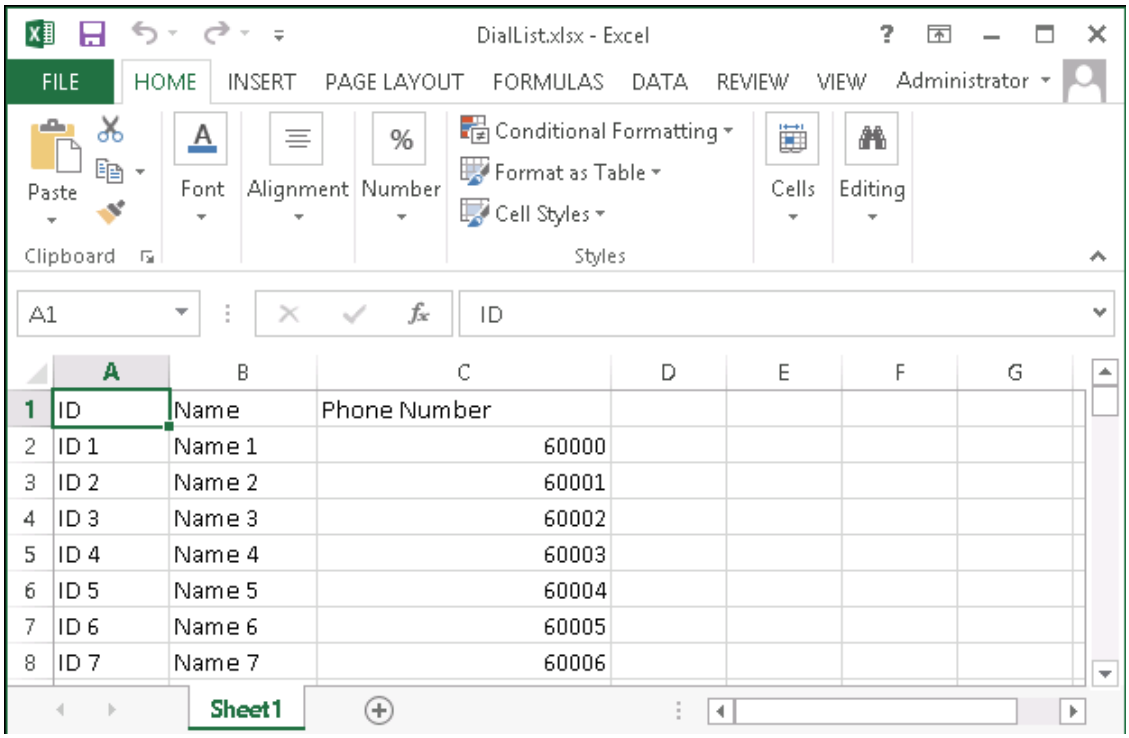
- Select the **[Dial list]** command in the M5000 CC Service Manager application's **[View]** menu.
- In the **"Dial list"** window (see Figure 10.43):
  - u click on the **{Beta}** tab if you want to add calls to the dial list for the "Beta" version, or
  - u click on the **{Production}** tab if you want to add calls to the dial list for the "Production" version of the current Service.
- Click the **[Import calls]**  button or right click anywhere in the window and select the ***[Import]*** command from the pop-up menu.
- In the "**Import Outbound calls" :** window,
  - u In the ***{Connection string}*** text box, enter the connection string to the external data source. It's possible to build this string using a wizard accessible with the button **[...]**. See the next section for examples.
  - u In the ***{Table source}*** text box, enter de name of the table containing the data to import.
    - for an Excel file: use the name of the sheet with the character $ added at the end
    - for an Access file, SQL database: enter the name of the table
    - for a text file, CSV file: enter the name of the file
  - u In the ***{ID field}*** text box, enter the name of the field containing the call identifiers.
  - u In the ***{Name field}*** text box, enter the name of the field containing the name of the person to call.
  - u In the ***{Phone number field}*** text box, enter the name of the field containing the number to dial. You have to format the number as a raw number sequence, plus an optional hash ("#") character at the end. A comma (",") is a directive telling the system to wait a quarter of a second before dialing subsequent numbers.
  - u The ***{Custom SQL query}*** text box is optional. With this option, it's possible to make a custom SQL query to retreive the dial list to import. For example, it's possible to filter the data to import using a "where" clause (see exemple in the next section). When this option is used, it's not necessary to enter a value in the ***{Table source}*** text box.
  - u Enter the priority associated with the calls in the ***{Priority}*** text box
  - u In the ***{First call time}*** text box, enter the time of the first call attempt for the entire set of calls. The format is *DD/MM/YYYY HH:MM:SS*
  - u Enter the maximum number of attempts to join the person in the ***{Max Connections}*** and ***{Max Retries}*** text boxes. A connection is established if someone answers: if it is not the person you wanted to call, subsequent attempts can be scheduled, up to ***{Max connections}***. If no connection was established due to a network error, or a "No answer" or a "Busy" tone, subsequent attempts can be scheduled, up to ***{Max retries}***.
  - u If you want a specific agent to handle the call, type his identifier in the ***{Agent}*** text box.
  - u If you want the agents to be a member of a specific team, type the team identifier in the ***{Team}*** text box.
  - u You can also set the required level in each language and skill of the Service version. These criteria are used to determine the agent to take a call.
- Click on ***[OK]*** to confirm.

Note: *This operation will take time depending on the number of calls to import. Actually, 25 calls are added each 5 sec.*

4 Import examples:

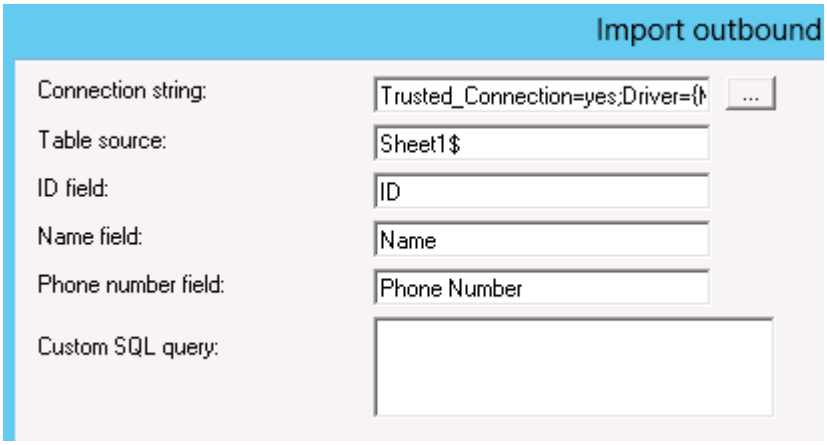
- Import from Excel file

  Source file:



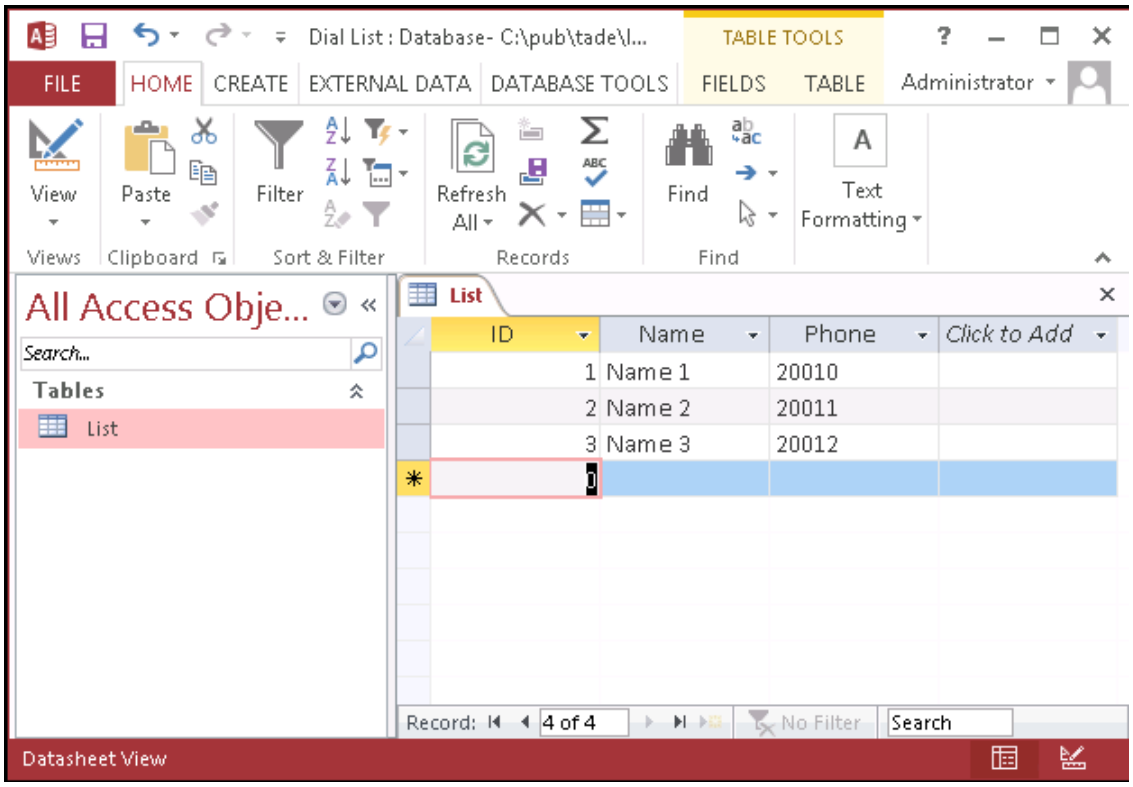
	A	B	C	D	E	F	G
1	ID	Name	Phone Number				
2	ID 1	Name 1	60000				
3	ID 2	Name 2	60001				
4	ID 3	Name 3	60002				
5	ID 4	Name 4	60003				
6	ID 5	Name 5	60004				
7	ID 6	Name 6	60005				
8	ID 7	Name 7	60006				

  - To create the connection string, click on the ***[...]*** button. Select "Excel (2007) without DSN" as type and enter the path to the Excel file in the ***{Database}*** text box.
  - In the ***{Table source}*** text box, enter the name of the Excel sheet with a character "$" added at the end.
  - In the text boxes ***{ID field} {Name field} and {Phone number field}***, enter the column names.

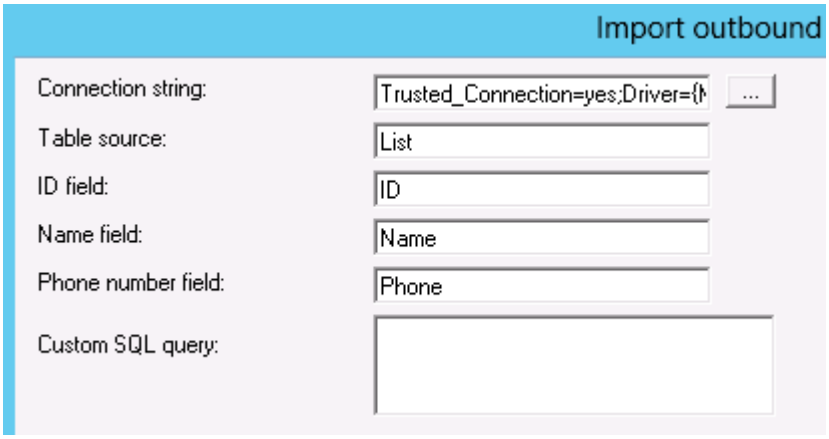


- Import from Access file

  Source file:

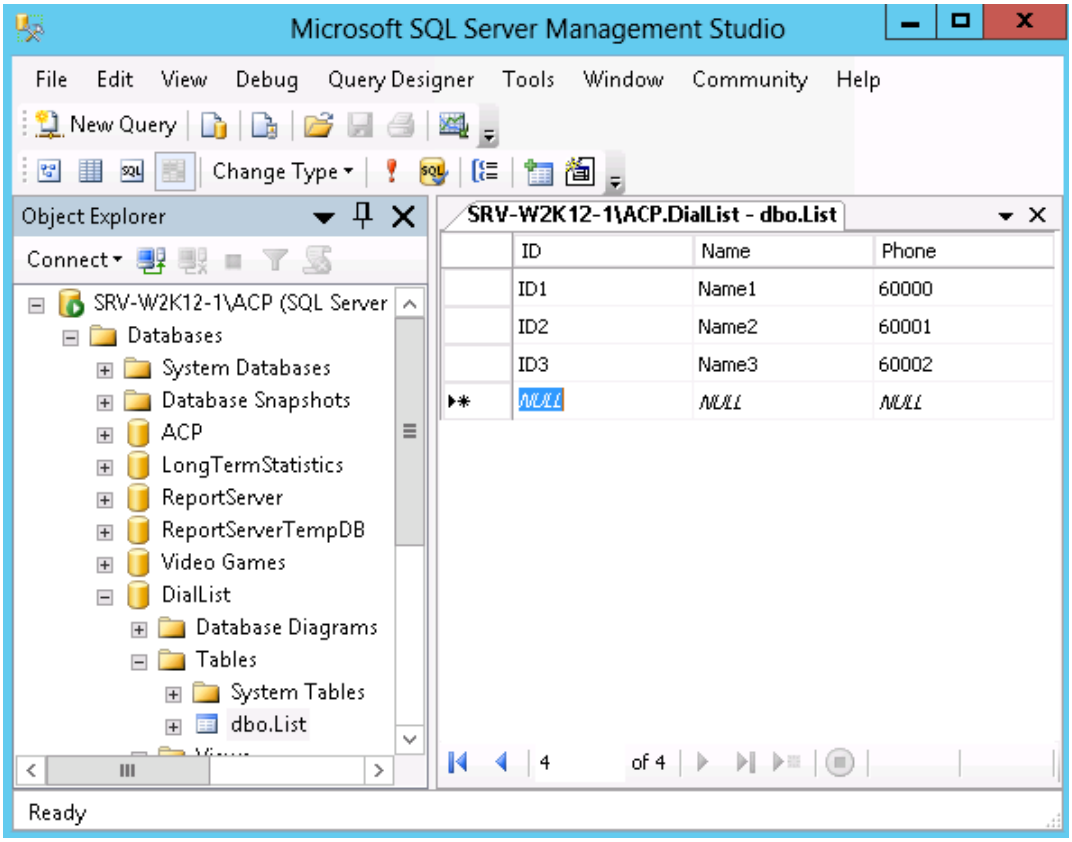


- To create the connection string, click on the ***[...]*** button. Select "Access (2007) without DSN" as type and enter the path to the Access file in the ***{Database}*** text box.
- In the ***{Table source}*** text box, enter the name of the Access table.
- In the text boxes ***{ID field} {Name field} and {Phone number field}***, enter the field names.

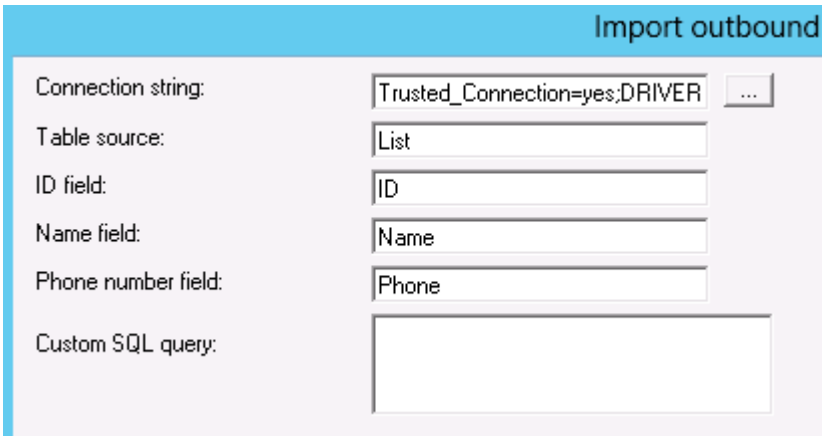


- Import from SQL server

  Source database

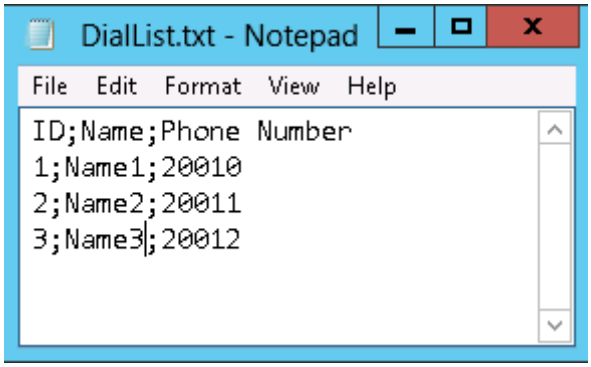


- To create the connection string, click on the ***[...]*** button. Select "SQL Server without DSN" as type and enter the path to the SQL server name in the ***{Server}*** text box. If the instance used on the SQL server is not the default instance, you must add *\instance_name* after the server name. In the example above, you have to use srv-w2k12-1\acp. In the text boxes ***{User name}*** and ***{Password}*** enter the name and the password of a SQL user having the permission to access the database. If these fields are not filled, the Windows authentication will be used for the connexion to SQL server. In the ***{Database}*** text box, enter the database name.
- In the ***{Table source}*** text box, enter the table name.
- In the text boxes ***{ID field} {Name field} and {Phone number field}***, enter the field names.

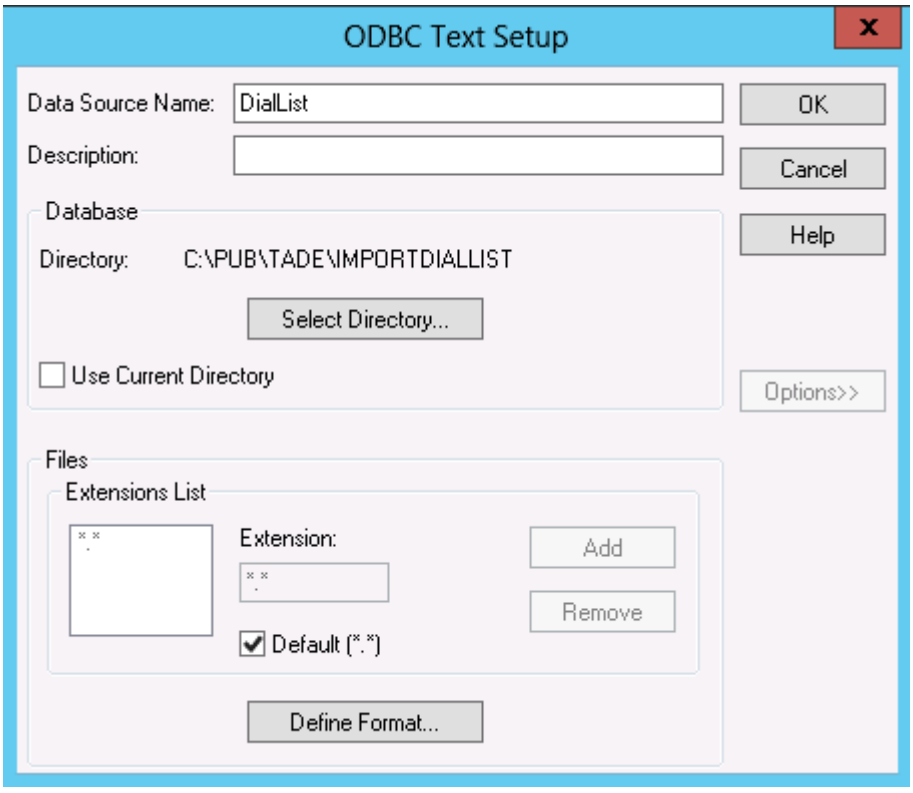


- Import from CSV file

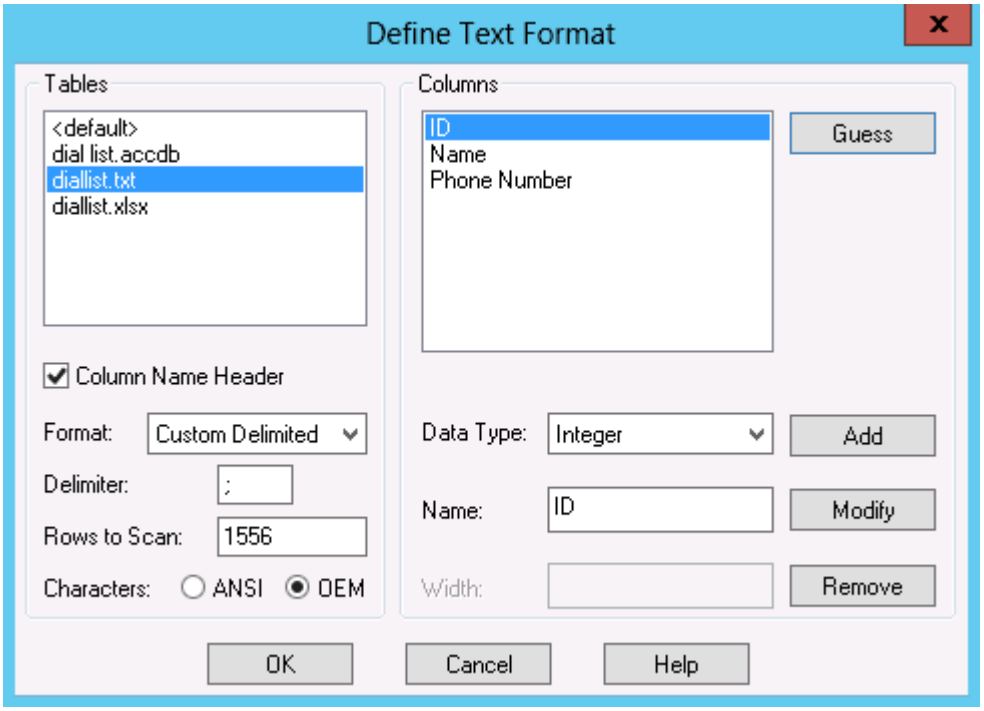
  Source file:



- For CSV file, it's necessary to create a "System DSN" with the Windows tool "ODBC Data Source Administrator". If M5000 CC Service Manager is installed on 64 bits OS, the 32 bits version of this tool must be used. In "ODBC Data Source Administrator":
  - Select the tab "System DSN"
  - Click on ***[Add...]***. In the list of drivers, select "Microsoft Text Driver (*.txt,*.csv)".
  - Enter a name for the DSN.
  - Uncheck the option ***{Use Current Directory}*** and select the directory where the CSV file is located.

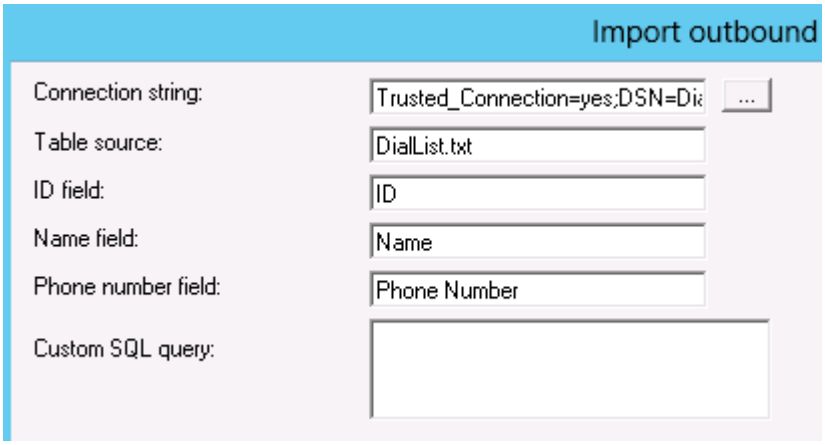


  - In the ***{Options>>}*** section, click on the button ***[Define Format...]***
  - In the window "Define Text Format", select the text file in the list of tables.
  - Check the option ***{Column Name Header}***.
  - Select "Custom Delimited" as ***{Format}***.
  - Enter ";" as ***{Delimiter}***.
  - Next click on the button ***[Guess]***. The tool will detect automatically the columns defined in the file.



u Close the tool with the ***[OK]*** buttons. If the error message "Failed to save table attributes of (null) into (null)" is displayed, please ignore.

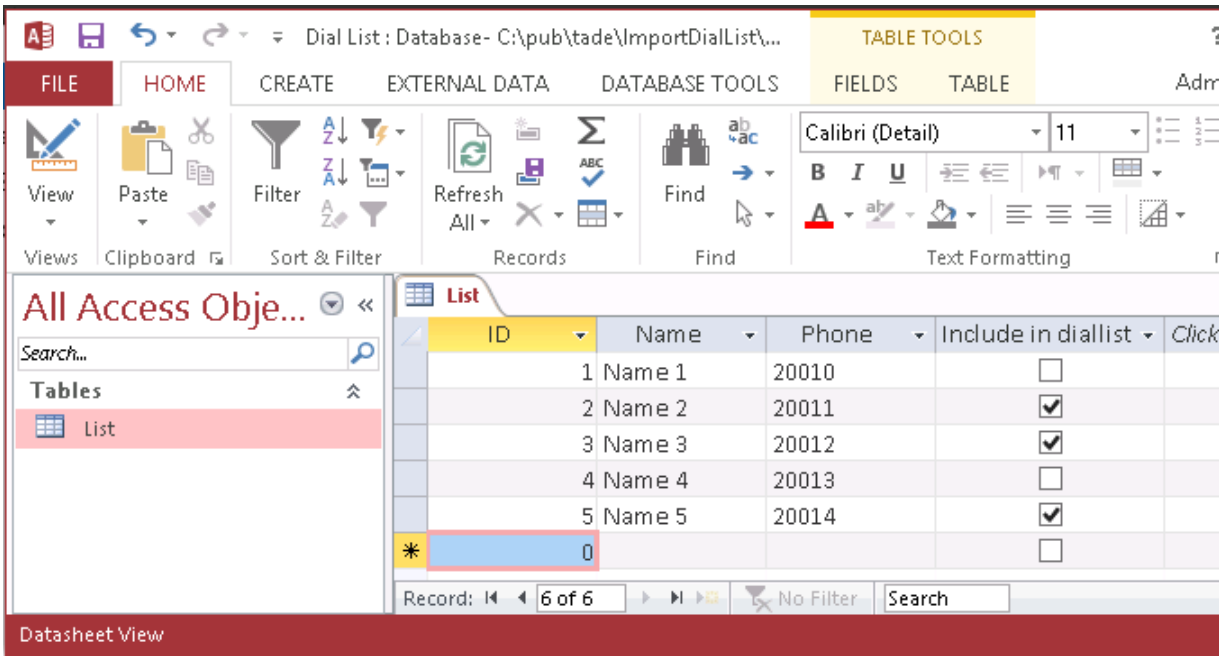
- In M5000 CC Service Manager, to create the connexion string, click on ***[...]*** button. Select "Generic with DSN" as type. In the ***{DSN}*** text box, enter the name of the system DSN created previously.
- In the ***{Table source}*** text box, enter the name of CVS file.
- In the text boxes ***{ID field} {Name field} and {Phone number field}***, enter the column names.



• Custom SQL query

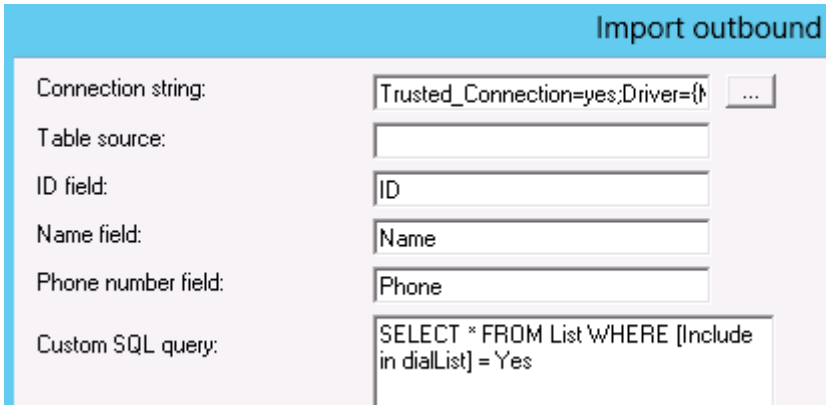
This example shows how to use a custom SQL query to filter imported records. A Yes/No field will be used to filter the records: only the records with the value of this field set to Yes will be imported.

Source file:



- To create the connection string, click on the ***[...]*** button. Select "Access (2007) without DSN" as type and enter the path to the Access file in the ***{Database}*** text box.
- In the text boxes ***{ID field} {Name field} and {Phone number field}***, enter the field names.
- In the ***{Custom SQL query}*** text box, enter this query:

"SELECT * FROM List WHERE [Include in diallist] = Yes"



5 To import a list of calls from an external application

A practical way to complete the Dial list is to add a list of calls from an external application.

The dial list can be replaced by an external application. The application could directly open the dial list (OutboundDialList table of the OutboundDialListxx.cfg database in the Service directory, where xx can be Beta or Production) and make changes.

Note: *the Service must be closed (see Sheet U-414)before the dial list is edited.*

U-431 : DISPLAY MENU: DNIS RANGE

OBJECTIVE

- To manage the DNIS ranges and associate them with "Production" and "Beta" versions

OPERATOR LEVEL

- Service Manager

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized Service manager (see Sheet U-410).

PROCEDURE

1 Description of the "DNIS range management"

For each Service, the administrator assigns DNISes or remote DNISes, which are the phone numbers customers call in order to reach a Service from outside. So he binds DNIS ranges to inbound Services (see Sheet U-321).

Among these DNIS ranges, the Service manager has to specify those which will be used for the Production version of the Service, and those which will be used for the Beta version. In this way, the Beta version of a Service can be tested without disabling the entire Service: the "Production version" remains operational.

Note: The DNIS may be associated with languages in the "SimpleRout" Wizard (see Sheet U-460).

To access the **"DNIS range management"** window, select the **[Service number range]** command from the M5000 CC Service Manager application's **[View]** menu:

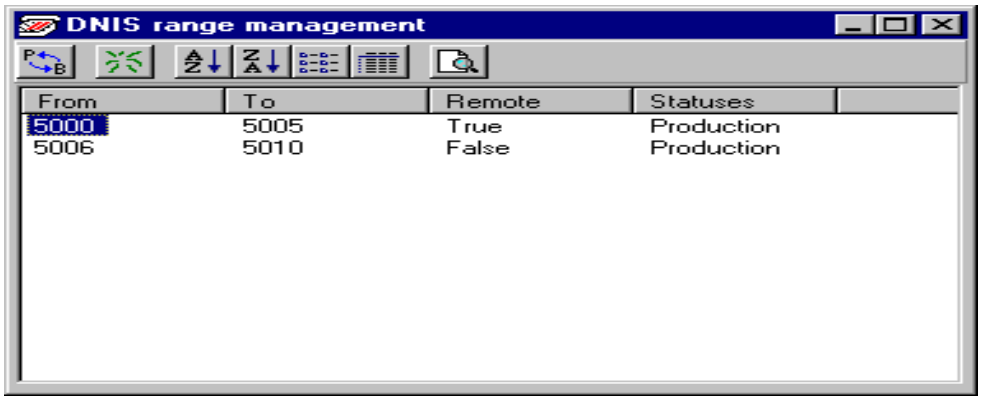


Figure 10.44 "DNIS RANGE MANAGEMENT" WINDOW

The different fields in the **"DNIS range management" window** (see Figure 10.44) are:

- ***{From}***: Lower DNIS range limit,
- ***{to}***: Upper DNIS range limit,
- ***{Alias}*** : alias associated with the DNIS range,
- ***{Remote}*** : this option must be enabled if the DNISes specified in the range are to be used for transfer to another M5000 CC Server.
- ***{Status}*** : this is the only parameter that may be modified by the Service manager and may have two values: "Production" or "Beta".

2 To associate DNIS ranges with "Production" and "Beta" versions

- To access the **"DNIS range management"** window (see Figure 10.44), select the **[Service number range]** command from the M5000 CC Service Manager application's **[View]** menu.
- In this window, there are two ways to carry out the Production/Beta and Beta/Production change for each DNIS range. Select the DNIS range concerned and carry out one of the following operations:

- Click on the **Set as Beta / Set as "Production"** button  in the toolbar.
- Right click to display the pop-up menu and select the **[Set as Production]** or **[Set as Beta]** command.
- Double click on the relevant DNIS.

U-432 : DISPLAY MENU: MAILBOX

OBJECTIVE

- To manage the "Production" and "Beta" status of each inbox defined by the administrator.

OPERATOR LEVEL

- Service Manager

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized Service manager (see Sheet U-410).

PROCEDURE

1 Description of the "Mailbox management" window

To access the **"E-mailbox management"** window, select the **[E-mailbox]** command from the M5000 CC Service Manager application's **[View]** menu.

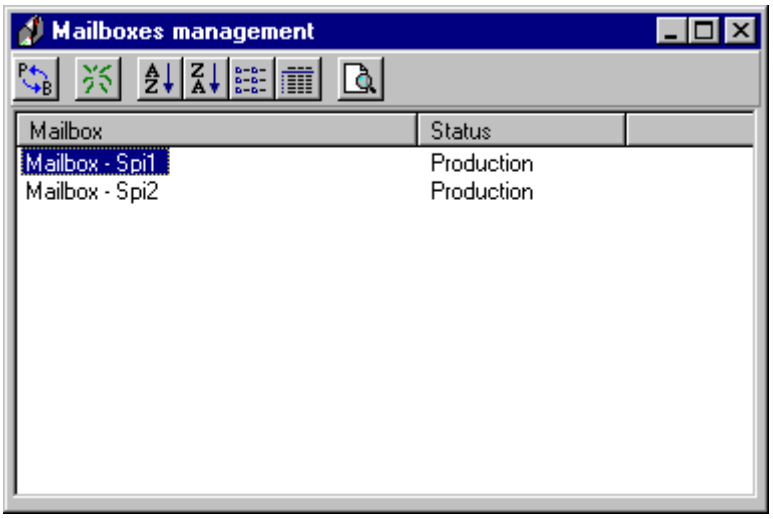


Figure 10.45 "E-MAILBOX MANAGEMENT" WINDOW

This window allows to manage the status of incoming mail fox for e-mail and incoming mail box for SMS.

You have to make a distinction between inboxes and other mailboxes defined in a profile by the administrator (see Sheet U-331): the incoming mailboxes are the entry point to the Service (they are the equivalent of the DNIS for voice calls) whereas the other mailboxes are defined as destination of a copy ("CopyEmail" node, see Section 13.2.7.6 or move ("MoveEmail" node, see Section 13.2.7.7 operation on the e-mail.

For each Service, the Administrator assigns inbound mailboxes, which hold e-mail address(es) targeted in order to reach a Service from the outside. The Service manager is in charge of the status of each inbound mailbox defined in the Administrator:

- the **"Production version"**,
- the **"Beta version"**.

2 To modify the status of a mailbox

- In the **Mailboxes management** window, click the **Toggle Production/Beta**  button to change the status of the mailbox, which has to match the status of the version.

U-433 : DISPLAY MENU: PERSONAL MESSAGES

OBJECTIVE

- Creating/editing/deleting a personal (text) message and displaying it for a given service:
  - in a "programmed" and cyclic manner on a wall display/wall displays (see part 1"Programmed" personal messages management in this sheet).
  - "immediately" on the connected applications of team managers, service/team managers and/or a wall display/wall displays (see part 2"Immediate" personal messages management in this sheet).

OPERATOR LEVEL

- Service Manager or Team Manager.

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service manager or authorized team manager (see Sheet U-410).

PROCEDURE

"Programmed" personal messages management

A "programmed" message is a text a Service manager or team manager wants to display on a wall display selection for some time and at a regular interval. The content of such a message is stored by the M5000 CC Server and may later be modified via the same menu (see step **4** in this sheet).

1 Accessing the "Scheduled personal messages management" window

To access the **"Scheduled personal messages management"** window, select the **[Personal messages] > Scheduled messages]** command from the M5000 CC Service Manager application's **[View]** menu.

This window (see Figure 10.46) is used to view the properties of the service's scheduled message(s), and to access the edit, delete, and create buttons.

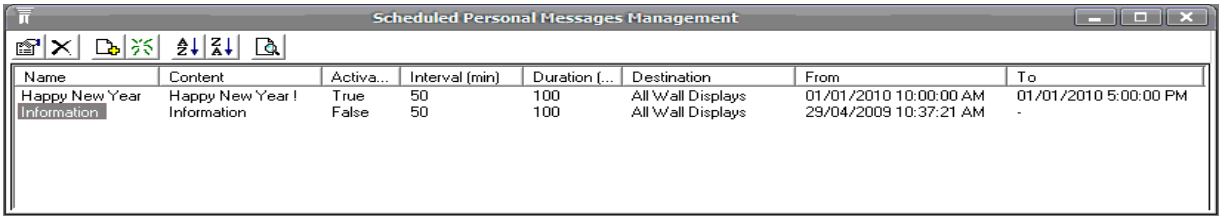


Figure 10.46 "SCHEDULED PERSONAL MESSAGES MANAGEMENT" WINDOW

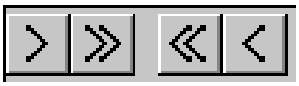
2 Creating a new scheduled personal message

- Click the **Add**  button; the **"Scheduled Personal Message Properties"** window opens. Enter or tick the following personal message characteristics, then click ***[Validate] (the line concerning this new message appears in the* "Scheduled Personal Messages Management" *window)***:
  - u **{Name}**: Unique identifier input field for this message. This property can be modified after the message has been created. This identifier is unique for each Service. The string is limited to 40 characters, but the length of the message must correspond to the physical limits of the wall display used (number of lines, max. number of characters per line etc.).
  - u ***[Activated]***: This checkbox indicates whether or not the personal message will be displayed regularly by the wall displays selected via the following button.
  - u ***[To...]***: This button is used to select the wall displays on which this message must be displayed via the following window (see Figure 10.47).
  - u ***{Message}***: Input field for the content of the message to be displayed. The string is limited to 255

characters, but the length of the message must correspond to the physical limits of the wall display used (number of lines, max. number of characters per line etc.).

- u ***{Display the message every x minutes}***: input field for the time (in minutes) between two message appearances on the selected wall displays (e.g. 50 min means that the personal message is displayed every 50 min).
- u ***{during x seconds}***: input field for the duration of message appearance on the selected wall displays.
- u ***{From}***: input field for the starting date of message display on the selected wall displays.
- u ***{From} ... {to}***: input field for the starting and ending date of message display on the selected wall displays.

Figure 10.47 "PROGRAMMED PERSONAL MESSAGE DESTINATIONS" WINDOW

- Selecting the target wall displays for the programmed message (see Figure 10.47):
  - u The left part of the window contains all the wall displays that can be selected and that are assigned to the service, but on which the programmed message will not be displayed.
    Conversely, the right part contains the selected wall displays that will display the message.
  - u The  buttons are respectively used to select an element from the list (and possibly the link elements), to select all the wall displays, and to unselect all or one of them.

    If the **Select all wall displays**  button is used, the right part will not contain any wall display name, but will only display ***"All Wall Displays"***. In this case, if a new wall display is later assigned to the service, it will also display the programmed message without additional configuration.

3 Deleting a programmed personal message

- In the **"Scheduled personal messages management"** window (see Figure 10.46), select the personal message to be deleted and
  - u Click on the **Delete**  button or
  - u right-click the personal message and select **[Delete]** from the pop-up menu.

4 Editing the programmed personal message properties

- In the **"Scheduled personal messages management"** window (see Figure 10.46), select the personal message to be edited and
  - u click on the **Properties**  button or right-click on the personal message and select **[Properties]** from the pop-up menu. the **"Scheduled Personal Message Properties"** window appears.
  - u Enter or check the characteristics of the personal message (the same as during creation, except the message "name"), then click on ***[OK]***:

5 Displaying a personal message on a wall display

- To ensure that a programmed personal message is correctly displayed, follow these instructions:

- The ***{On}*** property for this personal message must be set to "true" in the **"On"** column of the **"Scheduled personal messages management "** window (see Figure 10.46).
- Check the consistency of the values for the frequency and duration properties for this personal message (e.g. if the frequency defined equals 1 min and the duration equals 10 sec, the message will appear after 1 min, will be displayed for 10 sec and will reappear 1 min after the end of the 10 sec display, i.e. 1min 10 sec after the message appears for the very first time).
- Verify that the Service where the personal message is defined is a Service for which information is already displayed on the wall display.
- Verify that the length of the personal message fits correctly with the constraints of the wall display (number of lines, max. number of characters per line etc.).

Note: *To find out the other basic operations needed for the management of wall displays, refer to Sheet U-601.*

"Immediate" personal messages management

An immediate message is a message that a service manager or team manager wishes to send to a selection of service manager(s), team manager(s), team(s), agent(s) and wall displays connected with an application to his service.

1 Creating a personal message and sending it immediately

- To access the **"Immediate personal message properties"** window, select the **[Personal messages] > Immediate messages]** command from the M5000 CC Service Manager application's **[View]** menu.
- The **"Programmed personal message properties"** window appears. Enter or tick the following characteristics of the personal message, then click ***[Validate]to send the message***:
  - ***[To...]***: This button is used to select the service manager(s), team manager(s), team(s), agent(s) and wall displays which must display this message via the following window (see Figure 10.48).
  - ***{Message}***: Input field for the content of the message to be displayed. The string is limited to 255 characters, but for a wall display, the length of the message must correspond to the physical limits of the wall display used (number of lines, max. number of characters per line etc.).
  - ***{Display message during x seconds (wall displays)}***: input field for the duration of message appearance on the selected wall displays. This parameter is ignored if no wall display is selected (the messages displayed in the windows on the M5000 CC Service Manager and M5000 CC User applications disappear when the message reader confirms this message by clicking on ***[OK]***).

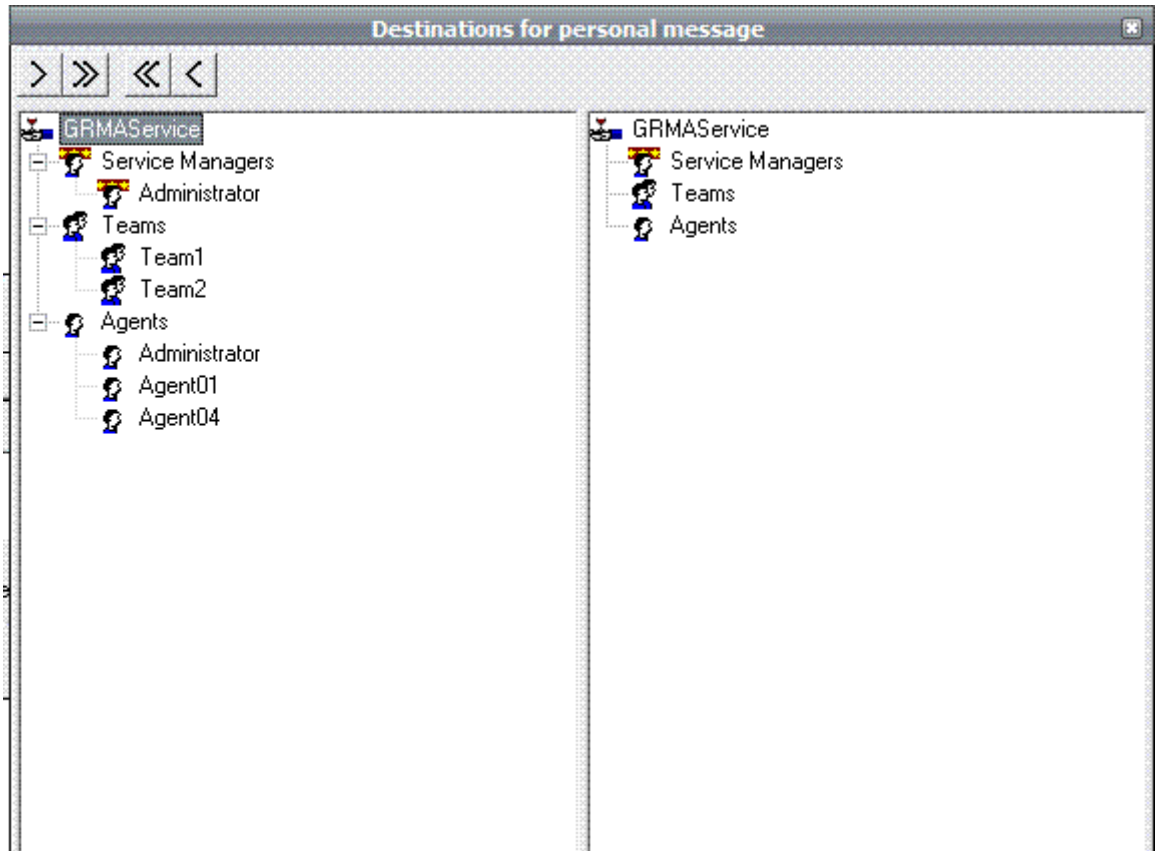


Figure 10.48 "IMMEDIATE PERSONAL MESSAGE DESTINATIONS" WINDOW

- This window uses the same method as for programmed messages (see Figure 10.47) but with a different list of addressees, depending on the message sender profile:

  u if the source of the message itself is ***Service manager***, all the connected service managers, all the connected team supervisors, all the service teams, all the connected service agents and all the service wall displays.

  u if the source of message is ***team manager***, all the connected team supervisors under his supervision, all the teams under his supervision, all the connected agents of these teams. Moreover, if he has been granted the right to send personal messages to the service wall displays (see note), the list also includes the connected service wall displays.

  Note: *The service manager can allow (and prohibit) team supervisors to send immediate or scheduled personal messages to the wall displays. For this, just reverse the "Yes" or "No" parameter value that appears in the* ***"Personal messages to wall displays"*** *column of the agents or teams display window (see* ***[View >Agents]*** *menus (Sheet U-434) or* ***[View > Teams]*** *(Sheet U-438)).*

2 Displaying an immediate personal message

- The immediate message will only be displayed once in each target application. Depending on the type of this application, the message is displayed differently:

  u M5000 CC Service Manager application (Service manager, team manager) or agent connected with the M5000 CC User application: when the message is received, a window opens in the centre of the screen in "always visible" mode.

  u Agent connected with M5000 CC User API: The "***NewInstantPersonalMessage***" event is started (see Tableau 14.22 of § 14.1.11).

  u Agent connected with User ActiveX Control: the "***NewInstantPersonalMessage***" event is started and the message window opens if the corresponding option has been checked in the ***"Other"*** tab of the **"Property pages"** (see Figure 10.83 of the Sheet U-700).

  u Wall displays: the message is displayed on the luminous strip for the defined duration.

U-434 : DISPLAY MENU: AGENTS

OBJECTIVE

- To assign (unassign) agents to (from) a Service version (step **1** in this sheet).
- To assign (unassign) agents to (from) a team (step **2** in this sheet).
- To select an agent whose conversations will be recorded (step **3** in this sheet).
- To allow/(prohibit) team supervisors to send personal messages to the wall displays (step **4** in this sheet) (only for the service manager).
- To assign a user profile to an agent (see **5** in this sheet)
- To observe the user profile selected by an agent (see **6** in this sheet)

OPERATOR LEVEL

- Service manager, or team manager or supervisor.

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service manager or authorized team supervisor (see Sheet U-410).

COMMENTS

Users selected by the Administrator to work in the Service have to be assigned to a particular Service version by the Service manager. Assignment or removal is performed in real-time; assigned agents are managed instantly by the system.

In reality, the Service manager runs a group of agents available for a given Service. If an agent is working in many Services at the same time, a Service manager can temporarily remove the agent from one of the Services he/she manages, in order to balance the load between agents.

PROCEDURE

1 To assign/unassign an agent to/from a Service:

- In the M5000 CC Service Manager application's **[View]** menu, select **[Agents]**.
- In the **"Agents management"** window, you can assign or unassign an agent to/from the current Service version in three ways:
  - u Click on the ID of the agent you want to assign or unassign, then, in the toolbar, click:
    - either on the **Assign agent to the Service** button  ,
    - or on the **Unassign agent to the Service**  **button** ,
  - u Right-click the Identifier of the agent you want to assign/unassign to/from a team, and select **[Assign]** or **[Unassign]** from the pop-up menu.
  - u Double-click on the Identifier of the agent. The agent in question switches from "Assigned" to "Unassigned" state or vice versa.

2 To assign/unassign an agent to/from a Service:

Note: *The team must be created first, using the M5000 CC Service Manager application's **[View > Teams]** menu (see Sheet U-438).*

- *An agent can belong to zero, one or more team(s).*

- In the M5000 CC Service Manager application's **[View]** menu, select **[Agents]**.
- In the **"Agents management"** window, display the **View teams** window in one of these two ways:
  - u click on the Identifier of the agent you want to assign/unassign then click on the **View teams**  button on the toolbar

- Right click on the ID of the agent you want to assign or unassign and select **[View teams]** from the pop-up menu.

- In the **Agent teams** window, assign/unassign the agent to/from a team in one of these three ways:
  - click the Name of the team to which you want to assign/unassign the agent, and then click the **Add agent to team** button  or the **Remove agent from team** button  .
  - Click the Name of the agent you want to assign/unassign, and then select **[Add agent to team]** or **[Remove agent from team]** in the pop-up menu.
  - Double click on the name of the agent you want to assign/unassign to/from the team. This toggles the agent between assigned and unassigned.

- Click  to close the **"Agent teams"** window.

3 Recording an agent's telephone conversation

Constraints:

- The agents must have been defined as recordable by the administrator (see Sheet U-322)..
- The agents must have been assigned to a Service (step **1** in this sheet).
- Only **inbound calls can be recorded.**
- Only calls transferred from an IVR channel can be recorded in this manner. (Calls transferred from a tree without “IVR” will not be recorded even if the other constraints are respected). Nevertheless, calls transferred without IVR can be recorded at the agent’s request (see Section 8.4.10.4.2).
- The transfer to the agent has to be monitored.

To select the agents to be recorded:

- In the application's **[View]** menu, select **[Agents]**.
- In the **Agents management** window, you can choose the agents to be recorded in two ways:
  - click the Identifier of the agent you want to assign/unassign to/from a team, and then on the toolbar click the **Record agent** button  or
  - Right-click the Identifier of the agent you want to assign/unassign to/from a team, and select **[Assign recorded]** or **[Unassign recorded]** from the pop-up menu.

Destination of the agent recording:

- Select the **[Properties]** command from the M5000 CC Service Manager application's **[File]** menu to open the **"Properties"** window.
- In the **{Recordings}** box in the **{Service}** tab, define the eU-417mail addresses to receive the agents’ recordings (see-Sheet U-417). The destination address can be specified in one of the following ways:
  - Enter the complete e-mail address directly in the ***{Send the agent recordings}*** textbox.
  - Click the ***[To...]*** button and select an e-mail profile (if not done yet) from the list of profiles defined on your computer (see the Microsoft Windows messaging “Profiles” (Mail and Fax) option in Control Panel) and in the "M5000 CC Media Server configuration window (***{Recording via MAPI}*** and ***{MAPI password for the recording function}***) (see Sheet U-341). You can then select a recipient from the address book.
  - Enter the first letters or the alias name of the mail recipient, then click the ***[Check Names]*** button to complete the addresses. If the name is ambiguous or unknown, a message will be displayed.

  The last two ways can be used only if a Messaging System (i.e: Microsoft Exchange (Windows95), Windows Messaging (Microsoft NT 4.0),...) is installed on the machine. You can check it in the Windows Setup (see the **[Add/Remove programs]** option in Control Panel).

What happens if the recorded agent transfers the call ?

The agent-to-agent transfer functionality remains available if the destination is:

- an extension (internal or external): the agent's recording ends when the physical transfer is initiated (i.e. when the consultation call is created).
- an agent that is not recordable: the agent's recording ends when the physical transfer is initiated (i.e. when the consultation call is created).

- an agent that is recordable: the destination agent is recorded in the same wave file as the agent performing the transfer.

Note: *If the first agent is not recorded, the destination agent will never be recorded, whatever its recording properties settings are.*

4 Allowing/prohibiting team supervisors to send personal messages to the wall displays (only for service managers).

- In the M5000 CC Service Manager application's **[View]** menu, select **[Agents]**.
- In the **"Agents' teams"** window:
  - u Right-click the name of the agent defined as the "Team manager" concerned and select **[Enable personal messages]**, or **[Disable personal messages]** (if this privilege has to be taken away from him) in the pop-up menu that appears, or
  - u Right-click the name of the agent defined as the "Team manager" concerned and click **Enable personal messages**  or **Disable personal messages**  if this privilege has to be taken away from him.
    The value **"Yes"** or **"No"** of the **"personal messages to wall displays"** column in the **"Team - Agents"** window is reversed accordingly.

5 Assigning user profile to agent

- In the M5000 CC Service Manager application's **[View]** menu, select **[Agents]**.
- In the **"Agents management"** window, you can assign user profile to an agent in two ways:
  - u Click on the ID of the agent you want to modify user profile, then, in the toolbar, click on the **Set user profile**  **button**.
  - u Right-click the Identifier of the agent you want to modify user profile, and select **[Set user profile]** from the pop-up menu.
- In the displayed window, select the user profile you wan to assign or select the empty entry to clear the user profile.

Note: *When we set a user profile for an agent, it is no more possible to modify its skills levels, languages knowledge and team membership. However, when the skills levels, languages knowledges and team membership of the user profile is modified, this modification is directly taken into account by all the agents using this user profile.*

6 Observing the user profile selected by an agent

- In the M5000 CC Service Manager application's **[View]** menu, select **[Agents]**.
- In the **"Agents management"** window, the user profile selected by an agent is displayed in the "**Selected profile**" column.

Nota : *When an agent select a user profile, this selection apply event if a user profile is defined.*

U-435DISPLAY MENU: USER PROFILES

OBJECTIVE

- To make selectable (not selectable) user profile (from) a Service version (step **1** in this sheet).
- To assign (unassign) user profile to (from) a team (step **2** in this sheet).
- To define the level of knowledge for each ability of a user profile. (step **3** in this sheet).
- Defining the level of knowledge for each language of a user profile (step **4** in this sheet)

OPERATOR LEVEL

- Service manager

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service manager or authorized team supervisor (see Sheet U-410).

PROCEDURE

1 To make selectable/not selectable a user profile from a Service:

- In the M5000 CC Service Manager application's **[View]** menu, select **[User profiles]**.
- In the **"User profiles management"** window, you can make selectable/not selectable a user profile from the current Service version in three ways:
  - u Click on the ID of the user profile you want to make selectable/not selectable, then, in the toolbar, click:
    - either on the **Make selectable**  **button,**
    - or on the **Make not selectable**  **button**,
  - u Right-click the Identifier of the user profile you want to make selectable /not selectable and select **[Make selectable]** or **[Make not selectable]** from the pop-up menu.
  - u Double-click on the Identifier of the user profile. The user profile in question switches from "Selectable" to "not Selectable" state or vice versa.

2 To assign/unassign a user profile to/from a team:

Note: *The team must be created first, using the M5000 CC Service Manager application's **[View > Teams]** menu (see Sheet U-438).*

- *A user profile can belong to zero, one or more team(s).*

- In the M5000 CC Service Manager application's **[View]** menu, select **[User Profiles]**.
- In the **"User profiles management"** window, display the **View teams** window in one of these two ways:
  - u click on the Identifier of the user profile you want to assign/unassign then click on the **View teams**  button on the toolbar
  - u Right click on the ID of the user profile you want to assign or unassign and select **[View teams]** from the pop-up menu.
- In the **User profile teams** window, assign/unassign the user profile to/from a team in one of these three ways:
  - u click the Name of the team to which you want to assign/unassign the user profile, and then click the **Add to team** button  or the **Remove from team** button  .
  - u Click the Name of the user profile you want to assign/unassign, and then select **[Add to team]** or **[Remove from team]** in the pop-up menu.

- Double click on the name of the user profile you want to assign/unassign to/from the team. This toggles the user profile between assigned and unassigned.

- Click  to close the **"User profile teams"** window.

3 Define a user profile's skill level

- In the M5000 CC Service Manager application's **[View]** menu, select **[User profiles]**.
- In the **"User profiles management"** window, select the ID of the user profile whose skill level you want to change:
  - in **SDI** display mode, the **"Skills"** window is updated and the current user profile skill level is displayed for each skill in the Service.
  - In **MDI** display mode, click the  button or right-click and select **[View skills]** from the pop-up menu. The **"Skills"** window opens and the current skill level of the user profile is displayed for each skill in the Service.
- In the **"Skills"** window, select the name of the skill for which the level is to be modified. There are three possibilities to modify the skill level:
  - To increase the skill level of a unit, click on the  or right click and select **[Increase level]** from the pop-up menu or press the **<+>** key on the keyboard.
  - To reduce the skill level of a unit, click on the  or right click and select **[Reduce level]** from the pop-up menu or press the **<->** key on the keyboard.
  - To define the required skill level directly, click on the  or right click and select **[Define level]** from the pop-up menu or press the **<Enter>** key on the keyboard. In this case, a window opens to let you specify the skill level:
    - Press the **<Enter>** key or double click to confirm the skill level.
    - Press the **<Escape>** key on the keyboard or click on the cross in the window to cancel the operation.

4 Define the user profile ability level for each language

- In the M5000 CC Service Manager application's **[View]** menu, select **[User profiles]**.
- In the **"User profiles management"** window, select the ID of the user profile whose language skill level you want to change:
  - in SDI display mode, the **"Languages"** window is updated and the current user profile skill level is displayed for each language in the Service.
  - In **MDI** display mode, click the  button or right click and select **[View languages]** from the pop-up menu. The **"Languages"** window opens and the current skill level of the user profile is displayed for each language in the Service.
- In the **"Languages"** window, select the name of the language for which the skill level is to be modified. There are three possibilities to modify the skill level:
  - To increase the skill level of a unit, click the  button or right-click and select **[Increase level]** from the pop-up menu or press the **<+>** key on the keyboard.
  - To reduce the skill level of a unit, click on the  or right click and select **[Reduce level]** from the pop-up menu or press the **<->** key on the keyboard.
  - To define the required skill level directly, click on the  or right click and select **[Define**

level] from the pop-up menu or press the **<Enter>** key on the keyboard. In this case, a window opens to let you specify the skill level:

- Press the **<Enter>** key or double click to confirm the skill level.
- Press the **<Escape>** key on the keyboard or click on the cross in the window to cancel the operation.

U-436 : DISPLAY MENU: LANGUAGES

OBJECTIVE

- Adding/deleting some languages used by a Service.
- Defining the level of knowledge for each language of an agent.
- Personalising the structure of e-mails (only for the service managers and Conference service)

OPERATOR LEVEL

- Service manager or team manager (modification of language skill only).

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service manager or authorized team manager (see Sheet U-410).

COMMENTS

The languages defined for a Service are languages which are available for a given Service version for processing calls, e-mails or web sessions. Multiple languages can be defined for a particular Service. In inbound Services, voice messages can be played in each language defined for the Service. The agent screen can display information in any of the defined languages.

The service manager and team manager have distinct rights for the actions possible in the languages:

- Service Manager: add or delete a language and modify the language ability level of agents,
- Team manager: modify the agents' language ability level.

For the conference service only, the service manager can specify a DNIS number for each language and personalise, in each language defined, the structure of the e-mails to be sent to conference participants.

Caution: *An administrator can also modify the DNIS associated with a language. The configuration made by a service manager may be lost if an administrator makes some modifications a posteriori.*

PROCEDURE

1 Add a language (for Service managers only)

- The script must be added (see Sheet U-450) to add a language.
- In the M5000 CC Service Manager application's **[View]** menu, select **[Languages]**.
- In the toolbar of the **Languages management** window, click **Add**  .
- To add a language to the Service version, you can either enter the name in the ***Name*** combo box, or select a language from the drop-down list. The list displays some default languages that have pre-recorded sounds associated with them: French, Dutch, English Spanish and German, or languages used by the Service but in other versions.
- Optionally, enter a description for the language in the ***Description*** text box.
- For conference service only, a DNIS may be specified in the ***{DNIS for conferences}*** text box. This DNIS will immediately be taken into consideration if the service version in question is the version in production.
- click ***[OK]***.

2 Add a language (for Service managers only)

- In the M5000 CC Service Manager application's **[View]** menu, select **[Languages]**.
- Use one of the following 2 methods to delete a language:
  - Click of the name of the language you want to delete then click on the **Delete** button  in the "Languages management" window or
  - Right click on the name of the language you want to delete and select **[Delete]** from the pop-up menu.
- A warning message box appears: click ***[OK]***,

- A second message box may appear if the language is not used anymore in the Service. The dialog box will ask you if you want to delete the directory associated to the language. In this directory are stored the segment files stemming from the compilation, the users prompts and, perhaps, system prompts. If you think you do not need these files anymore, click ***Yes***.

3 Define the agent ability level for each language

The language levels may be used as a criteria to determine which agent will receive a particular call. For example, a call may only be transferred to agents who have a certain skill level (for example, level 4) in the current script languages. Skill levels are values of between 0 and 99. Level 0 is the weakest level and level 99 the strongest. For each language defined in a Service, the Service manager and/or team manager must define a skill level for each agent. There are two ways to define these skill levels:

- Use the "**Agent management"** window (**[View > Agents]**) menu,
- Use the "**Language management"** window (**[View > Languages]**) menu,

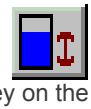
a) To define a language skill level using the "Agent management" window

u In the **[View]** menu, select **[Agents]** : in SDI display mode (see Sheet U-443), the **"Agent management"** window is accompanied, among others, by the **"Languages"** ; window in MDI display mode (see Sheet U-443), only the **"Agent management"** window is displayed.

u In the **"Agent management"** window, select the ID of the agent whose language skill level you want to change:

- in SDI display mode, the **"Languages"** window is updated and the current agent skill level is displayed for each language in the Service.
- In **MDI** display mode, click the  button or right click and select **[View languages]** from the pop-up menu. The **"Languages"** window opens and the current skill level of the agent is displayed for each language in the Service.

u In the **"Languages"** window, select the name of the language for which the skill level is to be modified. There are three possibilities to modify the skill level:

- To increase the skill level of a unit, click the  button or right-click and select **[Increase level]** from the pop-up menu or press the **<+>** key on the keyboard.
- To reduce the skill level of a unit, click on the  or right click and select **[Reduce level]** from the pop-up menu or press the **<->** key on the keyboard.
- To define the required skill level directly, click on the  or right click and select **[Define level]** from the pop-up menu or press the **<Enter>** key on the keyboard. In this case, a window opens to let you specify the skill level:

-Press the **<Enter>** key or double click to confirm the skill level.

-Press the **<Escape>** key on the keyboard or click on the cross in the window to cancel the operation.

b) To define a language skill level using the "Language management" window

u In the **[View]** menu, select **[Languages]** : in SDI display mode (see Sheet U-443), the **"Language management"** window is accompanied, among others, by the **"Agents" window**; in MDI display mode (see Sheet U-443), only the **"Language management"** window is displayed.

u In the **"Language management"** window, select the language for which you want to modify the skill level of the agents:

- In **SDI** display mode, the **"Agents"** window is updated and the current agent skill level is displayed for each language in the Service.
- In **MDI** display mode, click the  button or right-click and select **[View agents]** from the pop-up menu. The **"Agents"** window opens and the current skill level of the agent is displayed for each language in the Service.

u In the **"Agents"** window, select the name of the agent whose skill level is to be modified. There are

three possibilities to modify the skill level:

- To increase the skill level of a unit, click on the  or right click and select **[Increase level]** from the pop-up menu or press the **<+>** key on the keyboard.
- To reduce the skill level of a unit, click the  button or right-click and select [Reduce level] from the pop-up menu that appears, or press the **<->** key on the keyboard.
- To define the required skill level directly, click on the  or right click and select **[Define level]** from the pop-up menu or press the **<Enter>** key on the keyboard. In this case, a window opens to let you specify the skill level:

  -Press the **<Enter>** key or double click to confirm the skill level.

  -Press the **<Escape>** key on the keyboard or click on the cross in the window to cancel the operation.

4 Personalising the structure of e-mails (only for the service managers and Conference service)

- In the toolbar of the **Languages management** window, click the Properties button. This can also be done when the properties of a new language are defined.
- Click ***{E-mail content}***.
- In the specific part, select the **{New conference}** tab and, if necessary, indicate an introductory text which will be written at the beginning of each notification e-mail about a new conference, written in the corresponding language.
- In the specific part, select the **{Modify conference}** tab and, if necessary, indicate an introductory text which will be written at the beginning of each notification e-mail about conference modification, written in the corresponding language.
- In the specific part, select the **{Cancel conference}** tab and, if necessary, indicate an introductory text which will be written at the beginning of each notification e-mail about conference cancellation, written in the corresponding language.
- In the specific part, select the **{Record conference}** tab and, if necessary, indicate an introductory text which will be written at the beginning of each notification e-mail about conference recording, written in the corresponding language.
- In the generic part, for each set of conference data indicated in any of the e-mails, an introductory text may also be specified (for example, the start time, the "**Conference starts:**" text. may appear in front of the conference start time).
- Click ***[OK]***.

U-437 : DISPLAY MENU: SKILLS

OBJECTIVE

- To add/delete a skill used by a Service.
- To define the level of knowledge for each ability of an agent.

OPERATOR LEVEL

- Service Manager or Team Manager (depending on the tasks).

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service manager or authorized team manager (see Sheet U-410).

COMMENTS

A skill reflects the competence of an agent in a particular domain (e.g. : Information, Reservations, Claims). Skills can be used as criteria to determine which agent will receive a call or an e-mail.

The Service manage and team supervisor have distinct rights for the actions possible for skill levels:

- Service Manager: add or delete a language and modify the skill level of agents,
- Team supervisor: modify the agents' skill level.

Note: *Defining skills is optional. Without them, transfers are performed in a less selective way.*

PROCEDURE

1 Add a skill to the current Service version (for Service managers only)

- In the M5000 CC Service Manager application's **[View]** menu, select **[Skills]**.
- In the toolbar of the **"Skill management"** window, click **Add**  .
- In the ***{Name}*** text box, enter the name of the skill you want to add to the Service version.
- If you like, enter a description for the skill in the ***{Description}*** text box.
- click ***[OK]***.

2 Delete a skill from the current Service version (for Service managers only)

- In the M5000 CC Service Manager application's **[View]** menu, select **[Skills]**.
- Use one of the following 2 methods to delete a skill:
  - Click the name of the skill you want to delete then click the **Delete**  button in the **"Skills management"** window, or
  - Right click on the name of the skill you want to delete and select **[Delete]** from the pop-up menu.
- A warning message box appears: click ***[OK]***,

3 Define an agent's skill level

The skill levels may be used as a criteria to determine which agent will receive a particular call. For example, a call may only be transferred to agents who have a certain skill level (for example, level 4) in a given skill. Skill levels are values of between 0 and 99. Level 0 is the weakest level and level 99 the strongest. For each skill defined in a Service, the Service manager and/or team manager must define a skill level for each agent. There are two ways to define these skill levels:

- Use the "**Agent management"** window (**[View > Agents]**) menu,
- Use the "**Skills management"** window (**[View > Skills]**) menu,

a) Define a skill level via the "Agent management" window.

- In the **[View]** menu, select **[Agents]** : in SDI display mode (see Sheet U-443), the **"Agent management"** window is accompanied, among others, by the **"Skills"** window; in MDI display mode (see Sheet U-443), only the **"Agent management"** window is displayed.
- In the **"Agent management"** window, select the ID of the agent whose skill level you want to

change:

- in SDI display mode, the **"Skills"** window is updated and the current agent skill level is displayed for each skill in the Service.

- In **MDI** display mode, click the  button or right-click and select **[View skills]** from the pop-up menu. The **"Skills"** window opens and the current skill level of the agent is displayed for each skill in the Service.

u In the **"Skills"** window, select the name of the skill for which the level is to be modified. There are three possibilities to modify the skill level:

- To increase the skill level of a unit, click on the  or right click and select **[Increase level]** from the pop-up menu or press the **<+>** key on the keyboard.

- To reduce the skill level of a unit, click on the  or right click and select **[Reduce level]** from the pop-up menu or press the **<->** key on the keyboard.

- To define the required skill level directly, click on the  or right click and select **[Define level]** from the pop-up menu or press the **<Enter>** key on the keyboard. In this case, a window opens to let you specify the skill level:

  -Press the **<Enter>** key or double click to confirm the skill level.

  -Press the **<Escape>** key on the keyboard or click on the cross in the window to cancel the operation.

b) Define a skill level via the “Skills management” window.

u In the **[View]** menu, select **[Skills]** : in SDI display mode (see Sheet U-443), the **"Skills management"** window is accompanied, among others, by the **"Agents"** ; in MDI display mode (see Sheet U-443), only the **"Skills management"** window is displayed.

u In the **"Skills management"** window, select the skill for which you want to modify the skill level of the agents:

- in SDI display mode, the **"Agents"** window is updated and the current agent skill level is displayed for each agent in the Service.

- In **MDI** display mode, click the  button or right-click and select **[View agents]** from the pop-up menu. The **"Agents"** window opens and the current skill level of the agent is displayed for each agent in the Service.

u In the **"Agents"** window, select the name of the agent whose skill level is to be modified. There are three possibilities to modify the skill level:

- To increase the skill level of a unit, click on the  or right click and select **[Increase level]** from the pop-up menu or press the **<+>** key on the keyboard.

- To reduce the skill level of a unit, click on the  or right click and select **[Reduce level]** from the pop-up menu or press the **<->** key on the keyboard.

- To define the required skill level directly, click on the  or right click and select **[Define level]** from the pop-up menu or press the **<Enter>** key on the keyboard. In this case, a window opens to let you specify the skill level:

  -Press the **<Enter>** key or double click to confirm the skill level.

  -Press the **<Escape>** key on the keyboard or click on the cross in the window to cancel the operation.

U-438 : DISPLAY MENU: TEAMS

OBJECTIVE

- To add/delete a team to or from a Service version.
- To enable/remove the team supervision for an agent.
- To enable/(prohibit) the team supervisors to send personal messages to the wall displays.

Note: To assign/unassign an agent to/from a team, use the M5000 CC Service Manager application's **[View > Agents]** menu (see Sheet U-434).

OPERATOR LEVEL

- Service manager and team manager or supervisor depending on the tasks.

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service manager or authorized team supervisor (see Sheet U-410).

COMMENTS

A team is a set of agents who have shared characteristics. Like skills and languages, teams are used as decision criteria to determine which agent will receive a call. The Service manager defines teams and chooses members of the teams among agents of the Service. He also defines the team supervisors. The team supervisor has no role to play in team creation, team removal or the distribution of agents between teams.

Note: Defining teams is optional. Without them, transfers are performed in a less selective way.

PROCEDURE

1 Add a team to the current Service version

- In the M5000 CC Service Manager application's **[View]** menu, select **[Teams]**.
- In the **"Teams management"** window toolbar, click the **Add team**  button.
- In the ***{Name}*** text box, enter the name of the team you want to add to the Service version.
- If you like, enter a description for the language in the ***{Description}*** text box.
- click ***[OK]***.

2 Remove a team from the current Service version

- In the M5000 CC Service Manager application's **[View]** menu, select **[Teams]**.
- You may remove a team in one of these two ways:
  - u Click on the Name of the team you want to remove, and on the toolbar in the **"Teams management"** window, click on the **Delete** button  .
  - u Right click on the name of the language you want to delete and select **[Delete]** from the pop-up menu.
- A warning message box appears: click ***[OK]***,

3 Enabling / Disabling team management and supervision (for Service managers only)

- In the M5000 CC Service Manager application's **[View]** menu, select **[Teams]**.
- In the **"Teams management"** click on  if you are in **MDI** display mode. In SDI mode, you should see the agent window open. Click the name of the team for which you want to define a team manager or supervisor.
- In the **"Team - Agents"** window:
  - u Right-click the name of the agent chosen and select **[Enable team management**, or **[Enable team supervision]**.

- u Click the name of the agent chosen and click Modify rights. In the drop down list, select either **[Team manager]** or **[Team supervisor]**. To cancel any agent management or supervision rights, select **[No rights]**.

4 Allowing/prohibiting team supervisors to send personal messages to the wall displays (only for service managers).

- In the M5000 CC Service Manager application's **[View]** menu, select **[Teams]**.
- In the **"Team - Agents"** window:
  - u Right-click on the name of the agent defined as the "Team supervisor" concerned and select **[Enable personal messages]**, or on **[Disable personal messages]** (if this privilege has to be taken away from him) in the pop-up menu that appears, or
  - u Right-click the name of the agent defined as the "team supervisor" concerned and click **Enable personal messages**  , or **Disable personal messages**  if this privilege has to be taken away from him.
    The value **"Yes"** or **"No"** of the **"personal messages to wall displays"** column in the **"Team - Agents"** window is reversed accordingly.

U-439 : DISPLAY MENU: ADD-ON MODULES

OBJECTIVE

- Reserved for future use.

U-440 : DISPLAY MENU: SOUNDS

OBJECTIVE

- To manage the system sounds:
  - Create and record sounds:
    - Add a new user voice message(see step **3** in this sheet),
    - Add a new PBX prompt (see step **4** in this sheet),
    - Open a sound (voice message) to record it in a language (see step **5** in this sheet),
    - Import a Wave file into a PBX prompt (see step **6** in this sheet),
  - Play voice messages:
    - Play all the voice messages displayed in a language (see step **7** in this sheet),
    - Play a single voice message in a language (see step **8** in this sheet),
    - Play a single voice message in all languages (see step **9** in this sheet),
    - Play external files or elements via the "PlayVoiceMessage" node (see step **10** in this sheet),
  - Modify the sounds:
    - Refresh the voice message durations (see step **11** in this sheet),
    - Modify PBX prompt properties (see step **12** in this sheet),
  - Manage the "Required" or "Not Required" sounds for one or more languages:
    - Mark a single sound as "Required" / "Not Required" in a language (see step **13** in this sheet),
    - Mark all the sounds as "Required" / "Not Required" in a language (see step **14** in this sheet),
    - Check that all the voice messages required are present (see step **15** in this sheet),
    - Remove the voice messages from the current Service version (see step **16** in this sheet).

OPERATOR LEVEL

- Service Manager

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized Service manager (see Sheet U-410).

PROCEDURE

1 Access the "Sound management" window:

In the M5000 CC Service Manager application's **[View]** menu, select **[Sounds]** . The **"Sound management"** window opens:

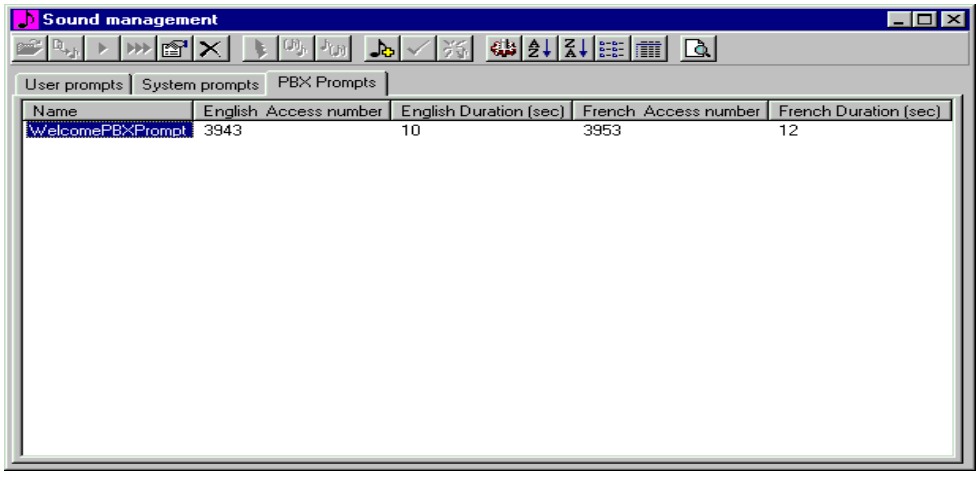


Figure 10.49 M5000 CC SERVICE MANAGER APPLICATION "SOUND MANAGEMENT" WINDOW

2 Access the {User voice messages}, {System voice messages} or {PBX prompts} tabs in the "Sound management" window

In the "**Sound management"** window, these 3 tabs may be accessed in 2 ways:

- by clicking directly on the label of the corresponding tab,
- depending on the tab that is being used, by clicking on the **Toggle user/system/PBX prompts** button  in the toolbar until the tab that corresponds to the function you want is activated:
  - u **{User prompts}** tab,
  - u **{System prompts}**tab
  - u **{PBX prompts}** tab.

3 Add a new user prompt

In the **{User prompts}** tab:

- On the toolbar, click the **Add**  button. You may also right click anywhere in the **"Sound management"** window then select **[Add]** from the pop-up menu.
- Enter a name for this new voice prompt in the ***{Name :}*** text box In the **"Sounds properties"** window,
- If you like, enter a description for the sound in the ***{Description}*** text box.
- By default, each language must have one "Required" sound. If you don't want the new sound to be required for a language, double-click this language in the **Required** list. This toggles the sound between "Required" and "Not required" for this language.
- Click ***[Validate]***.

4 Add new PBX prompt

In the **{PBX prompts}** tab.

- On the toolbar, click the **Add**  button. You may also right click anywhere in the **"Sound management"** window then select **[Add]** from the pop-up menu. The **"Add a new prompt"** window opens.
- Enter a name for the new prompt in the ***{Name }*** text box:
- Each PBX prompt must be defined in all the possible languages. Otherwise, the ***OK*** button remains disabled and it is impossible to confirm the new sound properties. Right click on each language then select **[Properties]** from the pop-up menu.
- The **PBX Prompt Properties** window is displayed.
  - u Enter the ***{Message call pit group}*** that corresponds to the current prompt for the current language as well as the ***{duration}*** of this prompt.

- u Click ***[Validate]***.

- Once the properties are specified for each language, click the***[Validate]*** button in the **"Add a new PBX prompt"** window. The list of PBX prompts in the **"Sounds management"** window is updated.

5 Open a sound (voice prompt) for recording in one language

- In the **"Sounds management"** window, open a sound in a language using one of these ways:

  - u Click the ***{Name}*** of the sound you want to open, and click the **Open** button  in the toolbar.

    You can also right-click the **Name** of a sound and click Open in the pop-up menu. You may also double click on the ***{Name}***.

    If more than two languages are defined in the current Service version, a dialog box appears. Select the language in which you want to open the sound, and click ***OK***.

  - u Click the ***{Name}*** of the sound you want to open. Click the column header of the language in which you want to open the sound, and click **Open**  .

- The sound recorder is launched. Record the sound and save it using the **[Save]** command in the **[File]** menu. You can use the default filename.

  Note: *If you record a new sound on an existing one, check that the length of the new sound is not smaller than the previous one. If it is smaller, check in the **[Edit]** menu of the sound recorder the **[Delete after current position]** option at the end of the recording.*

6 To import a Wave file into a prompt

- You may display the **"Import"** dialog box in different ways:

  - u In the **Sounds management** window, click the ***{Name}*** of the prompt for which you want to import a wave file. Then, click the **Import wave file**  button on the toolbar.

  - u You can also right-click the ***Name*** of the sound for which you want to import a wave file.

- If more than two languages are defined in the current Service version, a dialog box appears. Click the language for which the wave file has to be imported, and click ***OK***.

- Click the column header of the language for which the wave file has to be imported, and click ***Import***.

- Select the wave file in the **Import** dialog box.

- Click ***[Validate]***.

  Note: *If you import a wave file from another service, pay attention to import the file in the right language.*

7 Play all shown prompts in a language

In the **Sounds management** window, play all shown sounds in one language in one of these two ways:

- Click the **Play all shown sounds in one language**  button.

  If more than two languages are defined in the current Service version, a dialog box appears. Click the language in which you want to play the sounds, and click ***OK***.

- Click the column header of the language in which you want to play the sounds, and click ***Play all***.

8 Playing a single prompt in one language

In the **Sounds management** window, you may play a sound in one of the two ways:

- Click the ***{Name}*** of the sound you want to play. On the toolbar, click the **Play**  button.

  If more than two languages are defined in the current Service version, a dialog box appears. Select the language in which you want to play the sound and click ***OK*.**

- Click the ***{Name}*** of the sound you want to play. Click the column header of the language in which you want to play the sound, and click ***[Play]***.

9 Playing a single prompt in all languages

In the **Sounds management** window, play the sound in all languages using one of these ways:

- Click the ***{Name}*** of the sound you want to play. On the toolbar, click the **Play in all languages**  button.
- You may also right click on the ***{Name}*** of a sound then select **[Play in all languages]** from the pop-up menu.

10 Playing external files or segments

To play external files or segments do not use the **[View > Sounds]** menu but edit the **"PlayPrompt"** node and configure the necessary parameters (see § 13.2.2.4).

Note: *The message played to the caller can be composed of a single sound file or several elements.*

11 Refreshing prompt durations

Sound files linked to user prompts can be modified using multimedia tools. When sounds change, the Service manager can refresh the prompt durations

In the **Sounds management** window, you can either

- On the toolbar, click the **Add**  button, or
- Right click in the window and select **[Refresh durations]** in the pop-up menu.

12 Modifying the properties of a prompt

- In the **Sounds management** window, click on the **{PBX prompts}**, select one of the defined PBX sounds then:
  - u Click on the **Properties**  button or
  - u right click on the selected element then select **[Properties]**.
- The **"Add a new prompt"** window opens. The prompt's name can't be modified. However, you may modify he message call pits group and the duration for each language by right-clicking on the language and selecting **Properties**.
- The **"PBX Prompt properties"** window is displayed. Where necessary change the message call pits group and the duration and click on ***[OK]***.
- Click ***OK*** in the New PBX prompt window. The new properties are taken into account.

13 Mark a single sound as "Required" / "No required" in a language

Note: *Sounds can be marked as Required or Not Required in one or more languages. If a sound is not required, the script compilation will not check if it was recorded or not. On the contrary, if the sound is required, the script compilation will fail if it is not recorded. Sounds that are not required are listed between brackets.*

To mark a single sound as "Required" / "Not required" in a language

- Display the **"Sounds properties"** window, either by clicking the ***{Name}*** of a sound and then clicking the **Properties** button  , or by right-clicking the ***{Name}*** of a sound and then selecting **[Properties]**.
- In the **"Sounds properties"** window, double click on a name of a language to toggle the sound between "Required" and "Not required" for this language.
- Click ***[Validate]***.

Note: *You may also right-click on the sound name to mark as "Required" / "Not required", and choose the appropriate option from the pop-up menu.*

14 To mark all sounds as "Required" / "Not required" in a language

In the **Sounds** management window, you may mark all sounds as "Required" / "Not required" in one of two ways:

- Click the **Mark as required**  button or the **Mark as not required**  button. If more than two languages are defined in the current Service version, a dialog box appears. Click the language for which you want to set sounds as "Required" / "Not required" and click on ***[OK]***.

- Click the header of the Language column for which you want to set sounds as "Required" / "Not required" and click on **[Mark as required]** or **[Mark all as not required]**.
- Click ***[Validate]***.

15 Checking that all required prompts are present

In the **"Sound management"** window, you may check the sounds in two ways:

- On the toolbar, click the **Check required sounds**  button.
- Right-click the ***{Name}*** of any sound, and click **[Check required sounds]** in the pop-up menu.

Note: *If some required sounds are missing, a dialog box appears. Follow the instructions.*

16 Delete prompts from the current Service version

In the **"Sounds management"** window, you may delete a sound in two ways:

- Click the ***{Name}*** of the prompt you want to delete, and on the toolbar click on the **Delete**  button or
- Right click on the ***{Name}*** of the prompt you want to delete and select **[Delete]** from the pop-up menu.

U-441 : DISPLAY MENU: TREE STRUCTURES

OBJECTIVE

- Managing the trees and nodes of a script:
  - Adding a new tree to the current script (see step **2** in this sheet),
  - Importing a tree from other Service versions (see step **3** in this sheet),
  - Adding a local variable to a tree (see step **4** in this sheet),
  - Adding an argument to a tree (see step **5** in this sheet),
  - Managing the nodes of a script (add, delete, move, modify properties, insert) (see step **6** in this sheet),
  - Printing scripts (see step **7** in this sheet),

OPERATOR LEVEL

- Service Manager

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized Service manager (see Sheet U-410).

PROCEDURE

1 Access the "Tree management" window:

- In the M5000 CC Service Manager application's **[View]** menu, select **[Trees]**: The "Tree management" **window** opens.

2 Add a new tree to the current script

In the **Trees management** window

- Click **Add**  or
- right click in the window and select **[Add]** in the pop-up menu.

Specify the tree characteristics:

- Enter an identifier in the ***Name*** text box.
- You may enter a brief description of the role of the tree in the ***{*Description*}*** text box.
- Choose the category of the new tree (see § 8.5.4.1) by checking the appropriate radio button:
  - ***[Voice User]***,
  - ***[Voice Server with IVR]***,
  - ***[Voice Server without IVR]***,
  - ***[E-mail Server]***
  - ***[E-mail User]***
  - ***[Web Server]***.
- If the tree is to be the starting tree for the application, check ***[Starting tree]***.

Note: *If no starting tree is defined, there will be an error during script compilation. In most cases (except for outgoing scripts), the start tree must be a voice server with IVR or a voice server without IVR. A UI starting tree is only mandatory in two cases: for an outbound script and if there is a transfer node in the main Voice Server with IVR tree (or in the main Voice Server without IVR tree).*

3 Importing trees from other Service versions

A tree built in a particular Service version can be used in another one.

This is a convenient way to add a tree to a Service version in the case a desired feature was previously realized in another Service version: the corresponding tree can simply be imported to the current Service version.

To import a tree from another Service version:

- In the **"Trees management"** window :
  - u Click the **Import tree** button  or
  - u right click in the window and select **[Import]** in the pop-up menu.
- Select the Service version from which you want to import a tree: The "Import tree" window opens:

  You can move a single tree from the ***Available trees*** list to the ***Imported trees*** list in several ways:
  - u Selecting a tree name with the mouse and then clicking the simple arrow  button, or
  - u double-clicking on a tree name in the Available trees list.
  - u You can also move all trees by clicking the double arrow  button. Trees can also be moved back to the ***Available trees*** list by double-clicking in the ***Imported trees*** list or clicking the buttons in the opposite direction.
- A default new name is generated by the system for all imported trees. You can change it by clicking two times (slowly, in order not to double-click on them) on an item of the ***Imported trees*** list, in the ***New name*** column.
- Click ***[Validate]***.

Note: *Only trees from Services for which the current Service manager is also manager are available for importation.*

Note: *Trees can only be exchanged (imported) between Services managed by the same Service manager. A Service manager cannot import a tree from a Service version that is not managed by him.*

Note: *When a tree is imported, only the tree, its local variables and arguments are imported. The global variables are not automatically imported. The service manager must create again (using the same name) in the service version the global variables used per imported tree, or edit the nodes to use other variables, otherwise the compilation of his script will fail. Generally, external objects (sounds used in the "PlayVoiceMessage" node, teams, skills, languages used in the "TransferCall" node) will not be imported.*

Note: *The imported tree may contain nodes that depend on a language (example: "Information" node, "ReplyEmail" node, etc.). Often, the languages of the imported tree and those of the existing tree are not the same: in this case, a message is displayed during import to inform the service manager that the content of some nodes have not been fully respected during the import operation.*

4 To add a local variable to a tree

A local variable is a variable that belongs to a specific tree. Local variables are initialized each time the corresponding tree is executed.

The scope of a local variable is limited to the tree in which it is defined. Local variables cannot be shared between trees.

Local variables are only visible in the tree where they are defined. They can be used to exchange values from one node to another in the same tree.

Once a tree is created, local variables can be added to it.

To add a local variable to a tree:

- In the **"Trees management"** window, select a tree by clicking its name.
- Click on the **Open**  button or right click and select **[Open]** in the pop-up menu.
- In the **Tree** window, click on the **{Variables}** tab.
- In the ***{Local variables}*** box, click on the **Add**  button or right click and use the pop-up menu.
- Type an identifier for the variable in the ***Name*** text box.
- Select a ***{Type}*** from the drop-down list.

- Enter an ***Initial value*** for the variable if necessary.

Four local variables are created by default on any new tree and are chosen by default as return code variable for the nodes added to or inserted in it. Of course, it is obligatory to use them. It is possible to delete them, but they will be automatically recreated when a new node is added.

5 Adding an argument to a tree

Trees can be called by other trees using a "Gosub node" (see § 13.2.4.4). Called trees can exchange data with calling trees reading and writing values in their arguments.

Arguments are passed by reference, so any change to their value by the called tree is visible to the calling tree.

Once a tree is created, arguments can be defined for it.

To add an argument to a tree

- In the **"Trees management"** window, select a tree by clicking its name.
- Click on the **Open**  button or right click and select **[Open]** in the pop-up menu.
- In the **Tree** window, click on the **{Variables}** tab.
- In the ***{Arguments}*** box, click on the **Add**  button or right click and use the pop-up menu.
- Type an identifier for the variable in the ***Name*** text box.
- Select a ***{Type}*** from the drop-down list.

6 Managing the nodes of a script

In the "Tree management" window, double click on the name of a tree (node) to open it (see Figure 10.50) : the script edit window opens:

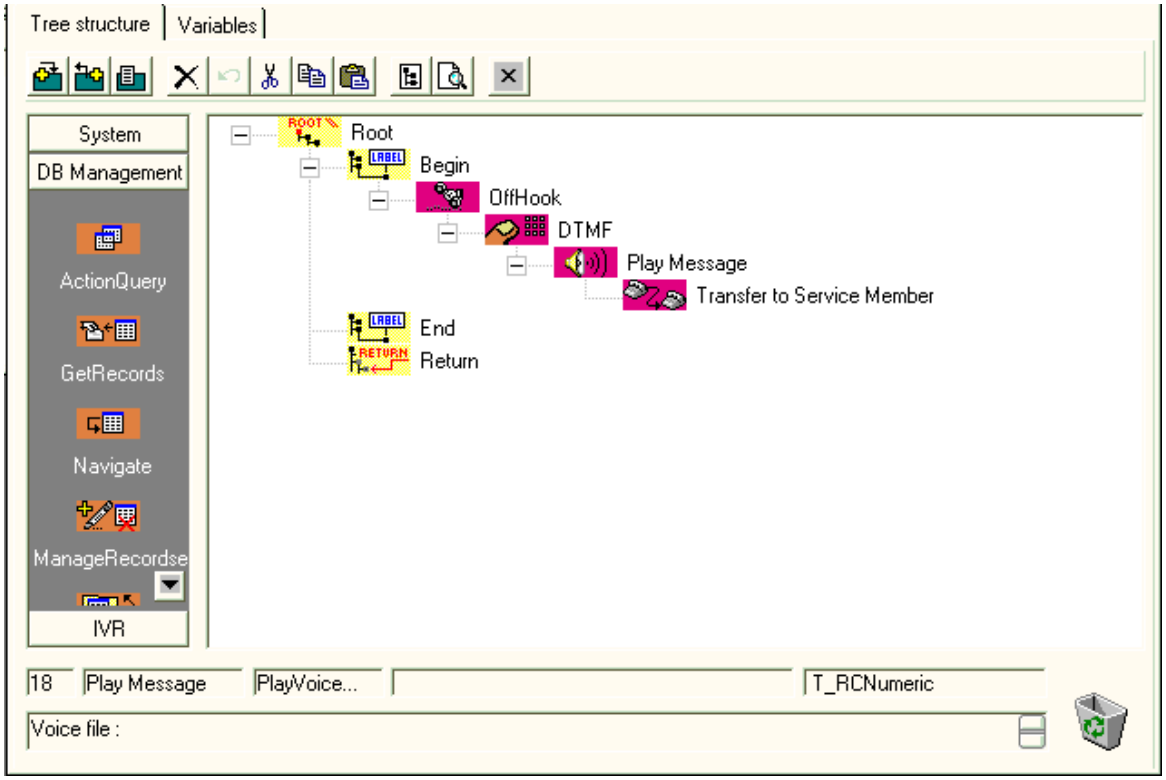


Figure 10.50 APPLICATION "SCRIPT EDITION" WINDOW M5000 CC SERVICE MANAGER

In the script editing window, you may:

a) Add a node to the script:

- by dragging it from the nodes toolbar to the location of the script where you want to insert it

- by clicking on the Click the **Add** button  .

b) Delete a node and its descendent branch :

- by dragging it to the trash bin can in the lower right corner.
- by clicking on the **Delete** button  .

c) Move a node:

- Move a node by dragging it to the desired location or by cutting and pasting it on the desired location.

d) Modify the properties of a node:

- by double clicking on this node,
- by double clicking on the **Update** button  .

The nodes in the nodes toolbar are sorted by Add-On Modules.

e) To insert a node:

- click its Add-On Module on the toolbar. This will display all nodes in the Add-On Module. Then you can drag 'n' drop the desired node.
- Click the **Insert**  button.

Each time a node is added or inserted, a default return code variable is chosen automatically. (Except for nodes that do not need any return variable). It is of course possible to modify this selection.

7 To print scripts

To choose the printing setup:

- In the **"Trees management"** window, click on the **Tree view setup**  **button.**
- Choose the settings and click ***OK*** :
  - Default settings, custom settings or standard settings
  - View icons, Only visible nodes and/or Only selected branch

To print scripts:

- In the **"Trees management"** window, click on the **Print Preview**  button.
- Choose the printing options and click on ***[View]*** :
  - "Tree" or "listing".
  - "Whole tree" or "Selected branch".
  - View icons, With local variables and arguments and/or Only visible nodes.
- An HTML report will be output in Internet Explorer.
- To print this document, use the normal Internet Explorer print option.

U-442 : DISPLAY MENU: VARIABLES

OBJECTIVE

- To manage the "global" variables of a script (add, edit properties)

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized Service manager (see Sheet U-410).

COMMENTS

- Refer to the general information about the intrinsic or user global variables in § 8.5.6.

PROCEDURE

1 Access the "Global variable management" window:

- In the M5000 CC Service Manager application's **[View]** menu, select **[Variables]**: The **"Global variable management"** window opens.

2 Add a global variable to a script

In the **Global variables management window,**

- Click **Add**  or
- right click in the window and select **[Add]** in the pop-up menu.

In the **"Global variable properties"** window, enter the characteristics of the variable.

- Enter its identifier in the ***{Name}*** text box.
- Select a ***{Type}*** from the drop-down list (see note),
- Enter its ***{Initial value}*** where applicable (see step 3-a below).
  If no initial value is specified, the tree must be built in such a way that a value is assigned to the variable before it is read.
- If you want the variable to appear in statistics:
  - u if you are using the standard statistical database, check the ***[Include in statistics]*** box (see step 3-b below),
  - u if you are using an external database, you have to use it in a stored procedure instance (see "Replication" in Sheet U-320) like any other field of the "LongTermStatistics.mdb" database.
- If you want the variable to appear on the agent's screen, select one of the 3 available fields in the ***Include in User display*** (see step 3-c below).

Note: *If the **{Type}** is **"Derived"** you must link this new global variable to an existing intrinsic one.*

3 To edit the properties of a global variable

In the **"Global variable management"**, window, click the button used to edit the selected variable; the **"Global variable properties"** window opens.

Follow the specific instructions for the following parameters:

a) Initialize the variable value

A variable can receive an initial value (corresponding to the variable type) upon creation (***{Initial value}*** entry field). This value is defined in the variable definition part of the script (for global variables) or the variable definition part of the tree (for local variables).

Particular cases

- u Variables of type **Set** have no initial value. They are always created empty and elements are added one at a time during the variable existence.
- u Variables of type **"Derived"** have the initial value of the associated intrinsic variable.

b) Include the variable in the statistics

When the call or e-mail processing operation is finished, the values of some global variables are stored in the statistics tables. In the LongTermStatistics.mdb database (see § 12.3.3), these variables are backed up in the CallUserDefinedDateVariables table (see § 12.3.3.12),

CallUserDefinedNumberVariables (see § 12.3.3.13) or CallUserDefinedTextVariables (see § 12.3.3.14) depending on their type. These values may then be used in the reports.

c) Include a variable in the user display

A global variable may be displayed in the Mitel 5000 Contact Center User interface. For this, select one of the available three fields in the ***{Include in user display}*** drop-down list when defining the global variable in the **"Global variables properties"** window.

When the agent receives a call or selects an e-mail in the pool, he then receives the information which has been stored in the variables and is displayed in the status bar located at the bottom of the window.

Nota :

- *Some variables may contain some URLs, network paths or e-mail addresses which will be recognised by the system when they are displayed in the ad hoc fields of the user application. These function is only available for incoming calls and e-mails, since outgoing calls do not use the available variables. Given the potential length of this information, the links will be displayed to the user in a simplified form, for example:*

  http://www.google.be/ig?hl=fr will become www.google.be

  \\NomHote\AFS\Version10.1\Services\TechnicalSupport\M7480Routing.mdb will become M7480Routing.mdb

  \\NomHote\AFS\Version10.1\Services\TechnicalSupport\ will become Technical Support.

  However, the user will see the complete value of the information in his or her browser status bar.

U-443 : DISPLAY MENU: FILTERS

OBJECTIVE

- To manage the filters for a Service:
  - Add a new filter (see step **1** in this sheet),
    - u Call filtering (see step **d**),
    - u Mixed filtering (call and agent) (see step **e**),
    - u Agent filtering (see step **g**),
    - u Filtering of calls / e-mails on the basis of agent properties (see step**h**),
  - Edit the properties of an existing filter (see step **2** in this sheet),
  - Delete a filter (see step **3** in this sheet),

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized Service manager (see Sheet U-410).
- A filter can only be defined if he following conditions are met:
  - an inbound Service is opened by a Service manager,
  - its script is loaded

COMMENTS

Creating a filter involves defining one or more conditions for "calls" (voice, e-mails and web sessions) and/or agents. For each filter defined, all the real time statistics will be re-computed (if the ***[Use with real-time statuses]*** and/or ***[Save filtered statuses]*** properties are selected in the statistics) depending on whether or not the defined conditions are respected. Each condition defined does not normally involve all statuses, only some. The statuses which are not concerned keep the non-filtered value.

Let us take the filter below as an example: The agent must have skills in English greater than or equal to 50. Imagine that we have 3 agents "Connected" and "Ready", 2 of whom have a language level equal to 75 and 1 a level equal to 25. If we look at the **"Number of agents "Ready"** status, filtered this will have the value 2, while unfiltered it will have the value 3. Only the statuses that relate to agents will be concerned by this filter. The other statuses, such as the "Total number of calls" and so on will not be affected and the unfiltered value will be displayed for the filtered value.

Comments:

- the user can ask for each filter defined not to be used with real time statuses.
- the user can ask, for each filter defined, that the passing filter identifier be saved or not saved in the statistics.
- the user can ask, for each filter defined, that the passing filter identifier be saved or not saved in the statistics.

PROCEDURE

1 Access the "Filters" window

- In the M5000 CC Service Manager application's **[View]** menu, select **[Filters]**: the "Filters"**window**opens (see Figure 10.51):

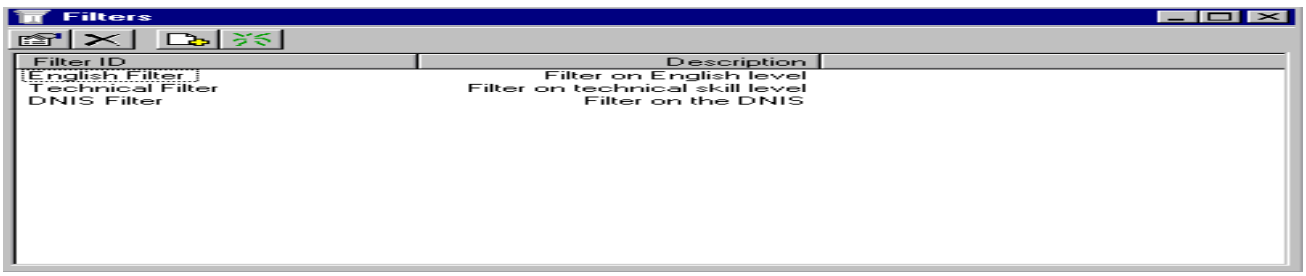


Figure 10.51 APPLICATION "FILTERS" WINDOW M5000 CC SERVICE MANAGER

2 Add a new filter

Note: *When a filter is created, if you activate the filtered status back-up option in the statistics, new statistical tables will be created in the "Statistics.cst", "Statbuffer.cst" and "StatRecycler.cst" databases. These statistical tables are deleted when the filter or corresponding Service are deleted.*

a) General method:

In the**"Filters"** window:

- click on the **Add**  button or
- right click in the window and select **[Add]** in the pop-up menu.

The **"Filter Properties"** window opens (see Figure 10.52). In this window, you can define the properties of the new filter which are :

- ***Filter ID}*** : this property must be defined (empty string not allowed) and can't be numeric. Its maximal length has been fixed to 17 characters. The same filter Id can't be used twice for the same Service,
- the ***{Filter Description}*** field: this property is optional. Its maximal length is fixed to 255 characters,
- ***[Use with real-time statuses]*** check box: the filter may be used with the real-time statuses when this option is activated (it may be displayed in the status bars and the diagrams),
- ***[Save passing filter in statistics]*** check box: if this option is validated, the filter ID will be saved in the statistics' "CallsFilters" table (see Section 12.3.3.14) and during the replication process a new element will be added to the "InboundCallsPerService*" table (see Section 12.3.3.15) of the "LongTermStatistics.mdb" database.
- all of the conditions that you want to define for the filter divided between tabs:
  - The **{Call Part}** tab manages the conditions on the basis of the properties related to the calls,
  - the **{Agent Part}** tab manages the conditions on the basis of the properties related to the agents,
  - the **{Permissions}** tab is used to grant authorization for the use of the filter.

Syntax rules:

The filter definition contain three parts, but it is not mandatory to create condition(s) in each of those three parts. Each of those parts, represented by a different tab in the form, can be composed of maximum three conditions. If you choose to define several conditions in the same part, you have to link them by "AND" or "OR" operator(s).

Note: *when the three conditions of a part are defined, the two first will be associated before combining with the third:*

""(condition1 AND condition2) OR condition3" will be saved and not "condition1 AND (condition2 OR condition3)".

The parentheses that appear in the window when you choose the third property are used to remind you of this.

The general format of a condition is :

Property	Operator1	Value1	(Operator2)	(Value2)

According to the property, the operator 2 and value 2 are available or not.

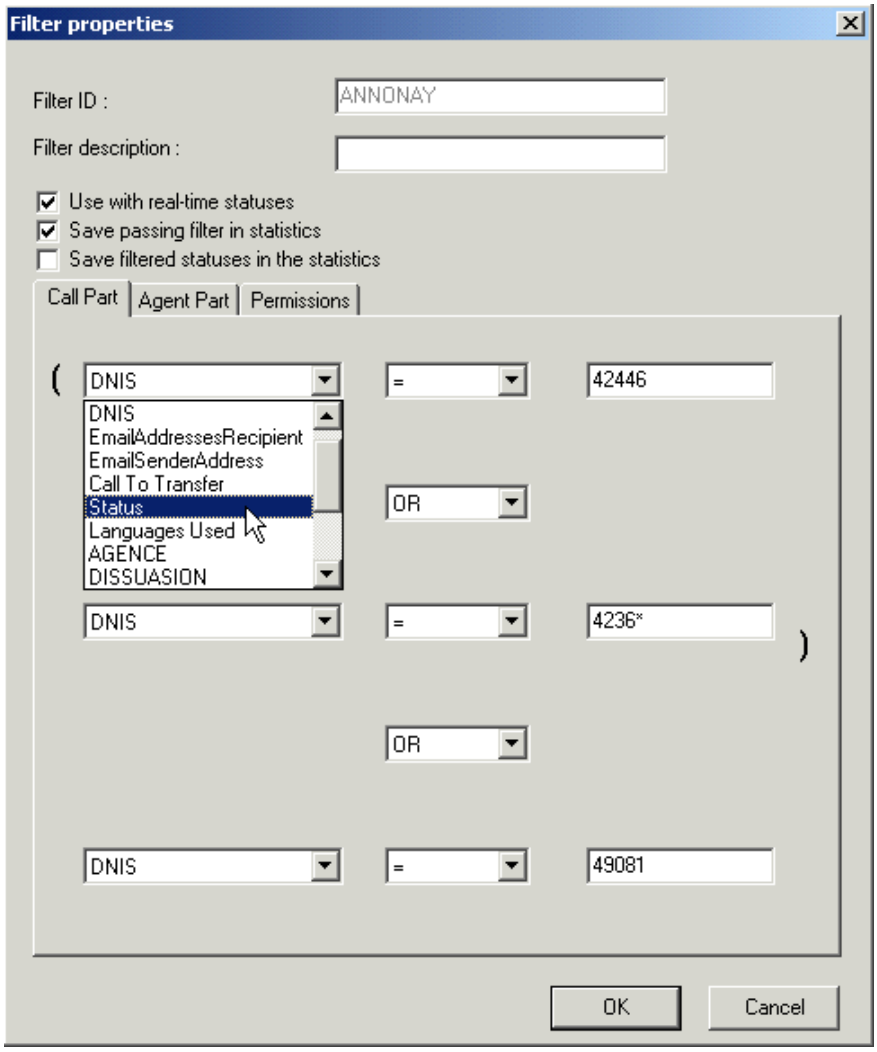


Figure 10.52 APPLICATION "FILTER PROPERTIES" WINDOW M5000 CC SERVICE MANAGER

b) Defining the criteria of a filter in the {Call Part} tab

In this tab, you can define conditions based on the following properties, which are **related to the call or the e-mail:**

- CLID
- DNIS
- Recipient e-mail address
- Sender's e-mail address
- Call To Transfer
- Status
- Languages Used
- Global variables: variables you have defined

Three types of call filter can be defined:

- call / e-mail filtering on the basis of the call properties (see part **d)** for more),
- call / e-mail filtering based on the properties of the agents who process or may process the request (see **Agent Part}** tab in part **h)**)
- mixed filter which uses the constraints of both categories (calls and agents) (see part **e**),

Below is a table with the possible operator(s) and value(s) according to the property chosen for the definition of the **{Call Part}** conditions.

Tableau 10.2 TABLE OF OPERATORS AND VALUES POSSIBLE IN THE {CALL PART} TAB

PROPERTY	OPERATOR 1	VALUE 1	OPERATOR 2	VALUE 2
CLID	**= ; <>**	Enter a form of research (see definition in § 1.4) in the text box	/	/
DNIS	**= ; <>**	Enter a form of research in the text box	/	/
Recipient e-mail address	**= ; <>**	Enter a form of research in the text box Max. length = 40 characters	/	/
Sender's e-mail address	**= ; <>**	Enter a form of research in the text box Max. length = 40 characters	/	/
Status	**IN**	Select a value from the list: DCP, HOLD, IVR, PCP, WAIT, EmailServer, EmailWait, EmailUser	/	/
Call To Transfer	**=**	True/False	/	/
Languages Used	**IN**	Select a value from the list. This list contains the names of the languages defined for the Service	/	/
A Global variable of type "numeric"	**< ; <= ; = ; > ; >= ; <>**	Enter value in a textbox	< ; <= ; = ; > ; >= ; <>	Enter value in a textbox
A Global variable of type "string"	**= ; <>**	Enter a form of research in the text box Max. length = 40 characters	/	/
A Global variable of type "date"	**=**	Enter value in a textbox	/	/
A Global variable of type "numeric"	**=**	Enter a value in the text box. Multiple values are separated by ";"	/	/

c) Form matching : authorized syntax

This paragraph makes a few precisions in relation to the "=" operator by form matching.

The forms authorized for form matching must obey the syntax of the **"Like"** operator in Visual Basic programming language, which is used to make comparisons of the **"Like"** form string type.

- Form syntax:
  Special characters, lists of characters or character ranges, in any combination may be used for form matching. The following table indicates the characters authorized in the form and their correspondence.

Tableau 10.3 FORM SYNTAX

CHARACTERS IN THE FORM	CORRESPONDENCE IN THE STRING
?	Any character
*	Zero or more characters
#	A single digit
[carlist]	A single character that belongs to carlist.
[!carlist]	A single character that does not belong to carlist.

- Finding a special character:
  To include the special characters question mark (?), hash (#) and asterisk (*), put them in brackets.
- Defining ranges:
  By using the dash (-) to separate the upper and lower bounds of a range, carlist corresponds to a character range. For example, [A-Z] corresponds to an upper case character that belongs to the range. Multiple ranges may be included in carlist with limiters.
  An exclamation mark (!) at the start of carlist means that the correspondence exists if any character, except those in carlist is found in the string. When used outside brackets the exclamation mark corresponds to itself.
  A dash (-) may appear either at the start (after the exclamation mark if used) or at the end of carlist to correspond to itself. At any other location in carlist the dash is used to define a character range.
  When a character range is specified it must appear in ascending alphabetical order. [A-Z] is a valid form but [Z-A] is not.
  The [] character sequence is considered as an empty string ('').
- Examples:
  - "aBBBa" Like "a*a" returns True.
  - "F" Like "[A-Z]" returns True.
  - "F" Like "[!A-Z]" returns False.
  - "a2a" Like "a#a" returns True.
  - "aM5b" Like "a[L-P]#[!c-e]" returns True.
  - "BAT123khg" Like "B?T*" returns True.
  - "CAT123khg" Like "B?T*" returns False.

d) Filter on call properties

Different intrinsic call properties can be used to filter calls. For example, the DNIS (e.g.: evaluating information on all calls for which the DNIS = 1234) and the CLID can be used. In addition to certain intrinsic call properties all user global variables can be used. This can be very useful for defining in the script a particular call sub-group which you are interested in. For this type of filter a combination of one, two or three call property criteria can be used.

Evaluating call category information

Let us take the filter below to explain how agent category status information is evaluated for a filter using call properties only: ***The User variable X must be 1.***

Whenever one or more items of filter status information need to be evaluated, all the calls for which the variable user X = 1 are determined. Then all the call category status information is evaluated on the basis of everything that has just been determined. For example, the number of calls in the Wait status

with the average waiting time before being abandoned. It is important to remember that a call's belonging to a filter changes dynamically in accordance with the modifications made to the variable X in the script.

e) Mixed filter (call and agent)

These filters involve both call-specific properties (DNIS, user variables, etc.) and the properties of the agent who handles or can handle the call (the agent is in team A).

Evaluating call category information :

A call must meet both agent and call criteria to be included in a mixed filter.

To evaluate whether the call meets the call criteria, the same rules as those used to evaluate filters which involve call properties only are used. To evaluate whether the call meets the agent criteria, the same rules as those used to evaluate filters which involve agent criteria only are used (see part **g)** in the **{Agent Part}**) tab.

f) Define the criteria of a filter in the {Agent Part} tab

In this tab, you can define conditions based on the following properties, which are related to the agents. You can define a sub-group of agents by defining the criteria applicable to each agent. The following three criteria can be used to define an agent sub-group:

- **Language level of the agent** : The agent's French language level must be greater than or equal to 80 or the agent's English level must be between 70 and 80.
- **Skill level** (see Sheet U-437) **of the agent** : The agent skill level for Skill 1 must be greater than 80.
- **Agent team membership** (see Sheet U-434): The teams to which the agent is to belong can be set when the filter is defined. For instance : filter on agents belonging to team A.

One, two or three different criteria can be used: for example, a filter on agents belonging to team A and who have a level of English greater than 80.

Below is a table with the possible operator(s) and value(s) according to the property chosen for the definition of the **{Agent Part}**conditions.

Tableau 10.4 TABLE OF OPERATORS AND VALUES POSSIBLE IN THE {AGENT PART} TAB

PROPERTY	OPERATOR 1	VALUE 1	OPERATOR 2	VALUE 2
<Language> Level	< ; <= ; = ; > ; >= ; <>	Enter a value of between 0 and 99 in the text field.	< ; <= ; > ; >=	Enter a value of between 0 and 99 in the text field.
<Skill> Level	< ; <= ; = ; > ; >= ; <>	Enter a value of between 0 and 99 in the text field.	< ; <= ; > ; >=	Enter a value of between 0 and 99 in the text field.
Teams IDS	IN	Select a value from the list. This list contains the names of the teams that are defined for the Service	/	/

g) Filtering agents

Evaluating agent category information

Let us take the example below to explain how agent category status information is evaluated for a filter: **filter on agents belonging to team A** in other words the agent must be part of team A to be included in information evaluation in real time.

Whenever one or more items of filter status information need to be evaluated, all the agents who are assigned to the Service and who are part of team A in this Service at the time are determined. Then all the agent category status information is evaluated on the basis of everything that has just been determined. For example, the number of agents in team A in Ready status and the number of extensions used by agents in team A who are in idle status are calculated.

It is important to remember that an agent's belonging to a filter changes dynamically in accordance with the modifications made to the configuration by the manager. For example, if an agent who is logged on, ready and whose telephone extension is free is added to team A, the number of ready agents and the number of free extensions will be increased by one.

h) Filtering calls on the basis of properties of agents who handle (or can handle) the call

Evaluating call category information

Calls can also be filtered on the basis of agent properties. Let us take the following example: **the agent who handles the call or who can handle the call is in team A.**

When an incoming call arrives on a Dialogic channel (solution with IVR) or an incoming call pit (solution without IVR), M5000 CC creates a call and executes a script. The call is then in INI status (status of call before transfer). The call remains in this status until a "TransferCall" node is run (see § 13.2.2.7). For calls in this status the following rule is applied to determine whether the call is included in the filter:

- if the intrinsic variable "CallToTransfer "(which can be modified by the user in the script) is True (<> 0), the call is considered to be part of the filter, provided there is at least one agent who matches the filter criteria assigned to the Service (i.e. belonging to team A in our example).
- if the intrinsic variable CallToTransfer is False (= 0), the call is not considered to be part of the filter. To recap, calls for which CallToTransfer is set to False are calls whose processing is completely automatic and which will not be distributed to an agent via a TransferCall node.

The principle is that until a TransferCall node has been run, the profile of the agent who will handle the call is not known. The call can thus be distributed later to an agent in team A, provided there is at least one agent in this team.

Then, when a TransferCall node is run during the script, the M5000 CC Server looks for a free agent who matches the profile defined in the node. If there is no agent free, the call is put in a queue and its status is Wait. For calls in this status the following rule is applied to determine whether the call is included in the filter:

- the call is considered to be part of the filter if and only if there is at least one agent who meets the both the filter criterion and the "TransferCall" node criterion:
- in the filter used in the example, if, in the "TransferCall" node, you request that the call be transferred to an agent in team A, the call will be part of the filter if there is an agent assigned to the service who is a member of team A.
- if, in the "TransferCall" node, you simply request that the call be transferred to a member of the Service (without defining any skills, language or team membership criteria), the call will be considered as part of the filter if team A contains at least one agent. This is because if an agent in this team becomes free, the M5000 CC Server can distribute the call to this agent. The call can thus be distributed to an agent in team A and thus included in the filter.
- if, in the "TransferCall" node, you request that the call be transferred to a member of team B, the call will be included in the filter provided the Service contains an agent who is a member of both team A and team B. This is because if this agent becomes free and is sent a call by the M5000 CC Server, an agent who is a member of team A will handle the call. The call can thus be distributed to an agent in team A.

When an agent who meets the "TransferCall" node criteria becomes free, the M5000 CC Server assigns the call to the agent. The call then moves to "Reserved" status for the total duration of the transfer. Once the call is transferred, the call moves to DCP status. If the agent then puts the call on hold, the call moves to "On Hold" status. Finally, if the agent puts himself on "PCP" for this call, the call moves to "PCP" status at the end of the actual call until the agent changes the status (moves back to "Ready" or "Not Ready"). For such call statuses where a single agent is linked to the call (the agent who handles the call), the following rule is used to determine whether the call is included in the filter:

- the call is included in the filter if the agent who handles the call meets the filter criterion. In our example, the call will be included in the filter if the agent who handles the call is a member of team A.

When an "AgentTransferCall" node is run (see § 13.2.5.9) or the corresponding button in the M5000 CC User application selected, two agents are linked to the call: the agent who transfers the call and the agent to whom the call is transferred. When a call is being transferred from one agent to another, the following rule is applied to determine whether the call is included in the filter:

- the call is included in the filter if the agent who transfers the call or the agent to whom the call is transferred meets the filter criterion. In our example, the call will be included in the filter if the agent who transfers the call is a member of team A. If the agent to whom the call is transferred is a member of team A, the call will also be included in the filter. If, however, neither the agent who transfers the call nor the agent to whom the call is transferred is in team A, the call will not be included in the filter.
- To access the information concerning mixed filters (see Part e**)** above).

i) Defining the criteria for a filter in the {Permissions} tab

In the **{Permissions}** tab the Service manager must select the teams whose members will be authorized to use this filter to monitor statuses in real time. In other words user rights (permissions) are associated with each filter. These rights are granted to all members of teams selected by the Service manager when the filter is defined. Service managers can only grant user rights to (members of) teams defined in the current Service.

User rights can also be granted to all members of the Service (without restriction) by selecting the first option in the ***{Permissions}*** tab.

When the statuses are displayed in real-time (via the histograms and pie charts or via the information bars), the team manager or supervisor may only use the filters for which at least one of their teams has received user authorization when the filters were defined by the Service manager. The same principle applies to the agents; they may only use (in the M5000 CC User application) filters for which at least one of the teams to which they belong has received the right (permission) to use them. However, the team manager and supervisor and the agents may view unrestricted the global real-time statuses of their Service(s).

Note: *The team manager and supervisor may also use the filters for which user permission has been granted to a team of which they are members without necessarily being the supervisor.*

3 Edit an existing filter

- In the **"Filters"** window, click on the **Edit**  button.
- The **"Filter Properties"** window is displayed (see Figure 10.52). In this window, you can view the properties defined for the filter and eventually modify them. These properties are :
  - ***Filter ID}*** : inactive property. You cannot modify it.
  - the ***{Filter Description}*** field: filter description.
  - ***[Use with real-time statuses]*** check box: Changing the value of this property changes the contents of the real time statuses.
  - ***[Save passing filter in statistics]*** check box: Changing the value of this property changes what happens at the end of the call. It is at this moment that the filter identifier is saved in the statistical tables.
  - ***[Save filtered status in statistics]*** check box: This option may be activated and deactivated at will. When it is activated for the first time a new statistical table (see step **2** in this sheet) is created and the filtered statuses will be saved. Once the option is deactivated, the statistical table will not be deleted but the filtered statuses will no longer be saved (the statistical table is only deleted if the corresponding filter is itself deleted).
  - All the conditions that you want to define for the filter (see the details of the fields in each tab in the previous paragraphs in step **2** in this sheet):
    - Modify the existing conditions in the **{Call Part}**, **{Agent Part}** and **{Permissions}** tabs.
    - Add new condition(s) in one or more of the three tabs
    - If you want to suppress the third condition in one of the tabs, you have to select the empty string in the AND/OR combo box placed above the third condition. The property, operator(s) and value(s) previously chosen are erased.
    - If you want to suppress the two last conditions in one of the tabs, you just have to select the empty string in the AND/OR combo box placed above the second condition.
    - You can click the ***[Cancel]*** button at any time to cancel the modifications, or ***[Validate]*** to save the modifications.

4 Delete a filter:

- In the **"Filters"** window that opens (see Figure 10.51), select the relevant filter and click the **Delete**  button. A message box ask you to confirm that you want to remove the filter. If you click OK, the filter is permanently removed.

Note: *If the filter that has been deleted was used in certain status display windows (histograms or pie charts), these windows will close automatically as soon as the next status message arrives. No histograms or pie charts that use this filter will be available.*

U-443 : DISPLAY MENU: OPTIONS

OBJECTIVE

- To define the MDI/SDI display mode of the M5000 CC Service Manager application.

OPERATOR LEVEL

- Service manager, or team manager or supervisor.

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service manager or authorized team supervisor (see Sheet U-410).

PROCEDURE

To define the MDI/SDI display mode of the M5000 CC Service Manager application, select the **[Options]** command from the M5000 CC Service Manager application's **[View]** menu, then one of the two menu display options:

- **[MDI]** (Multiple Document Interface) : This display mode gives you the required information without any link to another one.
- **[SDI]** (Single Document Interface mode) : In this mode, all the windows are linked. Highlighting an element in a window will update all the elements linked to this element from other windows. Click on one will highlight all related items of other windows.

U-450 : SCRIPT MENU: "LOAD" OR "UNLOAD"

OBJECTIVE

- To load/unload the script of the current Service version.

OPERATOR LEVEL

- Service Manager

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized Service manager (see Sheet U-410).

PROCEDURE

Changes to scripts are not immediately visible to all applications using them. Before a script can be modified, the Service manager must load it.

1 To load the script of the current Service version

- In the M5000 CC Service Manager application's **[Script]** menu, select **[Load]**.

Note: *If there is no script yet for a Service version, it is automatically created when the Service manager uses the **[Load]** command for the first time.*

2 To unload the script of the current Service version

- In the M5000 CC Service Manager application's **[Script]** menu, select **[Unload]**

U-451 : SCRIPT MENU: "COMPILE" AND "SAVE"

OBJECTIVE

- To compile then save the script of the current Service version

OPERATOR LEVEL

- Service Manager

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized Service manager (see Sheet U-410).

PROCEDURE

Compile the script when all the script elements are defined. This operation checks for script errors in order to make it usable by the M5000 CC Media Server (inbound Services) and M5000 CC User application (inbound and outbound Services) applications.

1 To compile the script of the current service version

- In the M5000 CC Service Manager application's **[Script]** menu, select **[Compile]**.
- If there are errors in the script, messages are displayed. Follow the instructions and compile again.
- If an error occurs during the compilation, a short problem description appears, indicating the error location. The corresponding element can then be edited and corrected.
- Once the script is successfully compiled, it can be saved. see step 2.

2 To save the script of the current Service version

- In the M5000 CC Service Manager application's **[Script]** menu, select **[Save]**.
- If the script has not been compiled successfully, a message box appears. Click on ***[OK]*** if you want to save the script.

Nota :
- *The [Save] command is no longer available when the version changes to "Production" or "Beta" state to avoid any change of script that may only be applied in real-time. To save your version, use the [Update clients] command in the [Script] menu (see Sheet U-452).*
- *Saving before compiling will compile the script automatically. Saving a script containing compilation errors is possible but the script could not be used by client applications.*

U-452 : SCRIPT MENU: UPDATE CLIENTS

OBJECTIVE

- To update the client applications and test the script

OPERATOR LEVEL

- Service Manager

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized Service manager (see Sheet U-410).
- The current Service version has to be set as "Beta" or "Production".
- In order to perform the Update clients, the script must be saved successfully.

PROCEDURE

The applications using scripts (**M5000 CC Media Server** executing IVR trees and **M5000 CC User** executing User Interface trees) have to load the new version of a script after successful compilation.

Usually, the M5000 CC Media Server and M5000 CC User applications automatically load the "Beta" and "Production" versions of the Service at startup. However, the M5000 CC Service Manager application can make the client application reload the last saved "Beta" and/or "Production" versions of a script.

1 To update the client applications

- In the M5000 CC Service Manager application's **[Script]** menu, select **[Update clients]**.

COMMENTS

- If the current Service version is not saved, the ""Update clients operation asks if it has to save the current version, if not, it will force the client applications to load previous versions. Client applications load the last saved "Beta" and "Production" version of the Service.
- You may interrupt a client update at any time during an update procedure. In this case, the update will not be complete and the client application will use the previous version of your script.
- You may also carry out a new client update while an update operation is in progress. You will be asked to confirm to find out if you want to replace the current client update with the new one.

U-460 : WIZARDS MENU: SIMPLEROUT

OBJECTIVE

- To execute a "SimpleRout" wizard by carrying out the following steps one after the other:
  - Prepare the execution of the assistant (see the preliminary operations in this sheet),
  - Start the "SimpleRout" Wizard (see step **1** in this sheet),
  - Choose the execution mode for the "SimpleRout" wizard (see step **2** in this sheet).
  - Select the type of Routing (*Voice Server with IVR* or *Voice Server without IVR tree)* (see step **3** in this sheet).
  - Define the CLID groups to be used by the script (see step **4** in this sheet).
  - Import CLID groups from .xml file lists (see step **5** in this sheet).
  - Configure the options of each CLID group individually, or of several groups at a time (see steps **6** to **17**) as follows:
  - Select the number of transfer attempts to make (see step **6** in this sheet),
  - Associate the DNIS with the languages (see step **7** in this sheet),
  - Select the messages to be played to the customer (see step **8** in this sheet),
  - Invite the caller to leave a message (only with IVR) (see step **9** in this sheet),
  - Define the type of transfer (see step **10** in this sheet),
  - Define the failure after transfer attempt action (see step **11** in this sheet),
  - Set the transfer parameters
    - u the team (or teams) to which the agent belongs (see step **12** in this sheet),
    - u the language and skill levels of the agent (see step **13** in this sheet),
    - u the preference rules to follow to select the agent (see step **14** in this sheet),
  - Define the working hours (see step **16**in this sheet).
  - Define the holidays (see step **17** in this sheet).
  - Define up to three variables, according to a proposed list, which will be displayed on the agent applications' status bar (see step **18** in this sheet).

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

COMMENTS

- Here are two examples of interactive IVR and non-interactive "Routing" trees expanded using the Wizard

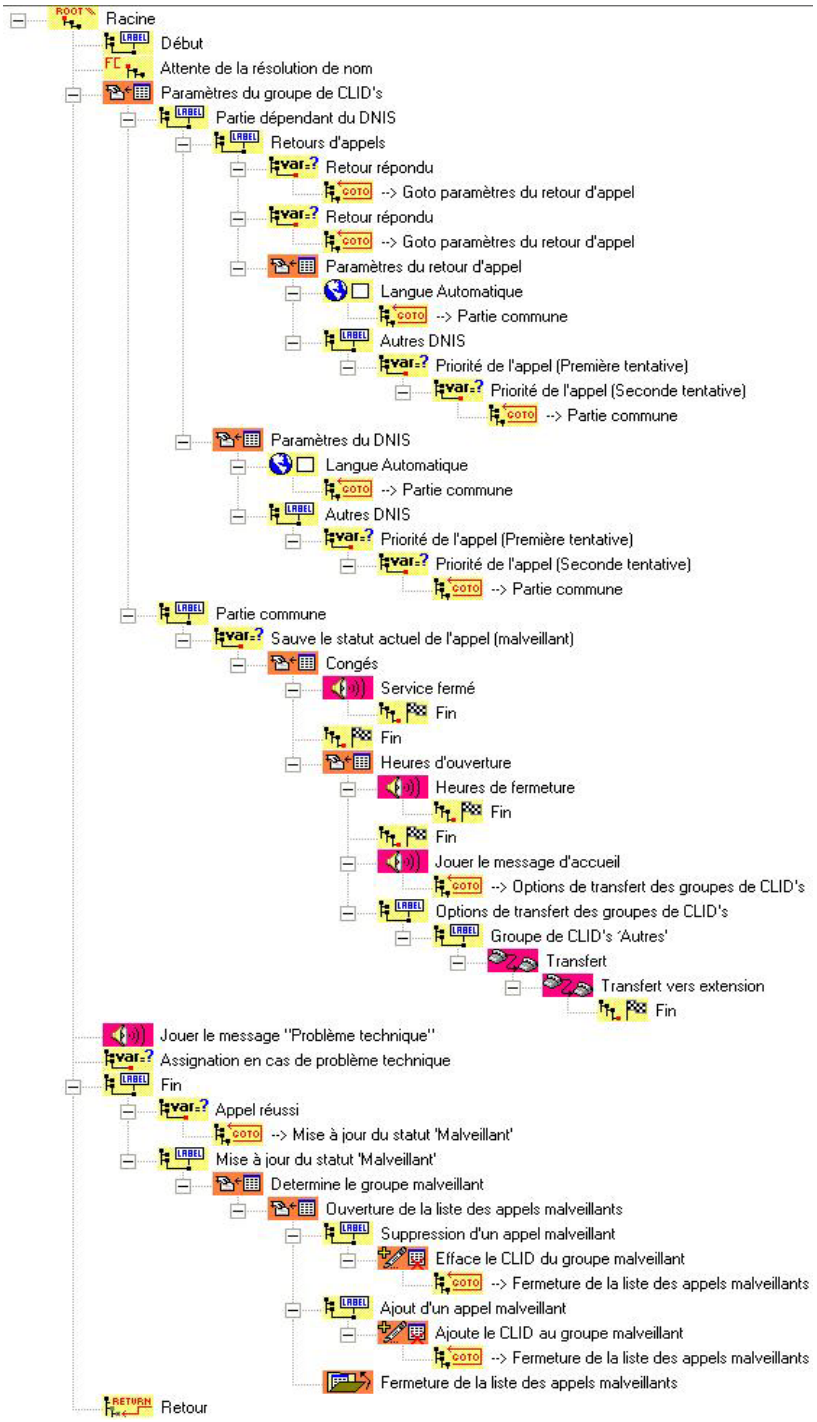


Figure 0.1 EXAMPLE OF ROUTING TREE

PRELIMINARY OPERATION(S)

Before the **"SimpleRout"** wizard can run, the following conditions must be fulfilled.

- You must be logged in and identified as an authorized Service manager (see Sheet U-410).
- A Service must be opened (see Sheet U-411).
- An existing version of the Service must be opened (see Sheet U-412), or a new version must have been

created (see Sheet U-415).

- At least one language must be defined (see Sheet U-436) for this Service version.
- This Service version's script must be loaded (see Sheet U-450).

At startup, the wizard checks these conditions. If any of the checks fails, this message box is displayed:

- Moreover, if the wizard generates a script containing sounds, skills, teams, etc., they must have been defined (see Sheet U-440) prior to the wizard's execution.

PROCEDURE

Note: The "SimpleRout" wizard generates a tree (called Routing) which can be later edited by a service manager. However, if the wizard is run again after the tree has been edited manually, all changes are lost: the last tree generated overwrites the previous one. A warning message **"A tree exists already (name: Routing). Applying changes will overwrite this tree and erase all changes you may have made to it. Continue ? Validate] or [Cancel]"** appears if you want to run the wizard a second time.

Note: All the parameters of the wizard are backed up (after confirmation) in the "M7480Routing" database currently in use. This database is available in the service folder located in the M5000 CC file structure. The database name ends with two digits: the first one represents the service version, the second one the project number.

1 To start the Simple routing wizard

- In the M5000 CC Service Manager application's **[Wizards]** menu, select **[SimpleRout]**.
- An error message appears if the conditions required to run the wizard are not fulfilled. Check the preparation steps again (see the preliminary operations in this sheet) and click ***[OK]***.
- Depending on the execution mode (see Section 2 : Simple routing wizard execution mode), the available options will not be the same: in Edit mode, you can only access the CLID lists, opening hours and holidays.
- Depending on the type, interactive (with IVR) or non-interactive (without IVR), the content of the window which opens may differ and the following specific tabs are presented: with IVR, the specific **{Message recording}** tab is available.

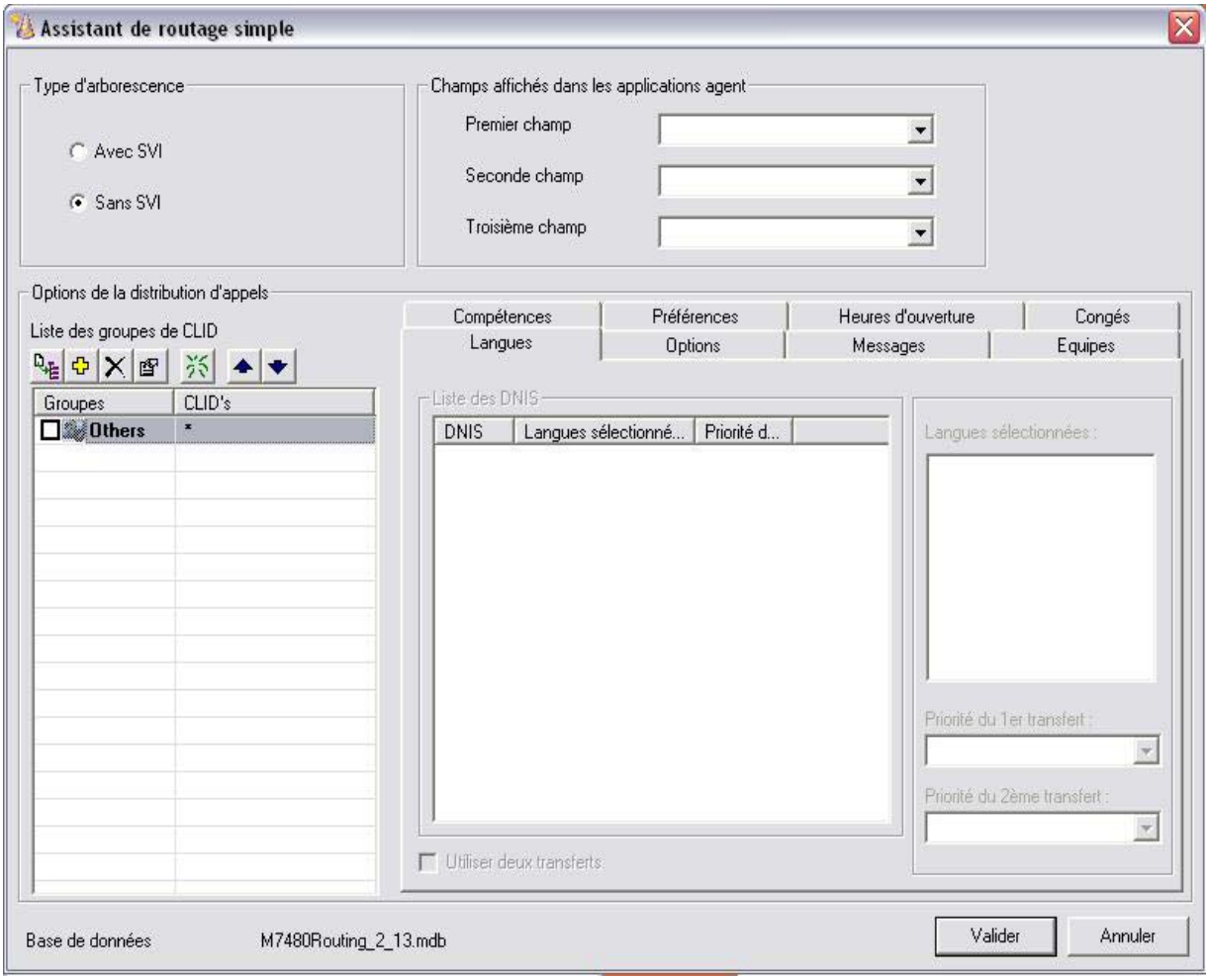


Figure 1.1 “SIMPLE ROUTING WIZARD” WINDOW

2 Simple routing wizard execution mode

Two simple routing wizard execution modes are proposed:

- Normal mode: this mode gives access to all the simple routing wizard options used to execute a call management script.

- Edit mode: this mode is used to edit CLID groups, opening hours and holiday dates in an existing call management script. This mode is used to edit the data that does not affect the structure of the script tree without having to open the database associated with the script.

3 Select the type of routing tree

If you own a license for High Density IVR ports, you are able to use the IVR scripts. In this case only, the Routing tree generated by the Wizard can be of two types : **Voice Server with IVR** tree or **Voice Server without IVR** tree.

- To select the type of tree, check the ***[With IVR]*** or ***[Without IVR]*** radio button at the top of the **"Simple routing Wizard"**.

Note: *If you do not own a license for high-density IVR ports, only the "Without IVR" option is available.*

4 Defining CLID groups

- It is possible to define **several** CLID groups (caller number lists) for each one for which specific processing will take place during script execution. By default, only the group "**Others**" exists: a group that can process all the caller numbers by itself. Groups are added, deleted and edited using the buttons available above the CLID group list.

- When a CLID is added to a group, it is possible to specify the CLID or to use the special characters "?" and "*" if you wish to group several numbers together in a single entry. For example, "012*" includes in the CLID group all the numbers starting with the prefix "012". "01234567?" includes all the numbers corresponding to the specified digits, the last one may take on any value.

- While editing a group you can define one of them (except the default group) as group of "**nuisance**" callers. This group will contain the numbers of callers marked as nuisance callers by the agents and will then perform a specific processing operation for them.

- **The display order for this group is important**: any new call is considered as belonging to the first group on the list (scrolled from top to the bottom) to which the search criteria correspond. This order may be modified using two buttons ("Move up", "Move down") available above the list of CLID groups.

- The group "Others" contains a unique CLID: "*". This CLID means that any number may be considered as part of this group if it was not previously assigned to a group above it on the list of wizard groups. The CLID groups coming after the group “Others” on this list will be considered as inactive and will be greyed out in the wizard.

- There is a small check box on the left side of each group. This box is used to choose the groups for which the script parameters (steps 6 to 16) will be modified. Therefore, the parameters **for several groups** can be modified once.

5 Importing some CLID groups stored in XML files

It is possible to import some lists of numbers associated with some CLID groups stored in XML files. The XML files must respect a well defined structure, and the numbers must respect the numbering rules applicable in the various M5000 CC applications (otherwise a message will indicate that that the information was not imported during the XML file import).

Here is an example of a valid XML file:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<Wizard_XML_Groups_Structure>
<Struct>
<Group>Group 1</Group>
<CLID>069123456</CLID>
</Struct>
<Struct>
<Group>Group 1</Group>
<CLID>022476868</CLID>
</Struct>
<Struct>
<Group>Group 1</Group>
<CLID>069*</CLID>
</Struct>
</Wizard_XML_Groups_Structure>
```

The file " XML Wizard CLID groups file structure.xsd ", available in the service manager application installation directory (folder: …M5000 CC\Wizards\Service Administrator\ ) contains the XML structure required to create similar files.

6 Select the number of attempts

The script generated by the Simple routing wizard can perform either one or two attempts to transfer the call to an agent.

If two attempts are selected, they are performed consecutively: if there are no agents available who meet the requirements for the first transfer, the second transfer is attempted. The requirements defined for the second transfer should therefore be **less restrictive** than those of the first one.

The number of transfer attempts can be selected by ticking the ***[Use two transfers]*** option.

7 Associate DNISes with languages

Depending on the phone number dialled by the customer (DNIS), a language can automatically be selected for the call (e.g.: the voice messages to be played). The transfer priority, too, can depend on the DNIS.

The association between DNIS and languages is defined in the **wizard {Languages}** tab.

The **DNIS list** is managed by right-clicking in the list and selecting an action from the context menu that appears. Once a DNIS is added to the list, its characteristics can be defined:

- In the **{Wizard languages}** tab, associate one or more languages (right click on the ***{Selected languages}***) list,
- define a priority (see "TransfertCall" node in § 13.2.2.7) for each transfer attempt (select a value from the drop-down list). A high value corresponds to a high priority.

If the current service has been designed to manage call returns to the attendant (see Sheet U-321), the DNIS list is completed with two new entries: "Answered return" and "Unanswered return". These two entries are virtual DNISs used to distinguish between two calls returning to the attendant without ever being picked up by an internal subscriber, and calls returned to the attendant after being picked up at least once by an internal subscriber. Just like with the normal DNISs, these two entries can be associated with specific languages and priorities.

8 Select the messages to be played

Some messages can be played during the script execution. Select them in the ***Messages selection*** box in the **{Options}** tab. The available messages are different according to the tree's type.

For an "Interactive voice server" tree

All of the messages are optional. They can only be selected from the User Sounds previously defined for the current Service version:

- ***Welcome*** message: this sound is played at the beginning of the call,
- ***{Waiting}*** message: this sound is played during the transfer to an agent,
- ***{No qualified agent available}*** message: played when all the transfer attempts have failed (only available if the ***[Play failure message]*** option in the same tab is checked),
- ***{"Technical problem"}*** message: played when a problem arises,
- ***{"Please leave a message"}*** message: played to invite the customer to leave a message,
- ***{Service Closed}*** message: this sound is played when calling during holidays,
- ***{Closing Time}*** message: this sound is played when calling during closing hours.

For a "Non-interactive voice server" tree

All the messages are optional except the "Waiting message" (PBX waiting message)which is essential for the transfer phase. They can only be selected from the PBX Sounds previously defined for the current Service version.

- ***Welcome*** message: this sound is played at the beginning of the call,
- ***{PBX Waiting}*** message: this sound is played during the transfer to an agent.
- ***{No qualified agent available}*** message: played when all the transfer attempts have failed (only available if the ***[Play failure message]*** option in the same tab is checked),
- ***{"Technical problem"}*** message: played when a problem arises,
- ***{Service Closed}*** message: this sound is played when calling during holidays,
- ***{Closing Time}*** message: this sound is played when calling during closing hours.

9 Invite the caller to leave a message:

The message recording is **only available** in the configuration with IVR.

- In this case, if you want to authorize the caller to leave a message, check ***[Yes]*** in the ***{Invite the caller to leave a message}*** field in the **{Options}** tab:
- A new tab appears: **{Message Recording"}** displaying new options for saving the caller's recorded message.

Note: *See also the "RecordPrompt" node (see § 13.2.2.8).*

10 Select the type of transfer

The transfer to an agent can be carried out blind or monitored (see "TransferCall" node in § 13.2.2.7) by the M5000 CC Media Server. This option is set in the ***{Type of transfer}*** box of the **{Options}** tab. If two transfers are used, their global timeout value can be set independently (see "TransferCall" node in § 13.2.2.7).

11 Select the action after a transfer attempt failure

If there are no qualified agents available for the call at the end of a script, two options are available in the **{Transfer attempt failure action}** box in the **{Options}** tab:

- ***[Transfer to an extension]***: the call is monitored and transferred (in IVR mode) to an external number (also to an overflow site). Enter the extension number in a diallable format (see "TransferCall" node in § 13.2.2.7.4),
- ***[Play failure message]*** "No qualified agent available" : nothing will be played to the caller if the message is not selected.

12 Set the transfer parameters : team(s) to which the agent will belong,

For each transfer attempt, you can specify whether you want the destination agent to be a member of one team or more teams. This is done in the **{Teams}** tab.

Add teams to the ***{Selected teams}*** list by right-clicking in the list and selecting **[Add teams]** from the pop-up menu. If more than one team is selected in the list, you have to specify whether the agent has to belong to at least one of the selected teams or to all selected teams by checking the corresponding option.

13 Set the transfer parameters : Language and skill levels of the agent

The destination agent can also be determined by his language and skill knowledge levels. These requirements are specified in the **{Skills}** tab.

In the ***{Required language level}*** specify the minimum language level (value between 0 and 99) required for each agent in each of the languages defined in the Service version.

To enter the required skill level

- right click on the name of a skill in the ***{Required skill levels}*** and select the **[Define level]** menu. The **"Level selection"** window opens. Enter the required value and press **<Enter>**. Only numerical values between 0 and 99 are accepted,
- to increase the skill level of a unit, right click on the name of the corresponding skill and select **[Increase level],**
- to reduce the skill level of a unit, right click on the name of the corresponding skill and select **[Reduce level].**

14 Set the transfer parameters : preference rules to be used to select the agent.

If more than one agent matches the specified languages level and skills level defined so far, it is possible to define preferences in order to select the 'best' agent among those who match the requirements. This is done in the **{Preferences}** tab.

Three degrees of preferences can be defined (per transfer attempt). The preferred agent is the one who has the highest value for the first preference. The second degree is used only if more than one agent has the highest value for the first preference, and so on. Each preference is a list of agent capabilities (languages + skills). If a list contains more than one ability, the corresponding degree is computed as the sum of the item levels for each agent.

You can add a skill or all the languages in one of the preference lists by right-clicking the list and selecting the skill you want.

15 Choose the transfer parameters: use a CRM record.

The **{CRM record}** tab allows you to define the URL to use when a call is presented to an agent using the portal. As two transfer attempts may be used, a different URL can be defined for each transfer attempt. This URL can easily be copied from one transfer attempt to the other using the keyboard shortcut for the Windows copy/paste function (**<CTRL +C>**, **<CTRL + V>**).

In the ***{CRM record (URL) address}***, enter the URL to be used to start the CRM record. You can select some system information by pressing **<F2>** and selecting the system information. When the node is executed, each piece of system information will be replaced by its value when the CRM record is presented.

In the **{Allow CRM record to be opened by agents}** checkbox, set whether the agent can reopen the CRM record after closing it.

For a CRM record to be displayed in the portal when a call is presented:

- The ***{Use agent script}*** option (in the **{Options} tab)** must be activated.

- The ***{CRM record (URL) address}*** text box must be filled in. This text box contains variables only; the variables should not be empty the character string.

The following system information can be selected by pressing the **<F2>** key to define the CRM record URL: call identifier, user-to-user signalling associated with the call, caller number, called-party number (DNIS), dialled DNIS alias, caller hunt group number, departmental name, caller's first name, caller's surname and first name, surname of the called party in charge of return to attendant, first name of the called party in charge of return to attendant, surname and first name of the called party in charge of return to attendant.

The validity of the URL entered is not checked upon compilation.

16 Define opening hours

By default, the opening hours are not used but can be activated by ticking the ***[Use opening hours?]*** option.

Once activated, you can enter your opening hour intervals by right-clicking in the list and choosing the **[Add item]** option from the pop-up menu:

- the hours used must be in the hh:mm format,

If you decide to not use the opening hours anymore, simply uncheck the ***[Use opening hours]*** box.

17 Define holidays

To add holidays, right click in the list and select **[Add item]** from the pop-up menu.

- the value entered must be in date format (dd/mm/yy),

18 Define the variables displayed in the agent applications.

In the upper right side of the Wizard (see Figure 1.1 : “Simple routing wizard” window :") it is possible to define three variables from a proposed list (caller number, caller name, etc.), which will be displayed on the agent applications’ status bar. Note that the following variables are only proposed if the ***[Without IVR]*** radio button has been selected:

- "Surname of the person from whom the call return originated".
- "First name of the person from whom the call return originated".
- "Full name of the person from whom the call return originated".
- "DNIS range alias".

U-470 : STATUS MENU: AGENTS

OBJECTIVE

- Supervising the agents
  - Display the agents' availability (see step **1**) in this sheet.
  - Configure the agent statuses (see step **2**in this sheet),
  - Display the agent status displays (see step **3**) in this sheet,
  - Display the agent statuses in a histogram (see step **4** in this sheet),
  - Display the agent statuses in a pie chart (see step **5** in this sheet).

OPERATOR LEVEL

- Service Manager or Team Supervisor.

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service manager or authorized team supervisor (see Sheet U-410).

COMMENTS

Displaying the agents extensions

Information about the statuses of agents and their extension is displayed almost in real time (see the note below). Part of the information is available in the M5000 CC Service Manager application.

Each agent extension is represented by a telephone, the color and shape of which represent the status (see step **2** in this sheet). This information may be displayed by using the **[Agents > Details]** option of the M5000 CC Service Manager application's **[Status]** menu.

Note: It is not possible to display this information in real time as this would degrade because the CPU and the network performances. That's why broadcasting is used. Broadcasting consists of messages sent to a group of systems (instead of a single system). The broadcast idea is thus to send only one message instead of sending a message to each client. This implementation helps you to avoid DCOMcalls from the clients to the Server, which are time consuming. It is now possible to configure this time and therefore decrease the execution time, if the performance of the network and Server machine allows it.

Agent status management window

To reveal the various display windows of the agents, it is necessary to launch the"Agent status management window" (see step **3** in this sheet) and all the windows indexed in the management window will open with the same configuration as when they were closed. A backup of the parameters of each window (visible or not visible, option of visualization) is performed in the appropriate register entries in the Current User folder.

Agent status display configuration window

The configuration window (see step **2** in this sheet) is used to display the agent information more simply. In this window, the Service manager (or team manager/supervisor) is able to filter the statuses of each agent and each extension, as well as of each Service (of which he is a manager or in which he supervises at least one team) that he wants to see appear in the agent display window.

Visualization of the agents

It is possible to visualize one or several windows of the agents' statuses (see step **3** in this sheet). Each window can be customized by means of filters. These filters are used to sort the various Services and the agents' various statuses.

In the **[Agents]** menu in the M5000 CC Service Manager application's **[Status]** menu, the Service manager may display the dynamic information relating to the agents in the Service he manages, and the supervisor may display information relating to the agents in Services for which he is team manager or supervisor. There are different ways to display the information:

- displaying agents' **"Availability"** (see step **1**in this sheet)
- displaying the **"Details"** (see step **3** in this sheet)
- displaying the**"Histogram"** (see step **4** in this sheet) or

- displaying the **"Pie chart"** (see step **5** in this sheet).

PROCEDURE

1 Displaying agents' availability

- Select the [Agents > Availability] command from the [Statuses] menu of the M5000 CC Service Manager application: the "Filter selection" window appears.
- In the "Service" drop-down list, select the Service (local or remote) for which the real-time status must be displayed.
- Then click [Validate] to open the "Agent availability" window (see Figure 10.53).

Figure 10.53 "AGENT AVAILABILITY" WINDOW

The toolbar contains four icons (see Figure 10.53) :

- A  button represents the "Large icons" display option (see "Large icon" type display: below),
- A  button represents the "Small icons list" display option (see "Small icon list" type display: below).
- A  button represents the "Small icons details" display option (see Figure 10.56 and "Small icon details" type display:below):
- A  button represents the "Agent statuses of the day" display option (see "Agent's day status" display: below).

"Large icon" type display:

u The icon  in the task bar of the window represents the "Large Icons" option . For each agent that can be supervised by the service/team manager/supervisor, the green or red agent icon is displayed according to the agent's availability in the selected service. Moreover, these icons are used for the agent's identifier.

"Small icon list" type display:

u The icon  in the task bar of the window represents the "Small Icons List" option . For each agent that can be supervised by the service/team manager/supervisor, the green or red agent icon is displayed according to the agent's availability in the selected service. Moreover, the agent's identifier is presented on the right side of these icons.

"Small icon details" type display:

u The  button in the task bar of the window represents the "Small Icons Details" option. This list contains several columns (see Figure 10.53). It is possible to sort each three columns alphabetically by clicking the column title.

u The columns represented are the following:

- The identifier of the agent
- agent's name,
- Availability in the selected service in form of a character string (“Available” or “Not available”).

2 Configure the agent status display configuration window

The agent status **"Display window configuration"** window (see Figure 10.55) is used to display the agent related information more simply. In this window, the Service manager and the team supervisor are able to filter the status of each agent and each extension, as well as of each Service and each team (that they manage) they want to see appear in the display window of the agents.

Carry out one of the following operations to access the **"Display window configuration"** window:

- Select the **[Agents > Details]** command from the M5000 CC Service Manager application's **[Status]** menu. The **"Agent status management"** window opens (see Figure 10.54):

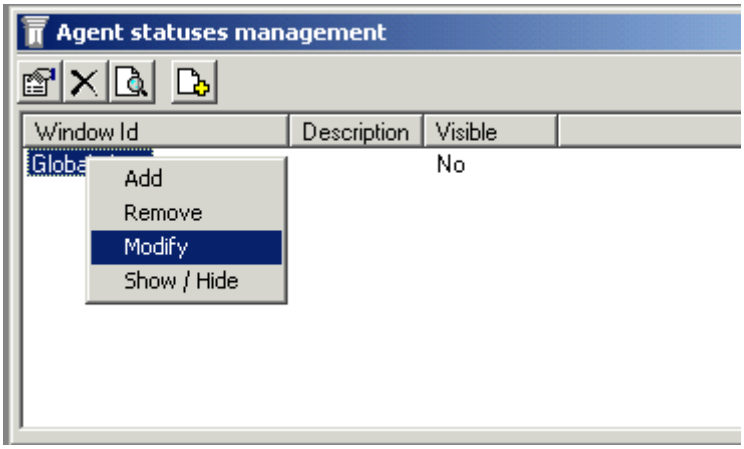


Figure 10.54 AGENT STATUS MANAGEMENT WINDOW

- Click on the **Add**  button or right-click in the window and select **[Add]** in the pop-up menu.
- If you have already defined a configuration window, simply edit the properties by going to the window name and clicking the **Properties** button  .

The **"Configuration of the display window"** window contains three tabs:

- The **{Membership}** tab: concerns the Services and teams to be displayed. The team filter may be deactivated by not selecting the Include teams box in the selection.
- the **{Status}** tab: concerns the statuses of the extensions and agents:

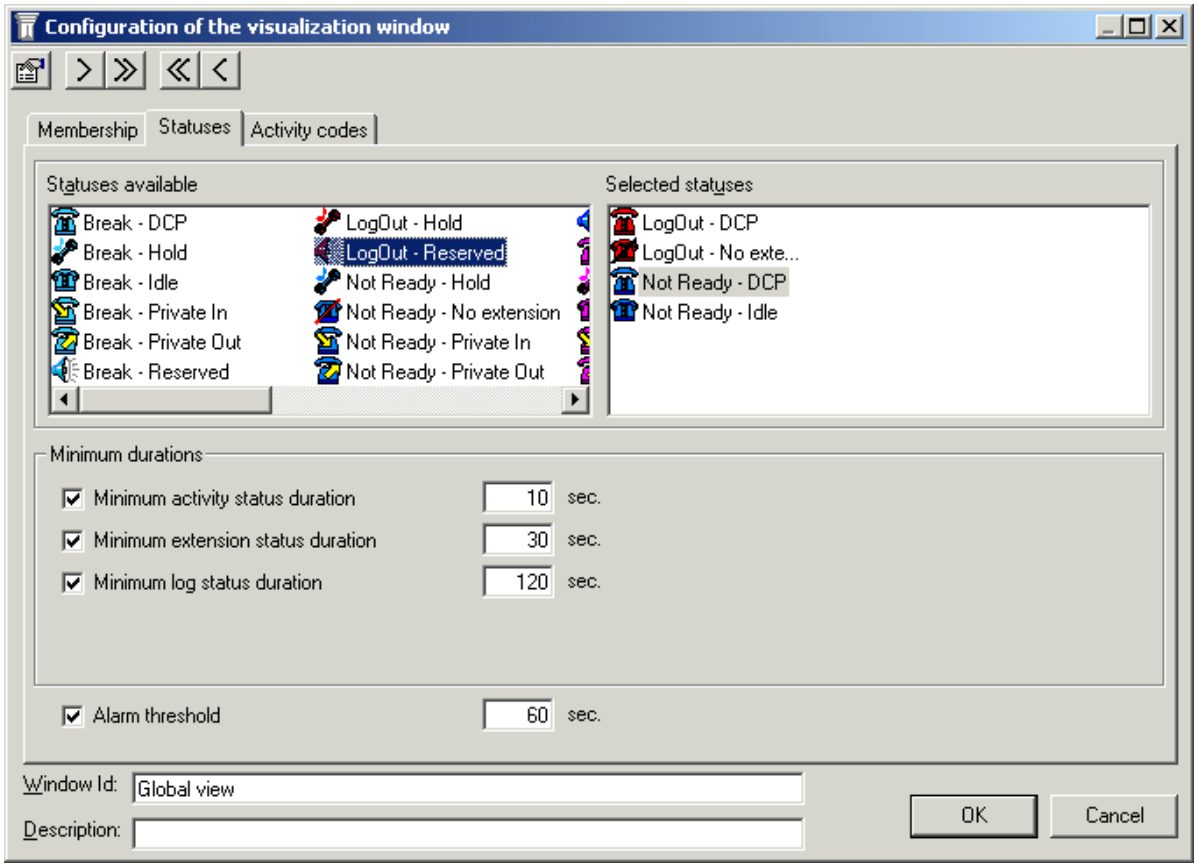


Figure 10.55 "DISPLAY CONFIGURATION WINDOW" WINDOW

In addition to choosing the statuses, this tab is used to select the minimum durations of the statuses to be displayed. When a minimum duration is selected, the agent icon will only appear in the "View agents" window of the corresponding filter if the duration of the status in question is greater than the duration selected in the filter. If several minimum durations are selected, the agent icon will only appear if the durations of the statuses in question all respond to the selected durations.

An alarm threshold may also be defined. If the duration of an agent status exceeds the threshold set in the filter, its icon will then appear with an exclamation mark.

- The **{Activity codes}** tab: concerns the activity codes for the agent “Not Ready” and “Post-Call Processing” status:

  The Service manager or team supervisor may specify which "Not Ready" (or “Post-Call Processing) activity code will be displayed in the agent status display window. If he only wants to see the agents who have not specified an activity code he will select **Default**.

Nota :
- *If nothing is selected from this tab then no "Not Ready" (or “Post-Call Processing”) agents will appear in the selected window.*
- *The Code n values correspond to activity codes for which no label has been defined (see the **{Activity codes}** tab in the M5000 CC Administrator application's **[File > Properties]** menu, Sheet U-312). Agents may only activate these codes using the M5000 CC User API or the "AgoraSystem.dll".*

The principle is the same for both parts. The Service manager or team supervisor uses the toolbar to move elements one at a time or all together from the list of available options to the list of statuses he wants to view.

Check text

- The **Check text**  button in the **"Display window configuration"** window: opens a **"Check text"** window that enables the Service manager (or team supervisor) to select the information that is to appear as a telephone icon in "Large icon" and "Small icon" display mode.

- The manager may select the following display options, by ticking the following boxes in the **"Check text"** window:

  u ***[Include agent ID]***,

  u ***[Include extension ID]***,

  u ***[Include ID of Service in processing]***,

  u ***[Include status duration]*** : corresponds to the minimum between the connection duration, the activity duration and the extension duration.

  u ***[Include activity code]*** : if a label has been associated with the activity, the activity will appear.

Nota : • *If there is no extension defined (agent logged out or connected without phone), no extension information is shown, even if the check box has been checked.*

• *If the agent is not processing a call, no Service is defined and no Service information is shown, even if the check box has been checked.*

• *The length of the text that appears under the icon may be modified by adjusting the icon spacing via the **"Control panel"** by selecting **[Display]** then the **{Appearance}** tab.*

3 Displaying the agent status details

- Select the **[Agents > Details]** command from the M5000 CC Service Manager application's **[Status]** menu. The **"Agent status management"** window opens (see Figure 10.54), as well as all the window indexed in the management window (they open with the same configuration as when they were closed, see example Figure 10.56).

- The **"Agent status management"** window contains the list of all the agents' display windows which have been created. It allows handling them very easily. Each window with the ***{Visible}*** property set to **"Yes"** is visible at the same time as the **"Agent status management window"**, those set to **"Non"** are not visible.

  The functions to **[Add]**, **[Modify]** or **[Remove]** an agents display window are only available in this window.

- In order to reveal the menu containing the functions mentioned above, it is necessary to right-click **List View**; then the choice between the three functions appears.

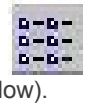
Agent statuses management

Each window can be customized with filters to visualize the agents' various statuses. Furthermore, it is possible to display several windows of the **"Visualization of Agents - Filter..."** in the same M5000 CC Service Manager application. All the agents assigned by the service manager are displayed in the window.

The toolbar contains five icons (see Figure 10.56) :

- A  button represents the properties of the filter window (see step ***2*** in this sheet),

- A  button represents the "Large icons" display option (see "Large icon" type display: below),

- A  button represents the "Small icons list" display option (see "Small icon list" type display: below).

- A  button represents the "Small icons details" display option (see Figure 10.56 and "Small icon details" type display:below):

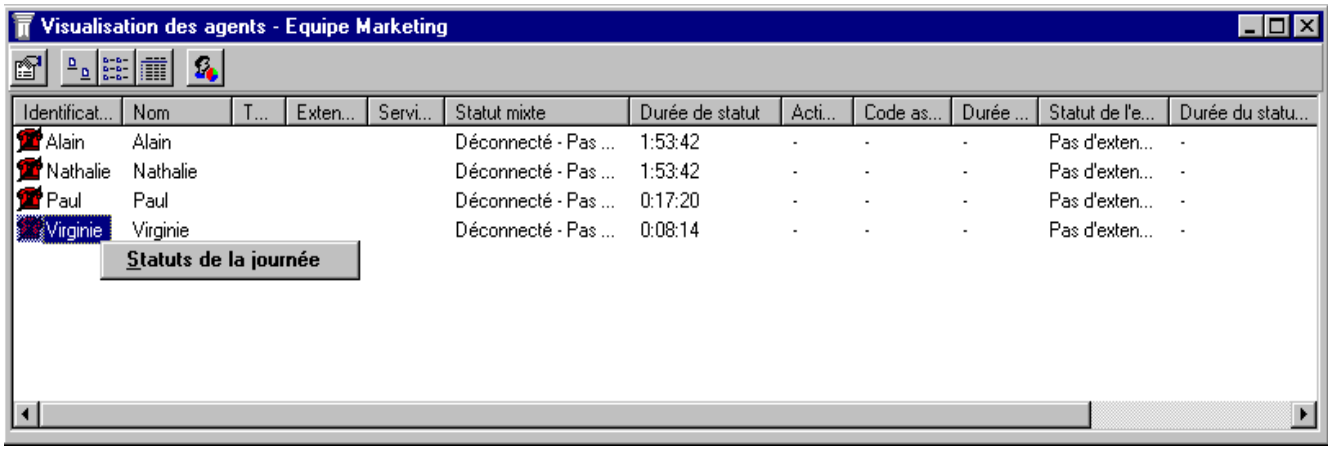


Figure 10.56 EXAMPLE OF A "VISUALIZATION OF AGENTS - FILTER..." WINDOW IN "SMALL ICONS DETAILS" MODE

- A  button represents the "Agent statuses of the day" display option (see "Agent's day status" display: below).

All agents assigned by the Service manager are displayed in the window (a telephone representing an agent's extension). The status of the agent is represented by the colour of the telephone while the shape of the phone represents the status of the extension. It's possible to have several extensions for an agent assigned to a Service. In that case, each extension is displayed in a window. The following table illustrates the possible statuses of the agents and their representation:

Tableau 10.5 PRESENTATION OF THE AGENT STATUS ICONS

STATUS	FREE	DCP (DIRECT CALL PROCESSING)	HOLD	RESERVED	PRIVATE IN	PRIVATE CALL OUTBOUND	NO EXTENSION
Agent Disconnected							
Agent not ready							
Agent ready							
Agent PCP							
Agent break							

Nota : • *The "No extension" icons are used to log out agents connected without using a phone (see Sheet C-500).*

• *If the alarm threshold (see step **2** in this sheet) is reached for an agent, its icon will appear with an exclamation mark.*

Additional symbol indicating a forced change:

When an agent's current activity has been forced by the system, the additional  symbol appears on the icon for this agent, example: 

. In fact, depending on the properties defined for each service, the agent may sometimes change automatically from “Not ready” to “Ready” (“Not ready” to “Disconnected”) or from “PCP” to “Ready” (“PCP” to “Disconnected”). This is the case when the maximum durations of "Not ready" or/and in "PCP" statuses are defined in at least one service to which the agent is assigned. Thus only the “Ready” activity and “Disconnected” status may be forced.

This symbol will only disappear if the agent changes activity (switching to "Break", to "Not Ready", or to "PCP"), even if, in the mean time, he has started processing calls normally.

The notion of "forced change" is only related to an agent's activity and not to the status of the agent's extensions.

When a trade union-approved break is defined within a service, an agent may automatically change from PCP to Break and later to Ready or Not Ready. If the PCP activity is ended forcibly, the additional symbol does not appear on the icon corresponding to the agent so long as he is on break. On the other hand, the symbol becomes visible when the agent is again Ready (only if the change to Ready is done automatically). In fact, the Break activity cannot be manually established by an agent: no additional symbol is required for real-time statuses when an agent's activity is on break. On the other hand, you have to indicate that the switchover from PCP to Ready was forced, even if there had been an intermediate break.

Note: the same symbol is juxtaposed on the agent’s  icon in the following two cases:

- After a certain number of consecutive unanswered calls
- When the M5000 CC Server notices that the agent’s extension is no longer reachable.

In these two cases, the agent will automatically be disconnected by the system.

"Large icon" type display:

u The icon  in the task bar of the window represents the "Large Icons" option . Depending on the chosen options (see step **2** in this sheet), the agent Id, the extension number and the Service in process are written under the telephone, as well as the duration of their status.

"Small icon list" type display:

u The icon  in the task bar of the window represents the "Small Icons List" option . According to the chosen options, the agent Id, the extension number and the Service in process are written beside the phone.

"Small icon details" type display:

u The  button in the task bar of the window represents the "Small Icons Details" option. This list contains several columns (see Figure 10.56). It is possible to sort each column alphabetically by clicking the column title.

u The columns represented are the following:

- status icon with the agent Id,
- agent's name,
- phone name,
- extension number,
- Service in process,
- agent's status and extensions statuses,
- log status,
- log time,

- activity,
- activity code and
- activity time.

If an agent has logged out or logged without phone, no information about the phone and the extension is given.

"Agent's day status" display:

u Before displaying an agent's day status, first configure and select the status to display (see Sheet U-485).

u In the Agent statuses window (see § 1.4), the Service manager may also display instantaneous information about an agent's daily activity. A Service manager may have more details about an agent's activity from the beginning of the day. In fact, it may be interesting for a Service manager to know the number of calls processed by an agent, the time during which he has been available or on communication, etc.

u Its different values are set to 0 at the beginning of the night mode (defined in the M5000 CC Administrator application, see the **{Night mode} tab** , Sheet U-312) and are available via the agent display window in M5000 CC Service Manager.

u The value of some day statuses depends on the agent's activity, but also on the status of each extension used by this agent. In this case, we talk in terms of the "global ***status "*** of extensions (see Extension statuses definition in § 1.4). We consider that:

- If the status of at least one of the extensions is "DCP (Direct Call Processing)" for an incoming call, then the agent is considered as being in communication with a caller. The extension's global status is then ***"Inbound DCP call"***.
- If the status of at least one of the extensions is "DCP" for an outgoing call and the status of none of the extensions is "DCP" for an incoming call, then the global status is "***Outbound DCP call"***.
- If the status of at least one of the extensions is "Inbound private call" and the status of none of the extensions is "DCP" (for an incoming or outgoing call), then the global status is ***"Inbound private call"***.
- If the status of at least one of the extensions is "Outbound private call" and the status of none of the extensions is "DCP" or "Inbound private call", then the global status is ***"Outbound private call"***.
- If the status of at least one of the extensions is "Reserved" for an incoming call and the status of none of the extensions is "DCP" or "Private call", then the global status is ***"Reserved Inbound call"***.
- If the status of at least one of the extensions is "Reserved" for an outgoing call and the status of none of the extensions is "DCP" or "Private call", then the global status is ***"Reserved Outbound call"***.
- If the status of at least one of the extensions is "Hold" for an incoming call and the status of none of the extensions is "DCP", "Private call", or "Reserved", then the global status is ***"Hold inbound call***.
- If the status of at least one of the extensions is "Hold" for an outgoing call and the status of none of the extensions is "DCP", "Private call", or "Reserved", or "Hold" for an incoming call, then the global status is ***"Hold inbound call"***.
- If all the extensions are idle, the global status is ***"Idle"***.

Depending on the options ticked in the ***"Agent day status configuration"*** (see Sheet U-485), the values of the following statuses are available for each agent (see Figure 10.57):

Note: *For each status, the number of values displayed varies from 1 to 4 (**Number**, **Total**, **Percentage** and **Average**).*

- If the option ***[Inbound calls (DCP)]*** or ***[Outbound calls (DCP)]*** is ticked:

  -***number*** of DCP calls: indicates the number of calls during which the global status of the extensions used by the agent was or still is "DCP (Direct Call Processing)". This status is available both for inbound and outbound calls: these two values are distinct.

  -***Total*** duration of DCP calls: indicates the time during which the global status of the extensions used by the agent was DCP. This status is available both for inbound and outbound calls: these two values are distinct.

-***Percentage*** of the total DCP duration: indicates the percentage of DCP time compared to the total work duration.

-***Average*** duration of DCP calls: indicates the average DCP time for each call handled by the agent. This value depends on the total DCP duration and the number of calls handled by the agent. This status is available both for inbound and outbound calls:

- For incoming calls: total DCP duration (incoming calls) / number of incoming calls (DCP)
- For outgoing calls: total DCP duration (outgoing calls) / number of outgoing calls (DCP)

Note: *An incoming call processed twice by an agent is counted twice in the number of incoming calls handled by this agent. For example, if an agent receives a call, transfers it to another agent, then this same call is transferred back to him, this call will be counted twice.*

- If the option ***[Inbound calls presentation (reserved)]*** or ***[Outbound calls presentation (reserved)]*** is checked:

  -***Number*** of calls presented: indicates the number of calls during which the global status of the extensions used by the agent was or still is "Reserved". This status is available both for inbound and outbound calls: these two values are distinct.

  -***Total*** (Reserved) presentation duration: indicates the time during which the global status of the extensions used by the agent was "Reserved". This status is available both for inbound and outbound calls: these two values are also distinct.

  -**Percentage** of the total duration of presentation: indicates the percentage of presentation time compared to the total work duration.

  -**Average** (Reserved) presentation duration: indicates the average Reserved time for each call presented to the agent. This value depends on the total "Reserved" duration and the number of calls presented to the agent. This status is available both for inbound and outbound calls:
  - For inbound calls: total duration of (Reserved) presentation of an inbound call / number of inbound calls presented to the agent
  - For outbound calls: total duration of (Reserved) presentation of an outbound call / number of outbound calls presented to the agent.

- If the ***[Hold]*** box is ticked:

  -***Total***hold duration: indicates the time during which the global status of the extensions used by the agent was "Hold". This status is available both for inbound and outbound calls (the only value).

  -***Percentage***of the total duration of hold: indicates the percentage of hold time compared to the total work duration.

- If the ***[PCP & Idle]*** box is checked:

  -***Total*** "PCP" duration: time during which the agent was in "PCPPost-call processing" and the global status of the extensions was idle. In this case, the different "PCP" activity codes (defined in the M5000 CC Administrator application (see {Activity codes} tab in Sheet U-312) are detailed.

  -***Percentage*** of the total "PCP" duration: indicates the percentage of "PCP" time compared to the total work duration.

- If the ***[Break]*** box is checked:

  -***Total*** "Break" duration: time during which the agent was on "Break" and the global status of the extensions was idle.

  -***Percentage*** of the total "Break" duration: indicates the percentage of Break time compared to the total work duration.

- If the ***[Availability]*** box is ticked:

  -***Total*** availability time: time during which the agent was "Ready" and the global status of the extensions was idle. This value indicates the time during which the agent remained available and could process incoming and outgoing calls.

  -***Percentage*** of availability: indicates the percentage of availability time compared to the total work duration.

- If the ***[Not Ready & Idle]*** box is ticked:

-***Total*** "Not Ready" duration: time during which the agent was "Not Ready" and the global status of the extensions was idle. In this case, the different "Not Ready" activity codes (defined in the M5000 CC Administrator application, see ***{Activity codes}***tab Sheet U-312) are detailed.

-***Percentage*** of the total "Not Ready" duration: indicates the percentage of "Not Ready" time compared to the total work duration.

- If the option ***[Inbound private calls]*** or ***[Outbound private calls]*** is ticked:

  -***Total*** private duration: indicates the time during which the global status of the extensions used by the agent was "Private" for an inbound or outbound call. This status is available both for inbound and outbound calls (two distinct values).

  -***Percentage*** of the total private duration: indicates the percentage of private time compared to the total work duration.

- If the ***[Work duration]*** box is checked:

  -***Total*** work time: Time during which the agent was logged on or logged off, but in "PCP". Therefore, this value is the sum total of all the previously described durations.

- If the ***[failed inbound call presentations]***box is checked:

  -***Number*** of failed inbound call presentations: this value corresponds to the number of times a call had been presented to an agent but he did not answer because:
  - the caller had on-hooked before the agent could answer
  - the presentation timeout had been reached before the agent could answer
  - the global call presentation timeout had been reached before the agent could answer

To display an agent's day statuses in the M5000 CC Service Manager application:

The Service manager (or team supervisor) must:

u Select the agent concerned in one of the ***"Agents visualization"*** or ***"Agent availability"*** windows, then click the  button in the toolbar, or

u Right-click the agent concerned in one of the ***"Agents visualization"*** or ***"Agent availability"*** windows, then select ***[Statuses of the day]*** in the pop-up menu (see example in Figure 10.56 and Figure 10.53).

An html file appears, including (see Figure 10.57), depending on the options selected by the Service manager in the ***{General daily values}*** and ***{Detailed daily values}*** boxes in the "***Configuration agent statuses of the day***" window (see Sheet U-485):

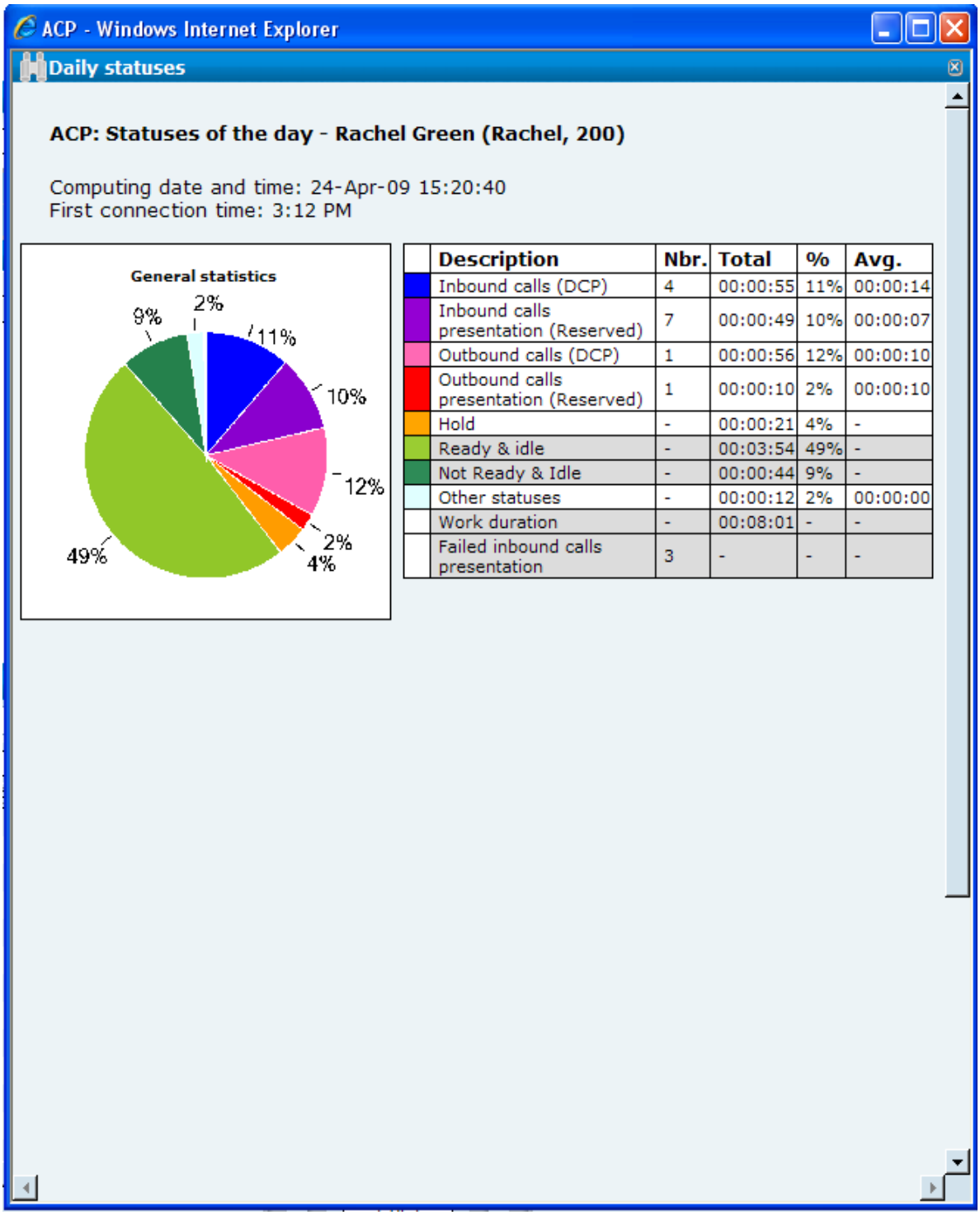
u a header indicating the agent's name and alias, the date and time of display, as well as the time the agent was first logged on in the day.

u ***{General daily values}*** :

- A pie chart showing the agent's different day statuses: only time related values are indicated on this pie chart. The other time related values are grouped in the ***"Other statuses"*** part which is always available.
- A table containing all the values of the selected statuses. This table contains both time related values and other numerical values (number of incoming calls, percentages, averages, etc.).

u ***{Detailed daily values}*** :

- Another pie chart and table set showing details of ***"Not ready & idle"*** activities if this option has been selected.
- Another pie chart and table set showing details of ***"PCP & idle"*** activities if this option has been selected.



	Description	Nbr.	Total	%	Avg.
	Inbound calls (DCP)	4	00:00:55	11%	00:00:14
	Inbound calls presentation (Reserved)	7	00:00:49	10%	00:00:07
	Outbound calls (DCP)	1	00:00:56	12%	00:00:10
	Outbound calls presentation (Reserved)	1	00:00:10	2%	00:00:10
	Hold	-	00:00:21	4%	-
	Ready & idle	-	00:03:54	49%	-
	Not Ready & Idle	-	00:00:44	9%	-
	Other statuses	-	00:00:12	2%	00:00:00
	Work duration	-	00:08:01	-	-
	Failed inbound calls presentation	3	-	-	-

Figure 10.57 EXAMPLE OF AGENT DAY STATUS EDITION

4 Viewing agents' status in form of a histogram

- First parameter the histograms in the "Status parameters" window (see Sheet U-484).
- Select the **[Agents > Histogram]** command from the M5000 CC Service Manager application's **[Status]** menu: the **Filter selection** window appears.
  - u In the **"Service"** scroll down list, select the Service (local or remote) for which the real-time status must be displayed.
  - u In the **"Filter"** scroll-down list, select the filter to be applied. If the Service manager does not want to apply a filter, the **"No filter"** value must be selected.

u Then click on ***[OK]*** to open the corresponding histogram (see Figure 10.58) (or pie chart).

When a filter is applied, the information available in the histogram (or pie chart) is more specific. Only data which meets the filter conditions is used to calculate the agent statuses.

- The display in form of histogram shows the number of agents in each activity status ("Ready", in "Post Call Processing" PCP), "Not Ready" or "Pause"):

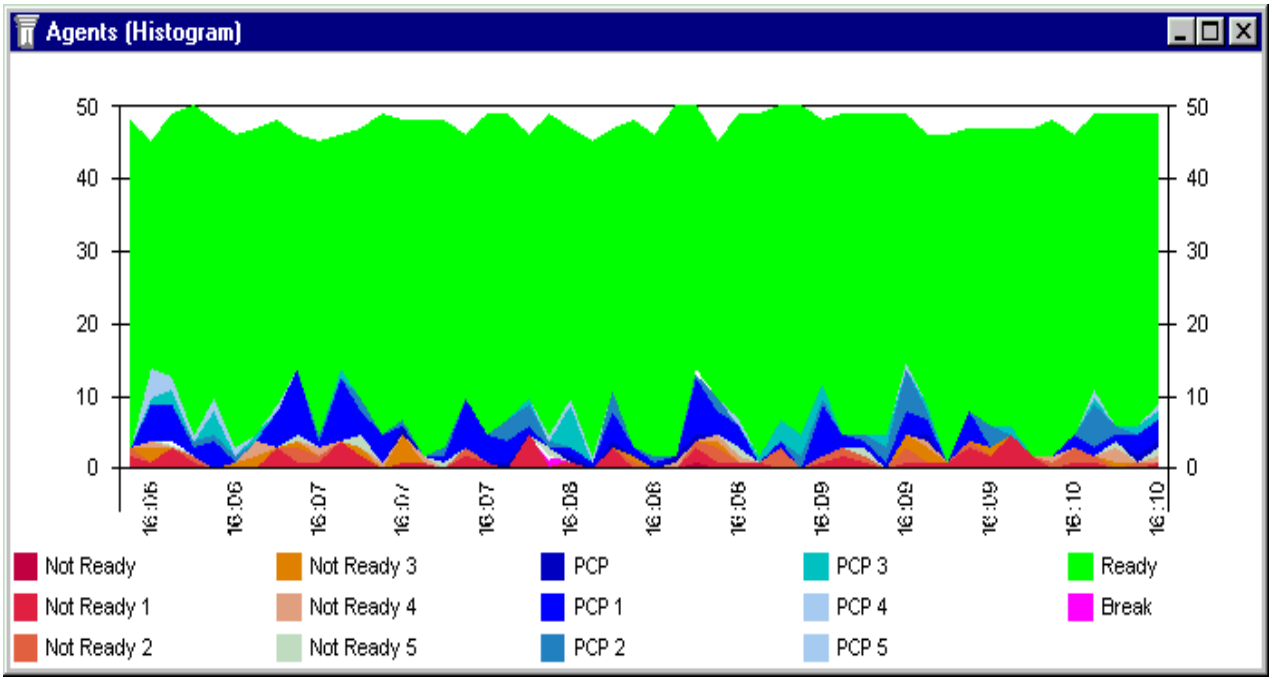


Figure 10.58 VIEWING AGENTS' STATUS IN FORM OF A HISTOGRAM

Note: 10 activity codes may be displayed for the Not Ready status, as opposed to only 5 for the PCP status.

Note: Only the "Not Ready" or "Post-Call Processing" activity codes that have already been labelled (see the **{Activity codes}** tab in the M5000 CC Administratorapplication's **File > Properties]** menu, Sheet U-312) appear in the histogram and the pie chart. The unlabelled **"Not Ready"** (or "Post-Call Processing") activity codes appear under **"Other Not Ready"** (or **"Other PCP"**).

5 Displaying agents' statuses in form of a pie chart

- First parameter the pie charts in the "Status parameter" window (see Sheet U-484).
- Select the **[Agents > Pie chart]** command from the M5000 CC Service Manager application's **[Status]** menu. the **Filter selection** window appears.

u method identical to that of the histogram (see previous step).

- The Pie chart display (see Figure 10.59) shows the percentage of users in each activity status.

Note: Moreover, if a visual activation (see § 8.3.7.7) with the real-time statuses is defined with an alarm activation threshold (see Sheet U-483) for a display property shown on the pie chart, the corresponding pie chart area starts to flash when this alarm is activated. This flashing stops when this alarm is deactivated.

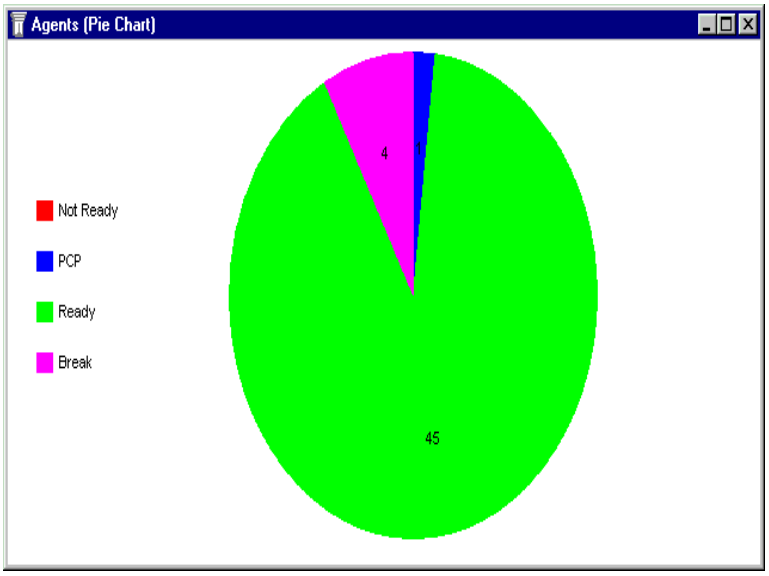


Figure 10.59 DISPLAYING AGENT STATUSES IN FORM OF A PIE CHART

U-471 : STATUS MENU: CALLS

OBJECTIVE

- To monitor calls

OPERATOR LEVEL

- Service manager, or team manager or supervisor.

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service manager or authorized team supervisor (see Sheet U-410).

PROCEDURE

- To display the dynamic information for the calls, select the **[Calls > Histogram]** or **[Calls > Pie chart]** command from the M5000 CC Service Manager application's **[Status]** menu.
- The **Filter selection** window appears :
  - In the **"Service"** scroll down list, select the Service (local or remote) for which the real-time status must be displayed.
  - In the **"Filter"** scroll-down list, select the filter to be applied. If the Service manager does not want to apply a filter, the **"No filter"** value must be selected.
  - Then click on ***[OK]*** to open the corresponding histogram or pie chart.

  When a filter is applied, the information available in the histogram (or pie chart) is more specific. Only data which meets the filter conditions is used to calculate the call statuses.

Display in histogram format

The Histogram view shows the number of calls in each status ("Not To Be Transferred", "To Be Transferred", "DCP", "Hold" or "Agent PCP"). The range of the horizontal axis (number of samples simultaneously displayed) is defined in the "Status parameters" (see Sheet U-484).

Note: You can choose to display absolute values in the histogram and/or pie chart (see Sheet U-484).

Display in form of a pie chart

The pie chart display shows the percentage of calls in each activity status.

Note: Moreover, if a visual activation (see § 8.3.7.7) with the real-time statuses is defined with an alarm activation threshold (see Sheet U-483) for a display property shown on the pie chart, the corresponding pie chart area starts to flash when this alarm is activated. This flashing stops when this alarm is deactivated.

U-472 : STATUS MENU: E-MAIL

OBJECTIVE

- To monitor E-mails

OPERATOR LEVEL

- Service manager, or team manager or supervisor.

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service manager or authorized team supervisor (see Sheet U-410).

PROCEDURE

Note: The Service manager may display dynamic information about the E-mails of the Services of which he is the manager and the team supervisor may display the E-mails of the Services for which he is the supervisor.

- To display the dynamic information for the e-mails, select the **[E-mails >Histogram]** or **[E-mails > Pie chart]** command from the M5000 CC Service Manager application's **[Status]** menu.
- The **Filter selection** window appears :
  - In the **"Service"** scroll down list, select the Service (local or remote) for which the real-time status must be displayed.
  - In the **"Filter"** scroll-down list, select the filter to be applied. If the Service manager does not want to apply a filter, the **"No filter"** value must be selected.
  - Then click on ***[OK]*** to open the corresponding histogram or pie chart.

  When a filter is applied, the information available in the histogram (or pie chart) is more specific. Only data which meets the filter conditions is used to calculate the E-mail statuses.

Display in histogram format

The Histogram view shows the number of E-mails in each status ("Server", "Wait", "User "or "Reserved"). The range of the horizontal axis (number of samples simultaneously displayed) is defined in the "Status parameters" (see Sheet U-484). The E-mails histogram shows stacked values for the E-mails statuses.

Display in form of a pie chart

The Pie chart view shows the percentage of E-mails in each activity status.

Note: Moreover, if a visual activation (see § 8.3.7.7) with the real-time statuses is defined with an alarm activation threshold (see Sheet U-483) for a display property shown on the pie chart, the corresponding pie chart area starts to flash when this alarm is activated. This flashing stops when this alarm is deactivated.

U-473 : STATUS MENU: EXTENSIONS

OBJECTIVE

- To monitor extensions.

OPERATOR LEVEL

- Service manager, or team manager or supervisor.

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service manager or authorized team supervisor (see Sheet U-410).

PROCEDURE

- To display the dynamic information for a set's extensions, select the **[Extensions > Histogram]** or **[Extensions > Pie chart]** command from the M5000 CC Service Manager application's **[Status]** menu.
- The **Filter selection** window appears :
  - In the **"Service"** scroll down list, select the Service (local or remote) for which the real-time status must be displayed.
  - In the **"Filter"** scroll-down list, select the filter to be applied. If the Service manager does not want to apply a filter, the **"No filter"** value must be selected.
  - Then click on ***[OK]*** to open the corresponding histogram or pie chart.

  When a filter is applied, the information available in the histogram (or pie chart) is more specific. Only data which meets the filter conditions is used to calculate the extension statuses.

Display in histogram format

The Histogram view shows the number of extensions in each status ("Reserved", "DCP", "Hold", "Private In", "Private Out" or "Idle"). The range of the horizontal axis (number of samples simultaneously displayed) is defined in the "Status parameters" (see Sheet U-484).

Note: You can choose to display absolute values in the histogram and/or pie chart (see Sheet U-484).

Display in form of a pie chart

The pie chart display shows the percentage of telephone extensions in each activity status.

Note: Moreover, if a visual activation (see § 8.3.7.7) with the real-time statuses is defined with an alarm activation threshold (see Sheet U-483) for a display property shown on the pie chart, the corresponding pie chart area starts to flash when this alarm is activated. This flashing stops when this alarm is deactivated.

U-474 : STATUS MENU: WEB SESSIONS

OBJECTIVE

- To monitor Web sessions.

OPERATOR LEVEL

- Service manager, or team manager or supervisor.

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service manager or authorized team supervisor (see Sheet U-410).

PROCEDURE

Note: The Service manager may display dynamic information about the e-mails of the Services of which he is the manager and the team supervisor may display the e-mails of the Services for which he is the supervisor.

Note: Information on the status of web sessions is shown for one Service at a time.

- To display the dynamic information for the Web sessions, select the **[WebSessions > Histogram]** or **[WebSessions > Pie chart]** command from the M5000 CC Service Manager application's **[Status]** menu.
- The **Filter selection** window appears :
  - In the **"Service"** scroll down list, select the Service (local or remote) for which the real-time status must be displayed.
  - In the **"Filter"** scroll-down list, select the filter to be applied. If the Service manager does not want to apply a filter, the **"No filter"** value must be selected.
  - Then click on ***[OK]*** to open the corresponding histogram or pie chart.

  When a filter is applied, the information available in the histogram (or pie chart) is more specific. Only data which meets the filter conditions is used to calculate the Web session statuses.

Display in histogram format

The Histogram view shows the number of associated web sessions and the number of non-associated web sessions. The range of the horizontal axis (number of samples simultaneously displayed) is defined in the "Status parameters" (see Sheet U-484). The web sessions histogram shows the stacked values of web session statuses.

Display in form of a pie chart

The Pie chart view shows the number of associated and non-associated web sessions.

Note: Moreover, if a visual activation (see § 8.3.7.7) with the real-time statuses is defined with an alarm activation threshold (see Sheet U-483) for a display property shown on the pie chart, the corresponding pie chart area starts to flash when this alarm is activated. This flashing stops when this alarm is deactivated.

U-475 : STATUS MENU: QUALITY OF SERVICE

OBJECTIVE

- To monitor the quality of service of voice calls.

OPERATOR LEVEL

- Service manager, or team manager or supervisor.

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service manager or authorized team supervisor (see Sheet U-410).

PROCEDURE

- To display the dynamic information for the Quality of Service for voice calls, select the **[Quality of Service > Histogram]** or **[Quality of Service > Pie chart]** command from the M5000 CC Service Manager application's **[Status]** menu.
- The **Filter selection** window appears :
  - In the **"Service"** scroll down list, select the Service (local or remote) for which the real-time status must be displayed.
  - In the **"Filter"** scroll-down list, select the filter to be applied. If the Service manager does not want to apply a filter, the **"No filter"** value must be selected.
  - Then click on ***[OK]*** to open the corresponding histogram or pie chart.

  When a filter is applied, the information available in the histogram (or pie chart) is more specific. Only data which meets the filter conditions is used to calculate the call Service quality.

Display in histogram format

the Histogram view shows the percentage of calls abandoned, transferred before or after the quality of Service threshold. The range of the horizontal axis (number of samples simultaneously displayed) is defined in the "Status parameters" (see Sheet U-484).

Note: You can choose to display absolute values in the histogram and/or pie chart (see Sheet U-484).

Display in form of a pie chart

The Pie chart view shows the same information as the Histogram view

Note: Moreover, if a visual activation (see § 8.3.7.7) with the real-time statuses is defined with an alarm activation threshold (see Sheet U-483) for a display property shown on the pie chart, the corresponding pie chart area starts to flash when this alarm is activated. This flashing stops when this alarm is deactivated.

U-476 : STATUS MENU: QUALITY OF SERVICE FOR E-MAILS

OBJECTIVE

- To monitor the quality of Service of E-mails.

OPERATOR LEVEL

- Service manager, or team manager or supervisor.

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service manager or authorized team supervisor (see Sheet U-410).

COMMENTS

Status information on e-mail quality of service is displayed for one service at a time and its threshold value appears in the e-mail Waiting time histogram. The e-mail quality of service threshold is set by the service manager. The E-mails are categorized as follows:

- The percentage of e-mails processed before reaching the threshold
- The percentage of e-mails processed after the threshold has been reached.

PROCEDURE

- To display the dynamic information about the Quality of Service for E-mails, select the **[Quality of Service for E-mails > Histogram]** or **[Quality of Service for E-mails > Pie chart]** command from the M5000 CC Service Manager application's **[Status]** menu.
- The **Filter selection** window appears :
  - In the **"Service"** scroll down list, select the Service (local or remote) for which the real-time status must be displayed.
  - In the **"Filter"** scroll-down list, select the filter to be applied. If the Service manager does not want to apply a filter, the **"No filter"** value must be selected.
  - Then click on ***[OK]*** to open the corresponding histogram or pie chart.

When a filter is applied, the information available in the histogram (or pie chart) is more specific. Only data which meets the filter conditions is used to calculate the E-mail statuses.

Display in histogram format

The Histogram window shows the percentage of e-mails processed before and after the e-mail quality of Service threshold. The range of the horizontal axis (number of samples simultaneously displayed) is defined in the "Status parameters" (see Sheet U-484). The values are stacked and their sum equals 100.

Display in form of a pie chart

The Pie chart view shows the same information as the Histogram view

Note: Moreover, if a visual activation (see § 8.3.7.7) with the real-time statuses is defined with an alarm activation threshold (see Sheet U-483) for a display property shown on the pie chart, the corresponding pie chart area starts to flash when this alarm is activated. This flashing stops when this alarm is deactivated.

U-477 : STATUS MENU: WAITING TIME

OBJECTIVE

- To monitor waiting times

OPERATOR LEVEL

- Service manager, or team manager or supervisor.

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service manager or authorized team supervisor (see Sheet U-410).

PROCEDURE

- To display the dynamic information concerning the waiting times, select the **[Waiting time > Histogram]** command from the M5000 CC Service Manager application's **[Status]** menu.
- The **Filter selection** window appears :
  - In the **"Service"** scroll down list, select the Service (local or remote) for which the real-time status must be displayed.
  - In the **"Filter"** scroll-down list, select the filter to be applied. If the Service manager does not want to apply a filter, the **"No filter"** value must be selected.
  - Then click on ***[OK]*** to open the corresponding histogram or pie chart.

    When a filter is applied, the information available in the histogram is more specific. Only data which meets the filter conditions is used to calculate the waiting time statuses.

  This histogram display shows the development of the following parameters:

  - **"Average time before abandon"**,
  - **"Average time before answer"**,
  - **"Longest wait (waiting calls)"**,
  - **"Longest wait (abandoned calls)"**,
  - **"Longest wait (answered calls)"**,
  - **"The acceptable Quality of Service level"**, i.e. the threshold defined in the Service manager (see **{Service}** tab, Sheet U-417) is also displayed.

  The range of the horizontal axis (number of samples simultaneously displayed) is defined in the "Status parameters" (see Sheet U-484).

U-478 : STATUS MENU: E-MAIL TREATMENT TIMES

OBJECTIVE

- To monitor E-mail processing times.

OPERATOR LEVEL

- Service manager, or team manager or supervisor.

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service manager or authorized team supervisor (see Sheet U-410).

PROCEDURE

- To display dynamic information about the E-mail processing times, select the **[Processing timefor E-mails > Histogram]** command from the M5000 CC Service Managerapplication's **[Status]** menu.
- The **Filter selection** window appears :
  - In the **"Service"** scroll down list, select the Service (local or remote) for which the real-time status must be displayed.
  - In the **"Filter"** scroll-down list, select the filter to be applied. If the Service manager does not want to apply a filter, the **"No filter"** value must be selected.
  - Then click on ***[OK]*** to open the corresponding histogram or pie chart.

  When a filter is applied, the information available in the histogram is more specific. Only data which meets the filter conditions is used to calculate the statuses of E-mail processing times.

Note: The range of the horizontal axis (number of samples simultaneously displayed) is defined in the "Status parameters" (see Sheet U-484).

- The e-mail processing time histogram shows:
  - **“The longest processing time for an e-mail”**: the longest e-mail processing time concerns e-mails whose processing is finished. This value is calculated for every status broadcast interval (defined by the administrator).
  - **“The average processing time for an e-mail”**: the average E-mail processing duration concerns the E-mails whose processing is finished. This value is calculated for each status broadcast interval.
  - **"Longest treatment duration for an E-mail that still is in process"**: the longest processing time for an e-mail that is still being processed concerns e-mails that have not yet been completely processed.
  - **"Quality of Service threshold for e-mails"**, i.e. the threshold defined in the Service manager (see **{Service}** tab, Sheet U-417) is also displayed.

  In this histogram, values are not stacked: each line represents the actual value (expressed in seconds).

Calculation

The processing time calculation is illustrated with the following example:

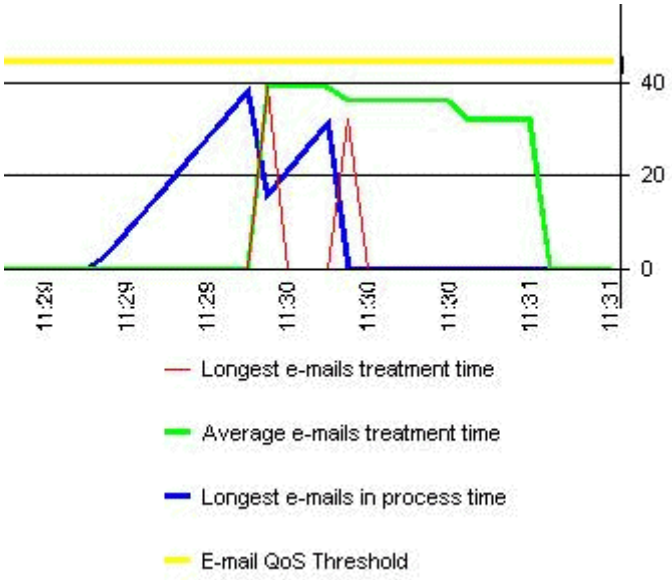


Figure 10.60 E-MAIL PROCESSING TIMES EXAMPLE

- In this example, an E-mail was sent at 11:29:10 and another at 11:29:35 (the scripts start immediately). The first E-mail processing ends at 11:29:50 (selected from pool), the second at 11:30:10.
- From 11:29:10 to 11:29:50, the longest processing time of a current e-mail corresponds to the processing time of the first e-mail being processed (0 to 40 s).
- From 11:29:50 to 11:30:10, the longest processing time of a current E-mail corresponds to the processing time of the second E-mail (15 to 35 s). Then, there is no E-mail being processed, so the processing time of current E-mails is 0.
- At 11:29:50, we can see that the longest E-mail processing time corresponds to the first E-mail processing time (40-s) and at 11:30:10 to the second E-mail processing time (35 s).
- From 11:29:50 and 11:30:10, only 1 e-mail ends during the last average value calculation period (value defined in M5000 CC Administrator = 50 s); so the average e-mail processing time equals the longest e--mail processing time of the first e-mail: 40 s.
- Between 11:30:40 and 11:30:10; a single e-mail processing operation ends during the last average value calculation period (value defined in M5000 CC Administrator = 50 s), so the average e-mail processing time equals the longest processing time for the first e-mail: 37.5 s ((40+35)/2).
- Between 11:30:40 and 11:31:00, a single E-mail processing operation ends during the last average value calculation period (value defined in the M5000 CC Administrator application is 50 s), which means that the average E-mail processing time is equal to the longest processing time of the first E-mail, i.e. 35 s. Then, no E-mail ends during the last average value calculation period (value defined in the M5000 CC Administrator application is 50 s), which means that the average E-mail processing time is 0.

U-479 : STATUS MENU: SERVICE STATUS

OBJECTIVE

- Supervising the Service status.

Note: These real-time statuses only concern the Reject 21 functionality (see § 8.3.1.8), available in a solution without IVR only.

OPERATOR LEVEL

- Service manager, or team manager or supervisor.

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service manager or authorized team supervisor (see Sheet U-410).

PROCEDURE

- To display a pie chart that indicates the proportion of call pits possible in each state, select the **[Service Status > Pie chart]** command from the M5000 CC Service Manager application's **[Status]** menu. The following legend is used:
  - In **green**, the number of call pits that are in the required sate (open or closed depending on the case)
  - In **red**, the number of call pits that are not in the required sate (open or closed depending on the case or in an intermediate state)
  - In **blue**, the number of call pits whose status is unknown: we do not know if these call pits are closed or open as their status is not currently monitored. (there is no M5000 CC Media Server launched using these call pits).

U-480 : STATUS MENU: DISPLAY

OBJECTIVE

- Managing the M5000 CC Service Manager application information bar.

OPERATOR LEVEL

- Service manager or team manager or supervisor (display part only).

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service manager or authorized team supervisor (see Sheet U-410).

PROCEDURE

- Select the **[View]** command from the M5000 CC Service Manager application's **[Status]** menu. A new field appears in the window (below the **[File]** menu), stating **"No Service"**.
- Right click on this **"No Service"** field and from the pop-up menu (see Figure 10.61) select one or more Services from those that are currently in "Production" and for which you are an authorized manager or in which you supervise at least one team.
- As Service manager, you also have the possibility to display global information on Services of the same type. If you want to display information about several Services the display toggles from one Service to another (see Figure 10.61).

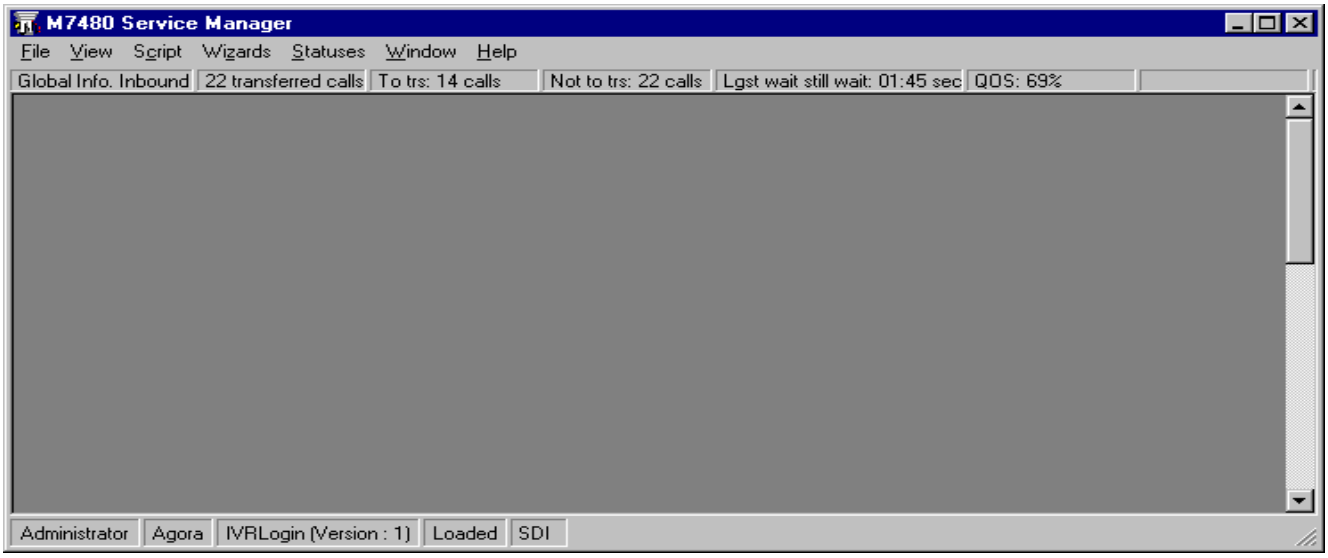


Figure 10.61 EXAMPLE OF INFORMATION BAR DISPLAY

- For a better view of the information displayed for several Services we would advise you to reduce the application to an "Always On Top" bar (**[View > Always On Top]** menu) (see Figure 10.62).

Figure 10.62 EXAMPLE OF INFORMATION BARS IN "ALWAYS ON TOP" MODE

U-481 : STATUS MENU: WALL DISPLAY

OBJECTIVE

- Displaying information on setting off alarms in the services.

OPERATOR LEVEL

- Service manager, or team manager or supervisor.

TOOL(S)

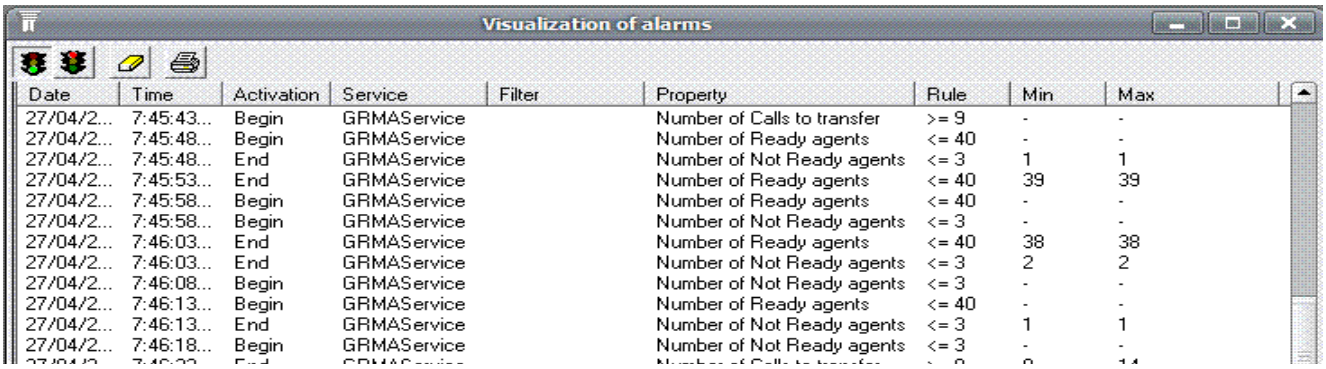
- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service manager or authorized team supervisor (see Sheet U-410).

PROCEDURE

- First select the service(s) or filters (see Sheet U-443) in the status bar (see Sheet U-480) for which the notification of configured alarm start (see Section 8.3.7.7 and Sheet U-483) must be activated.
- From the M5000 CC Service Manager application's **[Status]** menu, select the **[Alarm]** command: the **"Visualization of alarms"** configuration window opens:



Date	Time	Activation	Service	Filter	Property	Rule	Min	Max
27/04/2...	7:45:43...	Begin	GRMAService		Number of Calls to transfer	>= 9	-	-
27/04/2...	7:45:48...	Begin	GRMAService		Number of Ready agents	<= 40	-	-
27/04/2...	7:45:48...	End	GRMAService		Number of Not Ready agents	<= 3	1	1
27/04/2...	7:45:53...	End	GRMAService		Number of Ready agents	<= 40	39	39
27/04/2...	7:45:58...	Begin	GRMAService		Number of Ready agents	<= 40	-	-
27/04/2...	7:45:58...	Begin	GRMAService		Number of Not Ready agents	<= 3	-	-
27/04/2...	7:46:03...	End	GRMAService		Number of Ready agents	<= 40	38	38
27/04/2...	7:46:03...	End	GRMAService		Number of Not Ready agents	<= 3	2	2
27/04/2...	7:46:08...	Begin	GRMAService		Number of Not Ready agents	<= 3	-	-
27/04/2...	7:46:13...	Begin	GRMAService		Number of Ready agents	<= 40	-	-
27/04/2...	7:46:13...	End	GRMAService		Number of Not Ready agents	<= 3	1	1
27/04/2...	7:46:18...	Begin	GRMAService		Number of Not Ready agents	<= 3	-	-

Figure 10.63 "ALARM VIEW" WINDOW

Nota :
- *The maximum number of items in this window is 100. When this number is reached, the first item disappears when a new item is added.*
- *The information displayed in this window depends on what is selected in the status bar (example of figure: To view "HelpDesk" information, you must select this service in the status bar (see Sheet U-480).*

Here is the information given for each item (see Figure 10.63):

- **{Date}**: the date on which the information was added in this window
- **{Time}**: the time the information was added in this window
- **{Activation}** : the type of activation for this alarm. Either it starts or it ends.
- **{Service}** : the service to which this alarm applies
- **{Filter}**: the filter to which this alarm applies
- **{Property}**: the display property to which this alarm applies
- **{Rule}**: the rule associated to this alarm.
- **{Min}** : the minimum obtained during the period of activation of this alarm.
- **{Max}**: the maximum obtained during the period of activation of this alarm.

U-482 : STATUS MENU: DISPLAY PROPERTIES

OBJECTIVE

- To select the information transmitted to the wall displays.

OPERATOR LEVEL

- Service Manager

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized Service manager (see Sheet U-410).

PROCEDURE

It is possible for the Service manager to display the filtered information on the physical wall display.

- Select the **[Wall<u>d</u>isplay]** command from the M5000 CC Service Manager application's **[<u>S</u>tatus]** menu. The **"Wall display"** configuration window opens:
- Define the information you want to display on the wall display:
  - Select the parameters required from the ***{Select wall display}*** and ***{Select zone}*** drop-down lists.
  - In the ***{Available filters}*** column double click on the name of the filter you want to be displayed for it to be available in the ***{Filters to display}*** column.
  - ***[Display unfiltered information]*** check box:
    - u If you check off this box, the information displayed on the physical wall display will be the information global to the Service as well as the filtered information.
    - u If you don't check it off, the information shown will be the filtered one only.

U-483 : STATUS MENU: PARAMETER

OBJECTIVE

- To manage the information bar for the statuses displayed on the applications:
  - M5000 CC Service Manager,
  - M5000 CC User and/or,
  - M5000 CC Wall Display.

OPERATOR LEVEL

- Service Manager

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized Service manager (see Sheet U-410).

PROCEDURE

In order to visualize information regarding the different Services he manages, the Service manager has to follow 4 steps:

- Choose the Service(s) or the filters (see Sheet U-404) for which the statuses values have to be displayed
- Select the display properties from the suggested list.
- Edit the properties and modify the prefix and suffix if necessary.
- Check the option indicating to which application(s) the status values will be displayed (M5000 CC Service Manager, M5000 CC User and/or M5000 CC Wall Display).
- Configure the display, warning and alarm thresholds and audio alarm for each variable, then confirm.
  - Select the **[View properties]** command in the M5000 CC Service Manager application's **[Status]** menu.

  Note: *The team supervisors may only access the filter configuration part, but they have access to the entire display part (see Sheet U-480): they may decide that they want to show or hide the information bar, but they may never influence the choice of the non-filtered properties to be displayed.*
- To select the values of the statuses to be displayed, selected the **[Display properties > ...]** command from the M5000 CC Service Manager application's **[Status]** application then select the application field for the status values in one of the two operations in this menu:
  - **[Display properties > Service]**: your current Service or
  - **[Display properties > *Filter on skill and language*]** : a particular filter you have defined as Service manager.
- In the **"Display properties"** window (see Figure 10.64), select the display properties from those on the list in the ***{Property}*** column (the list of about sixty properties is partially different for incoming Services or outgoing Services).

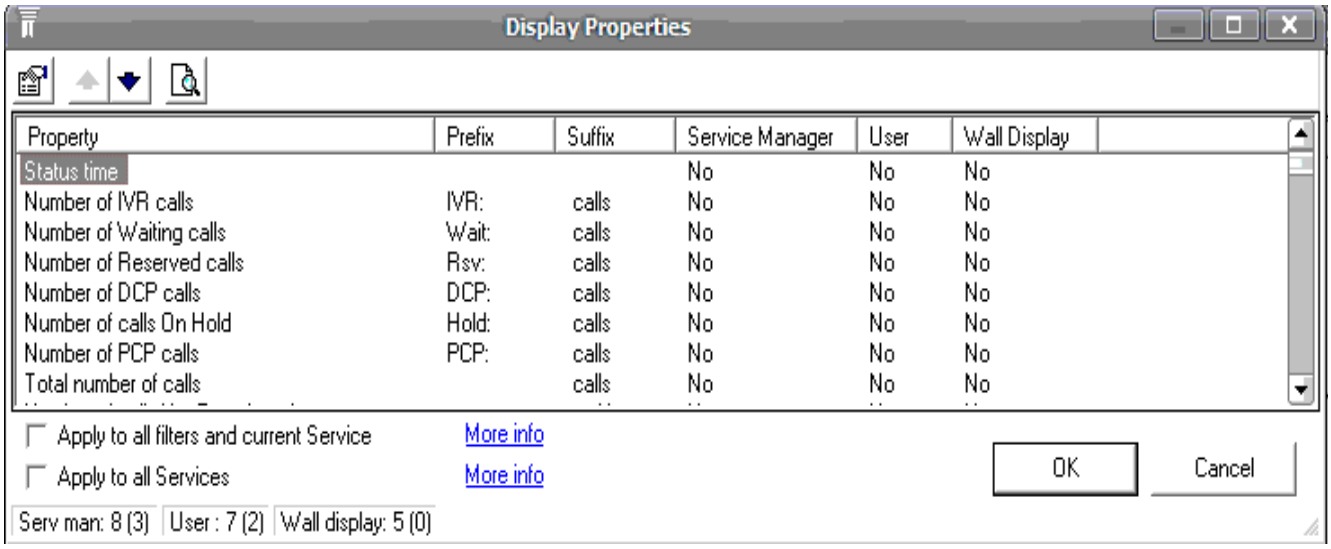


Figure 10.64 WINDOWS FOR VIEWING THE DISPLAY PROPERTIES OF VARIABLES

At the bottom of this window, two checkboxes are available (the two **"More info"** links on the right hand side of these checkboxes offer local help on the use of these two checkboxes):

- ***[Apply to all filters and current Service]***: this option is used to apply all the modifications made to these display properties to all the other filters and the current service for which the current user has sufficient rights.
- ***[Apply to all managed Services]***: this option is used to apply all the modifications made to these display properties to all the other services for which the current user has Service manager rights (so this option does not apply to a team manager or supervisor).

  If this option is combined with the first option, the modifications will be applied to all the display properties of all the services and filters for which the current user has sufficient rights to validate the modification.

Editing the display properties of a variable:

- In the **"Display properties"** window (see Figure 10.64), select a variable and edit its properties by clicking on the  button: the window for editing the properties of the selected variable opens (see examples Figure 10.65) :

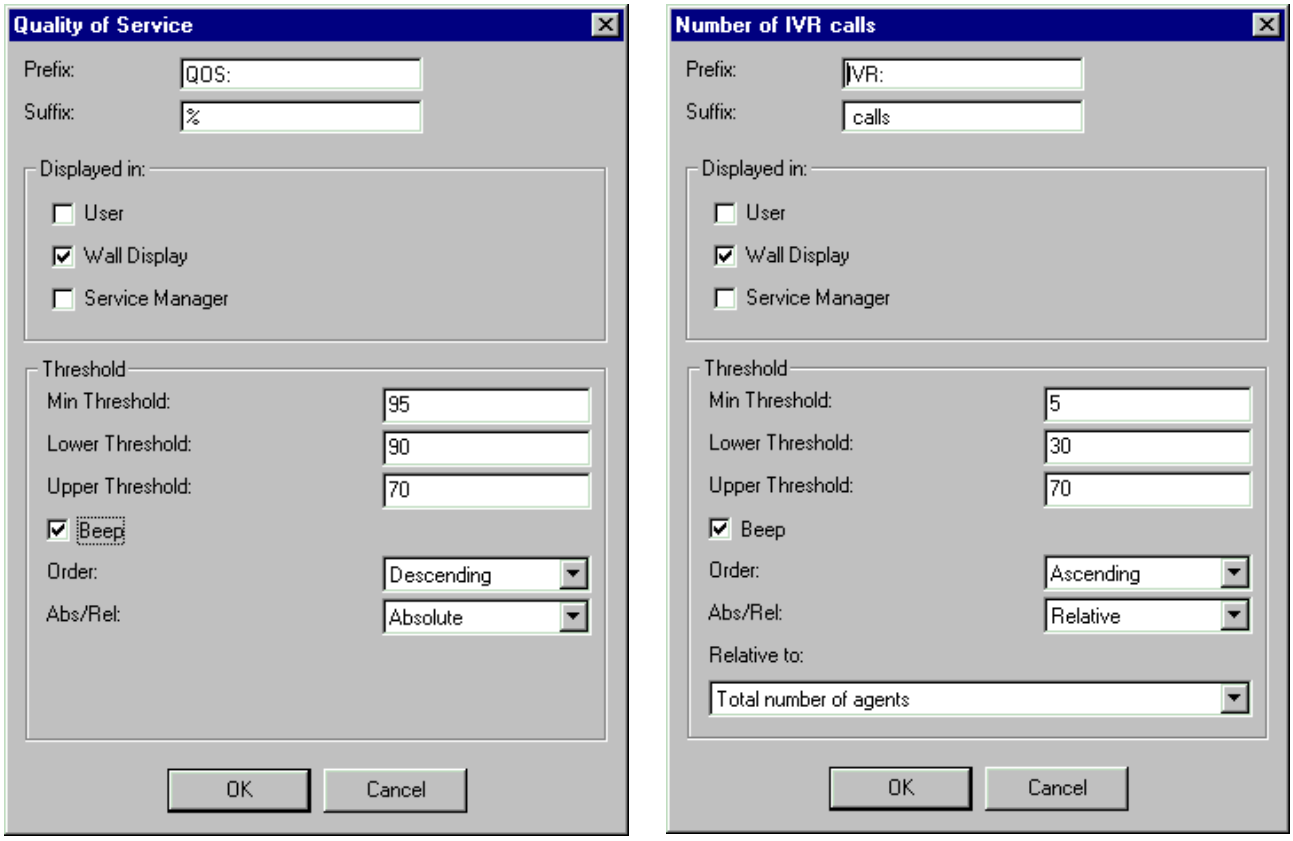


Figure 10.65 WINDOWS FOR CONFIGURING THE DISPLAY OF THE SELECTED VARIABLES

- Change by entering if necessary the ***{Prefix}*** and ***{Suffix}*** that appear on the selected applications.
- In the **{General options}** frame of each {Service Manager}, {User} or [Wall Display] tab, tick the box of each application concerned by the property display:
  - u ***[Service Manager]***
  - u ***[User]***
  - u ***[Wall Display]***.
- In the **{Threshold}** frame of each **{Service Manager}**, **{User}**or **[Wall Display]** tab, configure the following parameters:
  - u ***[Ascending]*** or ***[Descending]*** option buttons to configure the conditions for activating the various thresholds, which may be ascending or descending:
    - ***[Ascending]***: The criterion applies if the associated value is the same as or greater than the threshold defined. This gives the condition Value >= Threshold.
    - ***[Descending]***: The criterion applies if the associated value is the same as or less than the threshold defined. This gives the condition Value <= Threshold.
  - u Check box ***[Relative to another display property]***: if this box is ticked, the value used to activate the condition is relative. In this case the criterion also becomes relative. You must then select a relative value from the associated drop-down list (e.g.: "Total number of calls"). Depending on the option buttons selected previously we obtain the following as relative criterion:
    - Ascending: (Value/Relative Value) * 100 >= Threshold
    - Descending: (Value/Relative Value) * 100 <= Threshold

Note: The following rules are used when applying **relative** criteria, if:

- *Numerator/0 (the denominator is 0 but not the numerator): the system uses a representation of infinity (the largest available integer "2147483647") for the result.*
- *0/0 : the systems uses "0" for the result.*

- u check box **[Display threshold]** : if this box is ticked, when the threshold entered in the field **{Display if value is higher or equal to}** is exceeded, the system authorizes display of the

corresponding data in the status bar of theM5000 CC Service Manager, M5000 CC User or M5000 CC Wall Display application concerned.

u check box **[Warning threshold]** : if this box is ticked, when the threshold entered in the field **{Warn if value is higher or equal to}** is exceeded, an orange spot appears  next to the property value in the status bar of the M5000 CC Service Manager, M5000 CC User or M5000 CC Wall Display application concerned (see Figure 10.66). On the wall display this information can be displayed in a particular color applicable to a warning (for example: orange, see Sheet U-620 and the following tables: Tableau 10.6 to Tableau 10.8).

Figure 10.66 EXAMPLE OF WARNING SPOT DISPLAYED IN THE STATUS BAR

u check box **[Alarm activation threshold]**: if this box is ticked:

- when the threshold entered in the field **{Activate alarm if value is higher or equal to}** is exceeded, the system displays the corresponding data and an alarm is signaled. A red spot  appears in the status bar of the M5000 CC Service Manager, M5000 CC User or M5000 CC Wall Display application concerned and the different pie charts in the M5000 CC Service Manager application start to flash (agent statuses, call statuses, extension statuses, e-mail statuses, web session statuses, Quality of service of voice calls and Quality of service of e-mails: see Sheets U-470 to U-476). On the wall display this information can be displayed in a particular color applicable to an alarm (for example: red, see Sheet U-620 and the following tables: Tableau 10.6 to Tableau 10.8).

- the check box **[Beep activated for alarms]** is enabled:

  -For the **M5000 CC Service Manager** application: tick this option for the beep mechanism ("buzzer" or via sound card) of the PC where this application is installed to emit an audio alarm,

  -For wall displays:
  If you are using an **Alpha™ wall display**: tick this option if you want a beep to be played when the color of the displayed information turns red.

  -If you are using an **Activox** wall display: check this option so that the information displayed flashes when it turns red until it becomes amber or green again. This equipment does not produce a beep.

Nota : • *To configure the colors of the wall display refer to Sheet U-620.*

• *The example values in the following tables (Tableau 10.6 to Tableau 10.8) are the values in the screenshots in Figure 10.65 and the colors given are those of a wall display.*

Tableau 10.6 DESCRIPTION OF THE INFORMATION IN THE FIELDS IN THE "THRESHOLDS" BOX

PROPERTY	THE QUALITY OF SERVICE	NUMBER OF IVR CALLS
Display threshold	95%	5
Warning threshold	90%	30
Alarm activation threshold	70%	70
Absolute/Relative	Absolute	Relative to the number of agents
Ascending / Descending	Descending	Ascending

Tableau 10.7 QUALITY OF SERVICE

IF	THE QUALITY OF SERVICE IS	DESCENDING
And	greater than 95%	information will not be displayed
	between 90 and 95%	information will be displayed in green
	between 70 and 90%	information will be displayed in amber
	lower than 70%	information will be displayed in red

Tableau 10.8 NUMBER OF IVR CALLS

IF	THE NUMBER OF IVR CALLS IS	ASCENDING
And	lower than 5	information will not be displayed
	between 5 and 30.	information will be displayed in green
	between 30 and 70.	information will be displayed in amber
	greater than 70	information will be displayed in red

- Click on ***[OK]*** once you have configured each variable.

U-484 : STATUS MENU: REPORTS

OBJECTIVE

- To configure the sampling, status and alarm beep information display parameters.

OPERATOR LEVEL

- Service manager, or team manager or supervisor.

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must log in and identify yourself as a Service manager or authorized team supervisor (see Sheet U-410).

PROCEDURE

To access the window for configuring the status information parameters

- Select the **[Parameters]** command from the M5000 CC Service Manager application's **[Status]** menu: The "Status settings" window opens (see Figure 10.67): The 4 boxes in this window are used to modify the status information parameters:
  - Setting the number of samples displayed in the monitoring
  - Displaying of status value in the charts
  - Displaying the different "Not Ready" or PCPstatuses,
  - Setting alarm beep notification.

To set the number of samples displayed in the monitoring

- In the ***{Number of statuses shown in histogram}*** text box, enter the number of status samples to display in histograms.

To display absolute status values on histogram and/or Pie chart

- Check the ***[Histogram]*** and/or ***[Pie chart]*** box in the ***{Display status values for }*** box to display the status values in the graphs.

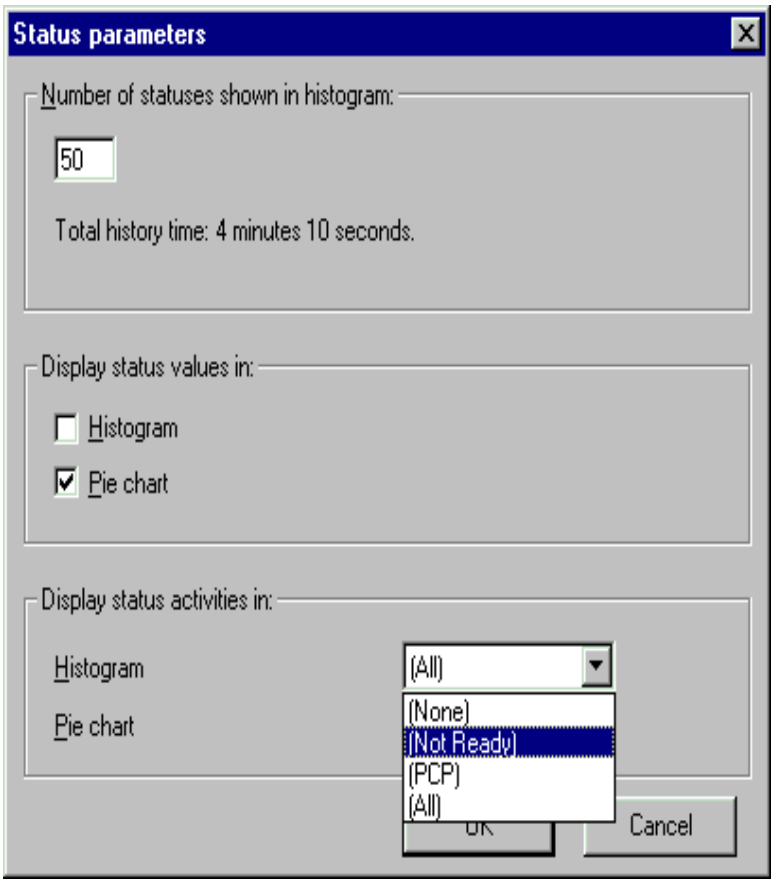


Figure 10.67 STATUS SETTING CONFIGURATION WINDOWS

To display the different not ready or PCP status on histogram and/or pie chart

- In the "Mode" drop-down menu***{Display activity codes for : Histogram*** or ***Pie chart}*** select the activity codes you wish to display.
- Click on ***[OK]*** once you have configured each variable.

To activate and set audio alarm notification

- Tick the box ***[Beeps when alarms threshold are reached]*** if you wish to hear a beep when an alarm is activated (see section 8.3.7.7).
- Tick the box ***[Minimum delay between two beeps]*** and enter a value in the ***{seconds}*** field to set a maximum time between two beeps (during this time no notification is possible).

Note: This option controls the beep selected when an alarm was defined with activation threshold (see Sheet U-483).

U-485 : STATUS MENU: &CONFIGURATION STATUSES OF THE DAY

OBJECTIVE

- To configure the day statuses available for agents.

OPERATOR LEVEL

- Service Manager

TOOL(S)

- PC where the M5000 CC Service Manager application is installed.

PRELIMINARY OPERATION(S)

- You must be logged in and identified as an authorized Service manager (see Sheet U-410).

PROCEDURE

To access the window for configuring day statuses per agent

- Choose **[Configuration agent statuses of the day]** in the **[Statuses]** menu of the M5000 CC Service Manager application: The window "**Configuration agent statuses of the day**" opens.

Note: This configuration must be set for each Service (and not for each user). If several Service managers modify this configuration for a particular Service, only the last modification is effective.

To configure day statuses

Service managers can choose day statuses (or none) which will be available for the agents in their Service by selecting or deselecting the boxes in the following three frames:

1 {General daily values}:

- For each box selected, between one and four items of information (number, total, percentage and/or average) is displayed depending on the option selected: refer to "Agent's day status" display: Sheet U-470 for a display of the details of each option.

2 *{Detailed daily values}*:

- ***[Not Ready & Idle]***: time during which the agent was "Not Ready" and the global status of the extensions was idle. In this case, the different "Not Ready" activity codes (defined in the M5000 CC Administrator application, see ***{Activity codes}*** tab, Sheet U-312) are detailed.

  u When the option ***[Not Ready & Idle]*** is selected, you can select the activity code(s) corresponding to the "Not Ready" activity you wish to display. Click the ***[...]*** button on the right of the ***[Not Ready & Idle]*** option to display the ***"Activity codes choice"*** (Not Ready) window: select or deselect the activity codes concerned (the activity code Not Ready is the default), then click ***[OK]***.

- ***[PCP & Idle]***: time during which the agent was in "PCP" (Post Call Processing) and the global status of the extensions was idle. In this case, the different "PCP" activity codes (defined in the M5000 CC Administrator application (see {Activity codes} tab in Sheet U-312) are detailed.

  u When the option ***[PCP & Idle]*** is selected, you can select the "PCP" activity code(s) you wish to display. Click the ***[...]*** button on the right of the ***[PCP & Idle]*** option to display the ***"Activity codes choice"*** (PCP) window: select or deselect the activity codes concerned (the activity code PCP is the default), then click ***[OK]***.

3 {Permission}:

- ***[Statuses available for agents]***: indicates whether agents in the Service will or will not have access to view their day statuses via their user interface by clicking the button  in the tool bar of the following applications:

  u M5000 CC User application (see Sheet U-500),

  u User ActiveX Control interface (see Sheet U-700).

U-500 : USING THE MENUS AND TOOL BARS IN THE M5000 CC USER APPLICATION

OBJECTIVE

- Defining the main user tasks by indicating the presentation sheets for these tasks
- Presenting all the application's menu commands and toolbar, by specifying the links to the procedures associated with these commands.
- "For agents using a multi-line terminal, learning how to use the extension panel

OPERATOR LEVEL

- Agent

TOOL(S)

- PC where the M5000 CC User application is installed.

PRELIMINARY OPERATION(S)

Note: The M5000 CC Server application must be launched before any other application ; there is an automatic startup of the Server, should you forget to launch it.

- Commission the M5000 CC User application (see Sheet C-500).

COMMENTS

- The M5000 CC User interface contains
  - a main window (VOICE and e-mail) (see Figure 10.68in this sheet)
  - a call window (VOICE) (see Sheet U-501) or
  - an E-MAIL window (E-mail) (see Sheet U-502).

PROCEDURE

Definition of the main user tasks:

- Basic and start-up operations for the M5000 CC User application (see § 8.4.10.3),
- Operations related to the voice calls (see § 8.4.10.4) and use of the voice call management windows (see Sheet U-501),
- Operations related to e-mails (see Section 8.4.10.5) and use of e-mail management windows (see Sheet U-502).

Description of the M5000 CC User application menus:

- The general M5000 CC User application window contains the following menus (see Figure 10.68 and Tableau 10.9):

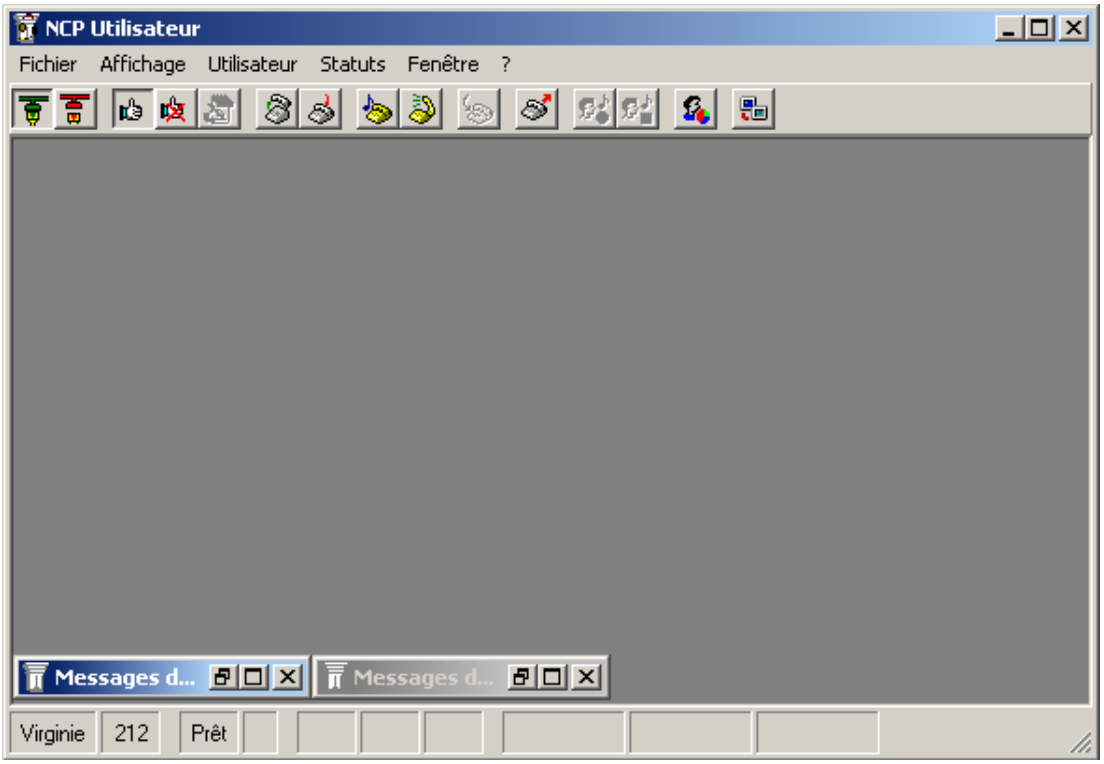


Figure 10.68 GENERAL OVERVIEW OF THE APPLICATION WINDOW M5000 CC USER

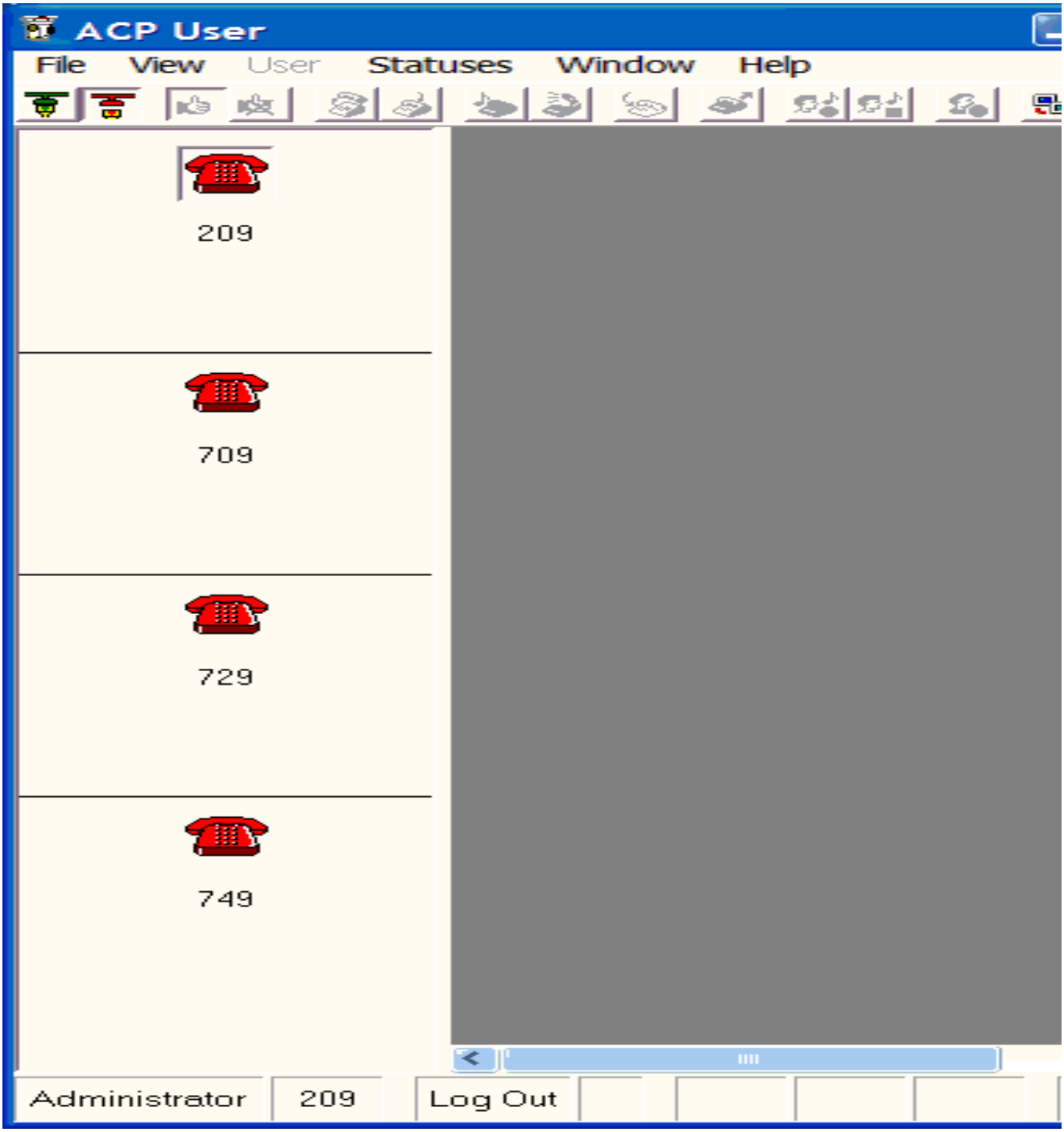


Figure 10.69 MAIN WINDOW OF THE M5000 CC USER APPLICATION IN MULTI LINE MODE

- Refer to the corresponding U sheets when you need more information on a particular command:

Tableau 10.9 LIST OF APPLICATION MENU COMMANDS M5000 CC USER

Menus and commands	Function or Comment	Sheet No.
File :	Access to general commands	
Login	Connect the agent to the M5000 CC Server	U-510

Tableau 10.9 LIST OF APPLICATION MENU COMMANDS M5000 CC USER

Logout	Disconnect the agent from the M5000 CC Server	U-510
Print	To print the user's extensions.	U-511
Exit	Command to close the application	
View :	To access the display commands	
Extensions	Open the extension display window.	U-520
Tracking tools	Open the tracking tool display window.	U-520
Pool	Open the "Pool" management window associated with the agent.	U-520
User :	Access to the user management commands	
Ready	Change agent status to "Ready".	U-530
Not Ready	Change agent status to "Not Ready" or "Not Ready with an activity code".	U-530
Post Call Processing	Change call status to Post-Call Processing (PCP) or to Post-Call Processing (PCP) with an activity code.	U-531
Status :	Access the status display command.	
View	Manage the display of information bar on Service status properties.	U-540
Window :	Access to commands which describe (cascade horizontal) and activate the windows that are open on the screen:	
?	Access to "A bout" the application	

Description of extension panel

When the agent is using a multi-line terminal, the extension panel is displayed on the left side of the M5000 CC application main window. (see Figure 10.69).

This panel contains one section per available line. The following information is available for each line:

- An icon representing the line status (see Tableau 10.10).
- The line number.

The following information is displayed when a call is available on the line:

- The period during which the line has been in this status
- For professional calls, the service name
- The caller name (if available) or phone number.

To select a line, click the corresponding icon. The telephony operations on the toolbar (answer call, end call, put call on hold, resume call on hold, transfer, start recording, stop recording) only apply to the selected line.

The application automatically selects the corresponding line:

- An agent selects the management window for the voice calls associated with the call available on the line.
- The call on the line becomes active.

When you right-click the icon, the application shows a drop-down menu used to perform telephony operations on the line.

Finally, when you double-click the icon, you can:

- Answer a call when the line is ringing
- Resume a call put on hold on the line

Tableau 10.10 OVERVIEW OF LINE STATUS ICONS

STATUS	Free	DCP (Direct Call Processing)	On hold	Reserved	Private inbound call	Private outbound call
Agent Disconnected						
Agent not ready						
Agent ready						

Description of the M5000 CC User application toolbar

When you click on the  button the M5000 CC User application is reduced to a toolbar (see Figure 10.70) which may be very practical if you do not have an agent script and do not therefore manage the return of the sheet in the application. This supposes that you have the licenses for the M5000 CC User applications but that the agents only use them to use the standard telephony functions and to manage their statuses.

Three fields in the toolbar are reserved for displaying global variables: these are then used to retrieve the caller's name from the scenario, or any other information likely to help agents in their tasks.

Figure 10.70 M5000 CC USER APPLICATION WINDOW REDUCED TO A TOOLBAR

Description of the buttons in the toolbar:

Tableau 10.11

Buttons	Name	Description
	**Connection**	This button lets agents connect to the M5000 CC Server and receive calls
	**Agent log out**	This button disconnects an agent from the M5000 CC Server. He or she becomes invisible for the other applications.
	**Set Ready**	This button sets an agent "Ready" to receive new calls.
	**Set Not Ready**	This button sets an agent "Not ready". The agent remains logged in to the server (and can be seen by the other agents) but does not receive any calls.
	**Set current call in Post Call Processing**	This button changes the agent to the Post Call Processing (PCP) process: the agent cannot receive any calls but can carry out certain actions related to the previous call
	**Answering a call**	This button allows the agent to take the call.
	**Release call**	This button allows the agent to hang up the phone extension.
	**Put call on hold**	This button allows the agent to place the call on hold.
	**Return to held call**	This button allows the agent to pick up the held call.
	**Transfer call**	This button allows the agent to transfer the call to another agent (this button is available only if the script executes a "TransferCallAgent" node). See general information in § 8.4.10.4.1).
	**Make outgoing professional call.**	This button enables the agent to make an outgoing professional call on his or her own initiative.
	**Start recording**	This button lets the agent start recording the conversation (this button is only available when the agent is in communication with a customer). For the recording to be carried out successfully, the predefined Conversation Recording Service must be set to "Production", and a DNIS defined for this Service. If these conditions are not respected an error message will alert the user that the configuration used to activate this functionality must be checked. See general information in § 8.4.10.4.2).

Tableau 10.12

Buttons	Name	Description
	**Stop recording**	This button lets the agent stop recording the conversation. The agent will only be able to press this button if the conversation is actually being recorded.
	**Agent day statuses**	This button lets the user view an ".html" file with all the statuses for the day in question. See Display day statuses for an agent: in this sheet.
	**Switch to toolbar**	This button reduces the M5000 CC User application to a combination of the toolbar and the status bar (see Figure 10.70).
	**Exit**	This button closes the M5000 CC User application.

Tableau 10.13 DESCRIPTION OF THE M5000 CC USER APPLICATION TOOLBAR BUTTONS

Description of the status bar:

This part of the main window (see Figure 10.68 and Figure 10.70) displays some general information about the user:

- the name of the user
- the name of his phone
- the agent state

Display day statuses for an agent:

An agent can have the right to display his day statuses. The permission to display data and the data displayed depend on the configuration of the day statuses of each manager of each Service to which the agent is assigned.

An agent can be assigned simultaneously to several Services and to one or more teams in different Services. Each Service manager sets his own configuration for day statuses. The following rules are applied:

- The agent can view his day statuses if the option ***[Available statuses for agents]*** has been selected in at least one of the services to which he is assigned. The button  will then be available in the M5000 CC User application.
- The agent displays all the day statuses selected in at least one Service.

Example : Let us suppose there are two different Services: the **"Technical Support"** Service and the **"Sales"** Service. The agent **"Paul"** is assigned to both Services.

- The "Technical Support" manager can display the following statuses:
  - Inbound calls (DCP)
  - Outbound calls (DCP)
  - Agent availability
  - The agents of the Service ***cannot*** display the day statuses.
- The "Sales" Service manager can display:
  - Presentation of inbound calls (Reserved)
  - Presentation of outbound calls (Reserved)
  - The agents of the Service ***can*** display the day statuses.
- The agent "Paul" can access his day statuses as the option ***[Statuses available for agents]*** is activated in at least one of the Services. He will have the following information:
  - Presentation of inbound calls (Reserved)
  - Presentation of outbound calls (Reserved).

U-501 : USING VOICE CALL MANAGEMENT WINDOWS

OBJECTIVE

- To use the voice call management windows.

OPERATOR LEVEL

- Agent

TOOL(S)

- PC where the M5000 CC User application is installed.

PRELIMINARY OPERATION(S)

- You must be an agent logged in to the M5000 CC User application (see Sheet U-510).

PROCEDURE

Each time a new call is assigned to the agent, a specific window appears on the screen (example Figure 10.71):

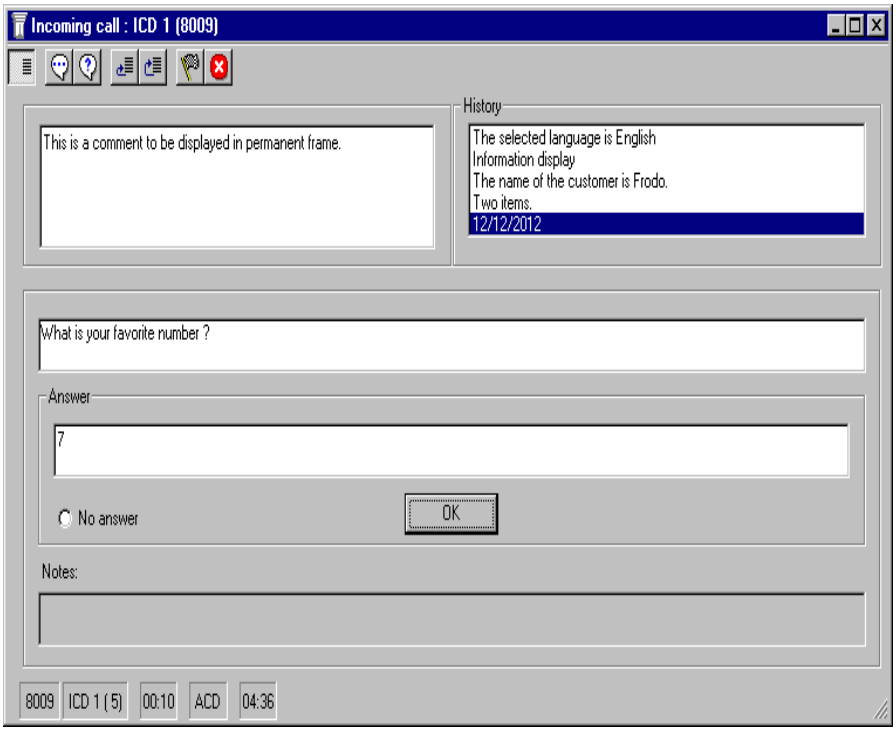


Figure 10.71 APPLICATION "VOICE CALL" WINDOW M5000 CC USER

Presentation of the permanent frame

This frame is located in the upper part of the window. If the History list is displayed, the **Permanent frame** appears to its left.

This frame shows general information to the agent. Its contents are available throughout the entire call.

Note: *See also the effect of the "Information" node (see Sheet U-503) on the permanent and question boxes.*

Presentation and definition of the History

This frame is located in the upper right corner of the window, if the **View history** button  is pressed in the toolbar.

The history list contains one item for each node executed so far during the current call. It helps the agent to remember the answers given by the customer. It also allows the agent to resume the script starting from a

particular node, using the **Resume** button  on the toolbar.

Presentation of the Question box

This frame is located in the lower part of the window.

It contains particular information related to a single script step. Its configuration differs from one node to another.

Presentation of the status bar

This part of the window displays general information about the call:

- the phone extension used
- the Service name and its version number
- the waiting time of the customer
- the status of the extension
- the communication duration

Description of the buttons in the toolbar:

Tableau 10.14 DESCRIPTION OF THE TOOLBAR BUTTONS IN THE M5000 CC USER "CALL" WINDOW

Buttons	Name	Description
	**Display history**	This button is used to display or hide the History list in the window.
	**View phrases**	This button is enabled only if the View history button is pressed. When it is clicked, every item on the History list appears as follows: DLLname <prefix><customer answer><suffix>. The <prefix> and <suffix> can be empty.
	**View questions & answers**	This button is enabled only if the View history button is pressed. When it is clicked, every item on the History list appears as follows: <question><customer answer>.
	**Resume previous**	This button resumes the script execution at the previous node. All information entered in the last node is lost.
	**Resume**	This button resumes the script execution up to the item selected on the History list. Use this possibility with caution. In fact: • all actions performed and data entered in the nodes following the selected node in the History list are lost. • this option requires resources, especially if database operations are involved. • Random actions may occur, especially during calls from external functions. The Resume feature is **not** intended to help the agent to remember previous steps of the call. To remember the answers of the customer, the agent should consult the History list (using the **View history** button). **Note:** *By default, the last item on the History list is selected. Therefore, clicking **Resume** without clicking another item first has the same effect as clicking **Resume previous**.*
	**Stop**	This button terminates the script immediately. It can be used, for example, when the conversation between agent and customer suddenly ends. All statistics on the script will be saved. In outbound Services, when the agent clicks this button, the call is considered completed. The customer will not be called again afterwards.
	**Cancel**	By clicking the **Cancel** button, the User script ends: • All the global variables that have been changed during the User script are restored to their values before the script. • A rollback is executed for all the changes made on databases by some Database Management nodes. In outbound Services, when the agent clicks this button, the call is considered not having existed at all. The customer will be called again.

U-502 : USING E-MAIL MANAGEMENT WINDOWS

OBJECTIVE

- To use the E-mail management windows:
  - General use of the "E-mail" window and buttons in the toolbar (see step **1** in this sheet)
  - Answer (see step **2** in this sheet),
  - Transmit (see step **3** in this sheet),
  - Copy (see step **4** in this sheet),
  - Move (see step **5** in this sheet).

OPERATOR LEVEL

- Agent

TOOL(S)

- PC where the M5000 CC User application is installed.

PRELIMINARY OPERATION(S)

- You must be an agent logged in to the M5000 CC User application (see Sheet U-510).

PROCEDURE

1 General use of the "E-mail" window and button in the tool bar

When an agent picks up an e-mail from the pool (see Sheet U-520), a user script is started. Depending on the nodes used (ReplyEmail, ForwardEmail, DeleteEmail), a mail window opens (example Figure 10.72).

Whatever the type of node, the window is divided in three different frames:

Presentation of the permanent frame

The permanent frame is located in the upper left corner of the window. It shows general information to the agent. It can be filled with all the information concerning an E-mail: text body, subject, sender, recipient, etc.. For this, an Info node (see Sheet U-503) has to be inserted before the E-mail node used, and global variables related to e-mail information have to be added to the ***{Comment}*** box of the Info node.

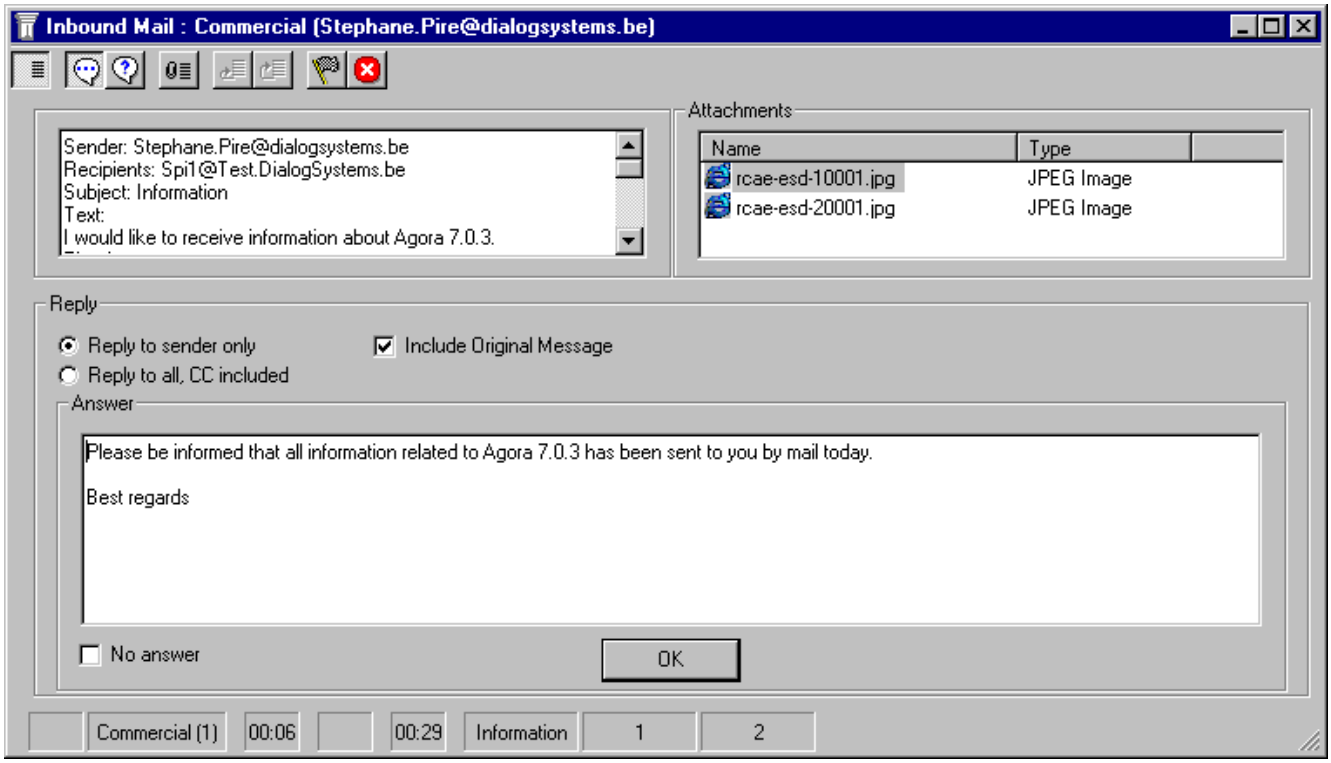


Figure 10.72 APPLICATION "E-MAIL" WINDOWM5000 CC USER

Presentation of the ***{Attachments box}***

The attachments frame is located in the upper right corner of the window. This frame shows the attached files of an E-mail. The agent can double-click on each attachment to open it. If the agent's computer knows the extension of the attached file, the opening is done with the appropriate software.

As far as faxes are concerned, the agent has to open the attachment in order to read the content of the fax. The current M5000 CC version does not let agents reply to a fax. The agent has to reply to the customer with a fax machine.

Presentation of the ***{Action}*** frame

This frame is located in the lower part of the window. It corresponds to actions that agents can do. It is different for each E-mail node. All fields are filled by default with information keyed in the corresponding node.

Description of the buttons in the toolbar:

Tableau 10.15 DESCRIPTION OF THE TOOLBAR BUTTONS IN THE M5000 CC USER "E-MAIL" WINDOW

Buttons	Name	Description
	**Display history**	This button is used to display or hide the History list in the window.
	**Stop**	This button terminates the script immediately. All statistics on the script will be saved.
	**Cancel**	This button erases all information related to the E-mail and terminates the script. All statistics are lost.
	**View attachments**	This button is used to display or hide the History list in the window.
 or 	**or Toggle between attachments and history**	This button toggles between attachments frame and history frame, in the upper left corner of the window.

Note: The **Resume**  and **Resume to previous**  buttons are no longer available.

Status bar

In the Status bar of the Mail window, general information is displayed about the request:

- Not used (display deactivated),
- Service name and its version number
- Waiting time of the customer
- Not used (display deactivated),
- Communication duration
- Field 1 of the Pool
- Field 2 of the Pool
- Field 3 of the Pool

2 Answer

In the case of **"ReplyEmail"** nodes, the agent can select to whom the reply will be sent (***[to sender]*** or ***[to all recipients]***). The agent can also choose to include the original message in the answer by checking the ***[Include Original Message]*** box. He has then to key the response in the **Answer"** box. The agent may also decide not to reply the e-mail by ticking the ***[No answer]*** check box. In this case, the Return code variable is empty.

3 Forward

In the case of **"ForwardEmail"** nodes, the agent can select to whom the forward will be done. Then, he can key a message in the "**Answer"** box for the recipient of the forward. The agent may also decide not to forward the e-mail by ticking the ***[No answer]*** check box. In this case, the Return code variable is empty.

When you forward an E-mail with a large attachment it may take 20 or 30 seconds to send it. During this time, the agent's script window is grayed out. To keep the user from thinking that the system is down, a window displays the following message: Please wait a moment

4 Copy

For the case of **"CopyEmail"** nodes, the agent can modify the "store" (list of all mailboxes and public folders related to the profile used with this Service) and the "folder" path where the E-mail will be copied.

Nota :
- *"Store" is a Microsoft Outlook term that refers to a mailbox or a public folder.*
- *A folder is a subdivision of the Mailbox to store information, in the same way as disk directories.*

The agent may also modify the message in the ***{Comments :}*** text box. to add it to the start of the text body in the E-mail to be copied.

The agent can decide to not copy this E-mail by selecting the No copy check box. In this case, the Return code variable is empty.

5 Move

For the case of **"MoveEmail"** nodes, the agent can modify the "store" (list of all mailboxes and public folders related to the profile used with this Service) and the "folder" path where the E-mail will be moved.

The agent may also modify the message in the ***{Comments :}*** text box. to add it to the start of the text body in the E-mail to be moved.

The agent may decide not to move this e-mail by ticking the ***[No move]*** check box. In this case, the Return code variable is empty.

U-503 : USING THE "INFORMATION" NODE IN THE M5000 CC USER APPLICATION

OBJECTIVE

- Use of the "Information" node in the call and E-mail management windows.

OPERATOR LEVEL

- Agent

TOOL(S)

- PC where the M5000 CC User application is installed.

PRELIMINARY OPERATION(S)

- You must be an agent logged in to the M5000 CC User application (see Sheet U-510).

PROCEDURE

This "Information" node displays any piece of information that is useful for the agent or to communicated to the customer.

Configuration on the agent's screen

The information associated with this node can appear either in the permanent frame or in the question frame.

Info in permanent frame

The information does not disappear when the next node is executed. When the **Info** node is executed, the next node is started immediately (the agent does not have to click a button to go to the next node). To update this permanent frame, a new **Information** node using the permanent option must be created (it will erase existing information).

Info in question frame

The information appears during execution of this node: it will disappear when the agent clicks ***OK***.

Example

Here is an example of an **Info** node displayed in the permanent frame immediately followed by an Info node displayed in the question frame. The second one is executed as soon as the first one is finished: both comments appear on the agent screen.

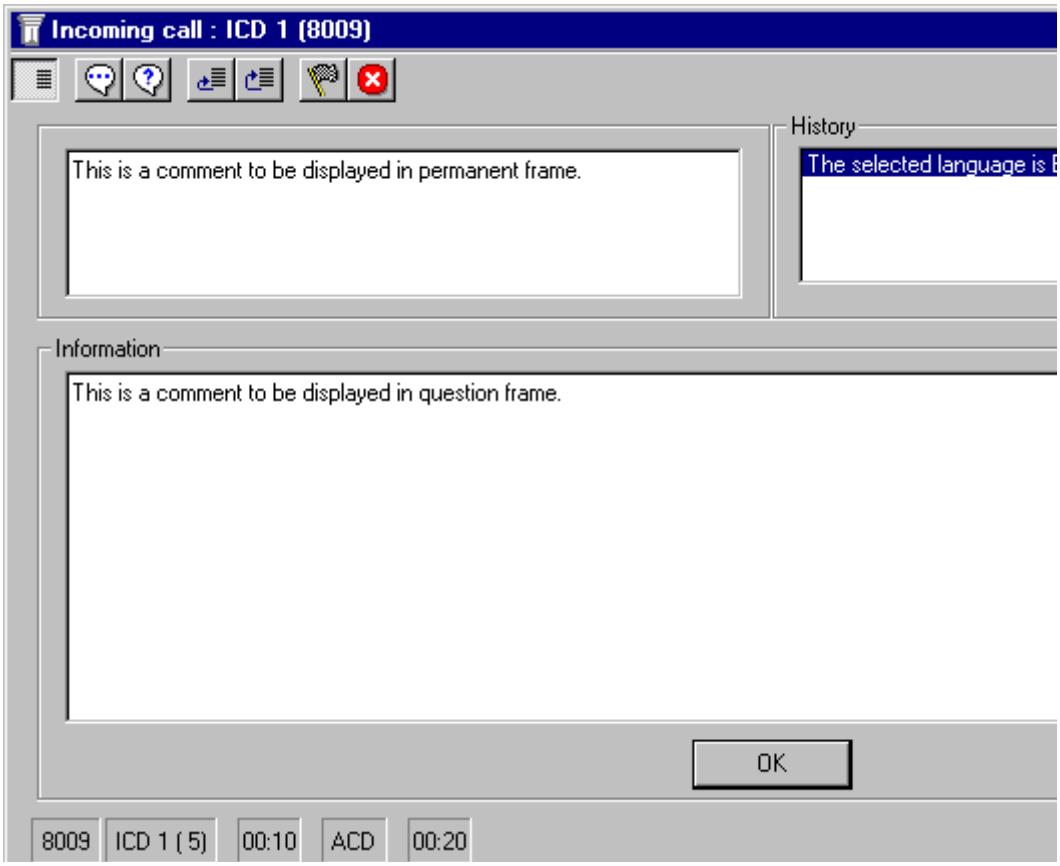


Figure 10.73 EXAMPLE OF AN "INFORMATION" NODE DISPLAYED IN A "CALL" WINDOW

U-510 : FILE MENU: "LOG-IN" / "LOG-OFF"

OBJECTIVE

- To log in (or out) the agent to/from the M5000 CC Server.

OPERATOR LEVEL

- Agent

TOOL(S)

- PC where the M5000 CC User application is installed.

PRELIMINARY OPERATION(S)

- Start the M5000 CC User application (see Sheet C-500) (see note below).

Note: You do not need to start the M5000 CC User application if you are logging in via the "IVRLogin" script.

PROCEDURE

To connect to the M5000 CC Server

- On the toolbar, click the **Login**  button or
- Select **[Login]** from the M5000 CC User application's **[File]** menu.

Once logged in, the agent may receive calls.

To disconnect from the M5000 CC Server

- On the toolbar, click the **Logout**  button or
- Select **[Logout]** from the M5000 CC User application's **[File]** menu.

Once logged out the agent cannot be seen by the other applications.

U-511 : FILE MENU: PRINT

OBJECTIVE

- To print a user's extensions.

OPERATOR LEVEL

- Agent

TOOL(S)

- PC where the M5000 CC User application is installed.

PRELIMINARY OPERATION(S)

- You must be an agent logged in to the M5000 CC User application (see Sheet U-510).

PROCEDURE

To print the user's extensions:

- In the M5000 CC User application's **[File]** menu, select **[Print > ...]** then the element to be printed (e.g.: **[> Extensions]**) : An HTML report is output in Internet Explorer.
- To print a report, use the normal Internet Explorer print option.

U-520 : DISPLAY MENU: "EXTENSIONS" / "TRACKING TOOL" / "POOL"

OBJECTIVE

- To open the extension display, tracking and "Pool" management windows associated with the agent.

OPERATOR LEVEL

- Agent

TOOL(S)

- PC where the M5000 CC User application is installed.

PRELIMINARY OPERATION(S)

- You must be an agent logged in to the M5000 CC User application (see Sheet U-510).

PROCEDURE

1 Displaying extensions

- In the M5000 CC User application's **[View]** menu, select **[Extensions]**: The **"Extensions"** window opens:

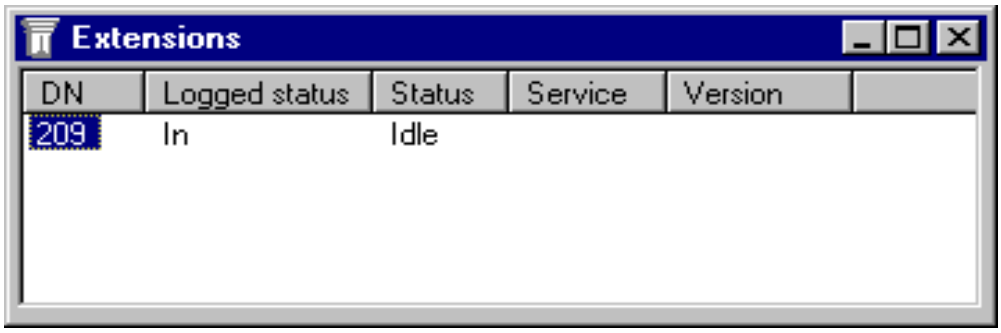


Figure 10.74 APPLICATION "EXTENSIONS" WINDOWM5000 CC USER

2 Displaying tracking

- In the M5000 CC User application's **[View]** menu, select **[Tracking tool]**: The **"Tracking tool"** window below opens:

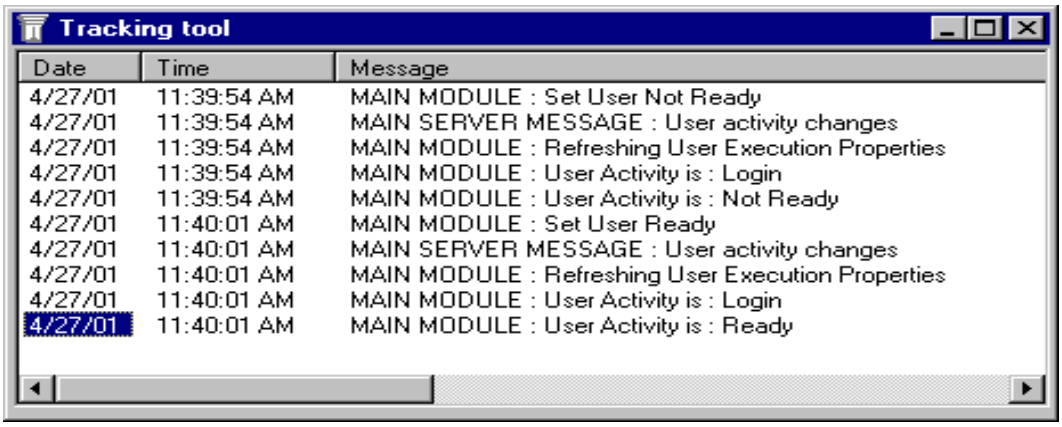


Figure 10.75 M5000 CC USER APPLICATION "TRACKING TOOL" WINDOW

3 Management of the "Pool" associated with the agent

Function of the M5000 CC User application pool

The Pool is a dynamic window which is common to all agents of the Mitel 5000 Contact Center.

From his M5000 CC User application, the agent is able to see only the E-mails corresponding to his abilities (upon languages and skills levels), to his team membership as well as to the Service(s) to which he is

assigned. Thus an agent can only handle requests for which he has the required abilities. An inbound E-mail is simultaneously shown to all agents able to handle it.

The agent will be able to see the pool window only if he is connected, but he doesn't need to be in the 'Ready' status to handle E-mails. Once the customer's request has been handled by an agent, the E-mail disappears from the pool. It means that no agent is longer able to view it. An E-mail remains present in the pool as long as the global timeout is reached.

Opening the "Pool" management window associated with the agent.

- In the M5000 CC User application's **[View]** menu, select **[Pool]**: The following **"Pool associated with user" agent xxx"** window opens:

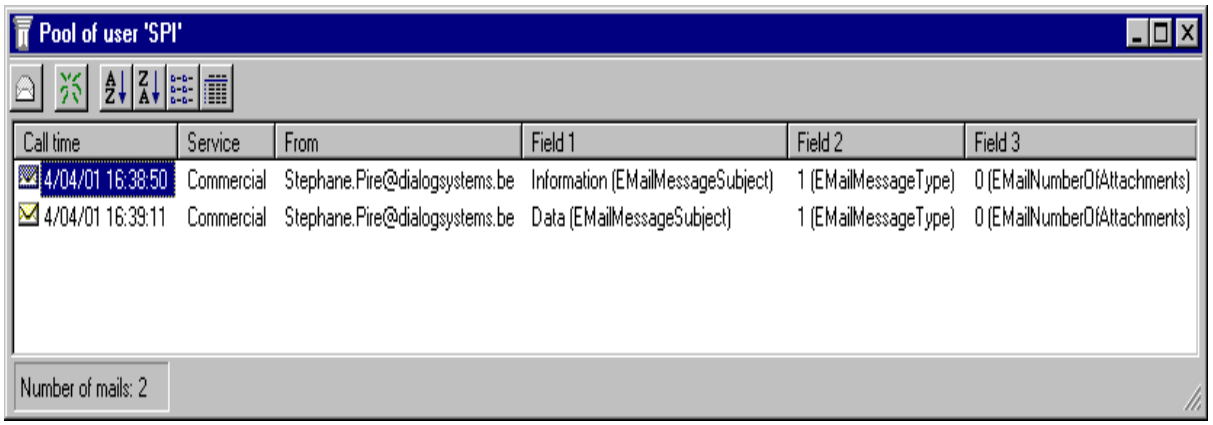


Figure 10.76 M5000 CC USER APPLICATION'S "POOL ASSOCIATED WITH USER" AGENT XXX" WINDOW

For each E-mail present in the pool, the following information is available:

- ***Arrival Time***: E-mail arrival time,
- ***{Service}*** : name of the Service to which the agent is assigned and to which the E-mail is sent,
- ***{From}***: sender's E-mail address,
- ***{Field 1}***, ***{Field 2}***, ***{Field 3}***: up to three global variables can be shown in the pool. These variables are selected in the M5000 CC Service Manager application (in the ***{Include in user display}*** field). For example, the intrinsic e-mail variables such as "EMailImportance", "EMailMessageSubject" or "EMailNumberOfAttachments" will be needed to manage the information displayed in the Pool window.

Description of the buttons in the toolbar:

Tableau 10.16 DESCRIPTION OF THE TOOLBAR BUTTONS IN THE M5000 CC USER "E-MAIL" WINDOW

Buttons	Name	Description
	**Take an E-mail**	This button allows picking up an E-mail from the Pool. Double clicking on the request has the same result.
	**Refreshing**	This button refreshes information in the window.
	**Sort ascending**	This button sorts ascending E-mails in the list, by default on the first column. The sort can also be done by clicking on the corresponding column header.
	**Sort descending**	This button sorts descending E-mails in the list, by default on the first column. The sort can also be done by clicking on the corresponding column header.
	**View list**	This button allows showing E-mails without details.
	**View details**	This button allows showing E-mails with all details.

U-530 : USER MENU: "READY" OR "NOT READY"

OBJECTIVE

- To change agent status to "Ready", "Not Ready" or "Not Ready with an activity code".

OPERATOR LEVEL

- Agent

TOOL(S)

- PC where the M5000 CC User application is installed.

PRELIMINARY OPERATION(S)

- You must be an agent logged in to the M5000 CC User application (see Sheet U-510).

PROCEDURE

Note: *See the general information on the "Ready" and "Not Ready" statuses in Section 8.4.10.6.1.*

Change to Ready

The agent must carry out one of the following actions to change to "Ready" status:

- Click the **"Set Ready"**  button in the toolbar.
- in the M5000 CC User application's **[User]** menu, select **[Ready]**,
- Contact the IVRStatus Service if it does not have any M5000 CC User application (solution with IVR only).

Change to "Not Ready"

The agent must carry out one of the following actions to change to "Not Ready" status:

- click the **Set "Not Ready"**  button in the toolbar.
- In the M5000 CC User **[User]** menu, select **[Not Ready]**,
- Contact the IVRStatus Service if it does not have any M5000 CC User application (solution with IVR only).

Change to "Not Ready with an activity code"

If the administrator defined "Not Ready" labels for certain activity codes, the agent may change to "Not Ready" status for an activity code given directly via the M5000 CC User application. To do this, the agent must click on the arrow in the scroll down menu to the right of the **Not ready** button  and select the activity code required.

Note: A maximum of 10 activity codes may appear in this sub-menu.

U-531 : USER MENU: PCP (POST CALL PROCESSING)

OBJECTIVE

- To change the call status to Post Call Processing (PCP).

OPERATOR LEVEL

- Agent

TOOL(S)

- PC where the M5000 CC User application is installed.

PRELIMINARY OPERATION(S)

- You must be an agent logged in to the M5000 CC User application (see Sheet U-510).

PROCEDURE

Note: See general information on the "Post Call Processing" in § 8.4.10.6.2.

Change to PCP

- In the **[User]** menu, select **[Post Call Processing]**
- Click the **Declare call in "Post Call Processing (PCP)"**  button in the toolbar.

Nota :
- *When the PCP status is activated, the agent's phone extension is set to "Not Ready" (NRD). As long as the agent does not switch back to Ready status (see Section 8.4.10.6.1), he will not receive any new calls from M5000 CC.*
- *The duration of PCP can be configured using the M5000 CC Service Manager application (**{Agents}** tab of the **[Properties]** command).*

Chang to "PCP with an activity code".

If the administrator has defined some labels for certain "PCP" activity codes, the agent may change to "PCP" status for an activity code given directly via the M5000 CC User application. For this, the agent must:

- Click the arrow in the drop-down menu on the right side of the PCP button  and choose the required activity code.

Note: A maximum of 10 activity codes may appear in this sub-menu.

U-540 : STATUS MENU: DISPLAY

OBJECTIVE

- To manage display of the bar for viewing Service status properties.

OPERATOR LEVEL

- Agent

TOOL(S)

- PC where the M5000 CC User application is installed.

PRELIMINARY OPERATION(S)

- You must be an agent logged in to the M5000 CC User application (see Sheet U-510).

PROCEDURE

- Once the service manager has selected the information he wishes to display on the M5000 CC User application, the agent can decide whether he wants it to be displayed or not.
- To display these Service properties, the agent may select **[View]** in his M5000 CC User application's **[Status]** menu.
- Then, by displaying a pop-up menu by right clicking on the ***{No Service}*** field (under the **[File]** menu) he selects the application fields for these properties that were selected earlier by the Service manager, i.e. the Services to which he has been assigned.
- The values of the variables appear at the top of the M5000 CC User screen under the toolbar. Moreover, if a threshold is defined for any of the properties to be displayed, this property will be managed in the same way in the status bar as the M5000 CC Service Manager application:
  - Property not displayed
  - Orange spot 
  - Red spot 

U-600 : USING THE M5000 CC WALL DISPLAY APPLICATION

OBJECTIVE

- To present the main tasks necessary to manage the wall displays and all the commands in the M5000 CC Wall Display application menus, specifying links to the procedures associated with these commands.

OPERATOR LEVEL

- Administrator or service manager, or team supervisor or manager.

TOOL(S)

- PC where the M5000 CC Wall Display application is installed.

PRELIMINARY OPERATION(S)

Note: The M5000 CC Server application must be launched before any other application ; there is an automatic startup of the Server, should you forget to launch it.

- Commission the M5000 CC Wall Display application (see Sheet C-600).

PROCEDURE

Definition of the main tasks needed to manage the wall displays:

- Basic operations needed to manage the wall displays (see Sheet U-601),

Description of the M5000 CC Wall Display application menus:

- The general M5000 CC Wall Display application window contains the following menus (see Figure 10.68 and Tableau 10.17):

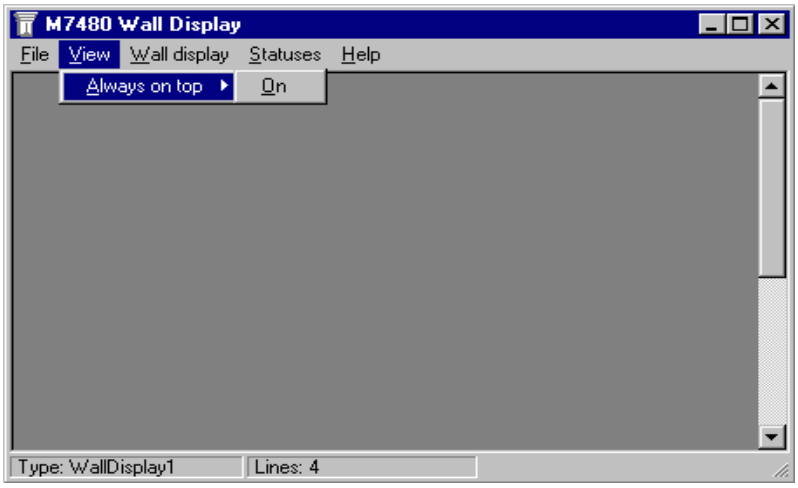


Figure 10.77 GENERAL M5000 CC WALL DISPLAY APPLICATION WINDOW

- Refer to the corresponding U sheets when you need more information on a particular command:

Tableau 10.17 LIST OF M5000 CC WALL DISPLAY APPLICATION MENU COMMANDS

MENUS AND COMMANDS	FUNCTION OR COMMENT	SHEET NO.
File :	Access to the following general command	
Exit	Command to close the application	
View :	Access to the following general command	
On top	To manage the standard or reduced "Always on top" display mode in the M5000 CC Wall Display application's general window	U-610
Wall_Display:	Access to the following general command	

Tableau 10.17 LIST OF M5000 CC WALL DISPLAY APPLICATION MENU COMMANDS

Options	To manage the options for the colours and durations of the displays on the wall displays	U-620
Status :	Access to the following general command	
View	Manage real-time display of information (statuses) about your Services in the general application window.	U-630
?	Access to "A bout" the application	

U-601 : BASIC OPERATIONS REQUIRED FOR MANAGING WALL DISPLAYS

OBJECTIVE

- To present the basic operations required to manage the wall displays that must be carried out in the M5000 CC Administrator and M5000 CC Service Manager applications.

OPERATOR LEVEL

- Administrator or Service manager.

TOOL(S)

- PC where the M5000 CC Wall Display application is installed.

PRELIMINARY OPERATION(S)

- Commission the M5000 CC Wall Display application (see Sheet C-600).

PROCEDURE

Note: If the M5000 CC Wall Display application is not started, no Mitel 5000 Contact Center information can be shown on the physical wall displays!

Definition of the main tasks needed to manage the wall displays:

To display information on a Mitel 5000 Contact Center wall display via the M5000 CC Wall Display application, you must carry out the following operations:

1 In the M5000 CC Administrator application:

- First define the wall display. Do not forget to choose the Services for which you want to display information.

2 In the M5000 CC Service Manager application:

- Select the properties to be displayed and state whether you want to display them (see Sheet U-483) :
  - u on the M5000 CC Wall Display information bar,
  - u on the physical wall display or
  - u On both.
- You can also display filtered information only or filtered information and general information about the Service (see Sheet U-482).
- The Service manager may also broadcast personal messages for the attention of the Mitel 5000 Contact Center agents (see Sheet U-433).

U-610 : DISPLAY MENU: ALWAYS ON TOP.

OBJECTIVE

- Managing the standard or reduced "Always on top" display mode in the M5000 CC Wall Display application's general window.

OPERATOR LEVEL

- Administrator or service manager, or team supervisor or manager.

TOOL(S)

- PC where the M5000 CC Wall Display application is installed.

PRELIMINARY OPERATION(S)

- Commission the M5000 CC Wall Display application (see Sheet C-600).

PROCEDURE

1 To change the M5000 CC Wall Display application main window to "Always on top" reduced mode:

- Select the **[Always on top > On]** command from the M5000 CC Wall Display application's **[View]** menu: The window is presented as follows:

Figure 10.78 PRESENTATION OF THE M5000 CC WALL DISPLAY APPLICATION WINDOW IN "ALWAYS ON TOP" MODE

2 To change the window to "Always on top" mode:

- Click on the  icon.

3 To return to standard full screen mode:

- Click on the  icon

U-620 : WALL DISPLAY MENU: OPTIONS

OBJECTIVE

- To manage the options for the colors and durations of the displays on the wall displays.

OPERATOR LEVEL

- Administrator or service manager, or team supervisor or manager.

TOOL(S)

- PC where the M5000 CC Wall Display application is installed.

PRELIMINARY OPERATION(S)

- Commission the M5000 CC Wall Display application (see Sheet C-600).

PROCEDURE

Select the **[Options]** command from the M5000 CC Wall Display application's **[Walldisplay]** menu to display one of the following windows, depending on the type of wall display you have configured in the M5000 CC Administrator application (for the Administrator only):

- "Alpha™" wall display, or
- "Activox" wall display

1 Configuration window for an "Alpha™" type display:

- Set the following fields then click on ***[OK]*** .

Tableau 10.18

FIELD NAME	DESCRIPTION	OPTIONS AVAILABLE
Prefix and suffix color :	color of the prefix and suffix of the property value you have chosen to display	red, green, amber, Rainbow1, Rainbow2, Color Mix, Autocolor selection
Properties values colour:	color of the property value	red, green, amber, Rainbow1, Rainbow2, Color Mix, Autocolor selection
Services colour:	color of the Service name	red, green, amber, Rainbow1, Rainbow2, Color Mix, Autocolor selection
Switch to next property after:	refresh frequency	1, 2, 3, 4 or 5 seconds
Personal messages colour:	color of the personal message you want to display	red, green, amber, Rainbow1, Rainbow2, Color Mix, Autocolor selection

Example:

Table11:

SERVICE NAME	PROPERTY	PREFIX	VALUE	SUFFIX
Service1	Number of waiting calls	Wait:	10	calls

This example has to be read as follows: "For the Service called Service1, there are 10 calls waiting". On your Alpha™ wall display, the information appears as follows:

Service1

Wait : 10calls

Note: *The prefix and the suffix in the example are the defaults. Prefixes and suffixes can be modified by the Service manager.*

2 Configuration window for an "Activox" type display:

- Set the following fields then click on ***[OK]*** .

Tableau 10.1

FIELD NAME	DESCRIPTION	OPTIONS AVAILABLE
Prefix and suffix color :	color of the prefix and suffix of the property value you have chosen to display	red, green, amber, Color Mix
Properties values colour:	color of the property value	red, green, amber, Color Mix
Services colour:	color of the Service name	red, green, amber, Color Mix
Switch to next property after:	refresh frequency	1, 2, 3, 4 or 5 seconds
Personal messages colour:	color of the personal message you want to display	red, green, amber, Color Mix
Automatic background colour:	the automatic background color displays the reverse color of the text color	Check this option if you want the automatic background color to be activated

Example of automatic background color:

Text1 green text on a red background and Text2 red text on a green background.

Example:

Table11:

SERVICE NAME	PROPERTY	PREFIX	VALUE	SUFFIX
Service1	Number of waiting calls	Wait:	10	calls

This example has to be read as follows: "For the Service called Service1, there are 10 calls waiting". On your Activox wall display, the information appears as follows:

Service1

Wait : 10calls

Note: *The prefix and the suffix in the example are the defaults. Prefixes and suffixes can be modified by the Service manager.*

U-630 : STATUS MENU: DISPLAY

OBJECTIVE

- To manage the real-time display of information (statuses) about your Services in the M5000 CC Wall Display general application window.

OPERATOR LEVEL

- Administrator or service manager, or team supervisor or manager.

TOOL(S)

- PC where the M5000 CC Wall Display application is installed.

PRELIMINARY OPERATION(S)

- Commission the M5000 CC Wall Display application (see Sheet C-600).

PROCEDURE

To display in real-time the information (statuses) that relate to your Services:

- Select the **[View]** command in the M5000 CC Wall Display application's **[Status]** menu.
- Right click on the ***{No Service}*** field that appears (under the **[File]** menu then Select the relevant Service from those proposed. a status bar for this Service appears under the menu bar.

U-700 : USING THE USER ACTIVEX CONTROL INTERFACE

OBJECTIVE

- General use of the User ActiveX Control interface toolbar
  - Toolbar (see step **1** in this sheet),
  - Modification of the properties (see step **2** in this sheet),
  - Use of the complete M5000 CC User API interface is accessible via the "UserActiveXControl.Session" object (see step **3** in this sheet).

OPERATOR LEVEL

- Agent for the installation or integrator for the installation of the ActiveW Control.

TOOL(S)

- PC where the Client application or User ActiveX Control installation are installed.

PRELIMINARY OPERATION(S)

- Refer to the customer application help (e.g.: AccessExcel, Access, etc.) to install, declare and activate the User ActiveX Control interface.

PROCEDURE

1 Description of the User ActiveX Control interface toolbar

From an operator point of view, the User ActiveX Control interface is presented as a toolbar that contains buttons with different functionalities for the M5000 CC User application (from left to right in the Figure 8.15):

Figure 10.79 USER ACTIVEX CONTROL INTERFACE TOOLBAR

- ***[Log in]***
- ***[Logout]***
- ***[Ready]***
- ***[Not Ready]***
- [PCP],
- ***[Off Hook]***,
- ***[On Hook]***,
- ***[Hold]***:
- ***[Pick Up]***,
- ***[Transfer]***
- ***[Make private call]***,
- ***[Make outbound call]***,
- ***[Make outbound professional call]***
- ***[Statuses of the day]***.

2 Modifying the properties

The control "TransferToExtension" property produces the same behavior as the ActiveX Control Transfer button, if the value of this property is "True" the default transfer to an extension to be defined during the execution is used, if it is "False" the transfer is made to a member of the Service. The member of the Service is selected by the system.

All the control properties may be modified on creation by right clicking on the control to access the following tabs in the **"Property pages"** window:

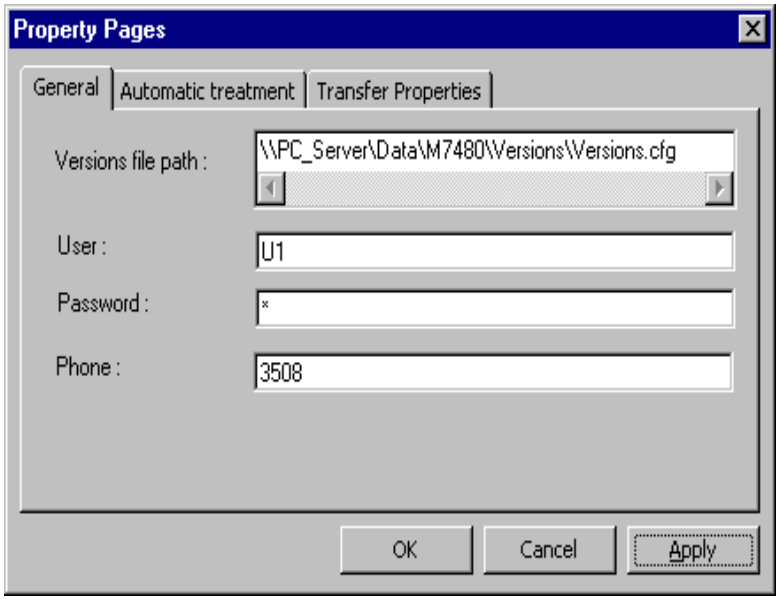


Figure 10.80 "GENERAL" TAB IN THE "PROPERTY PAGES" WINDOW

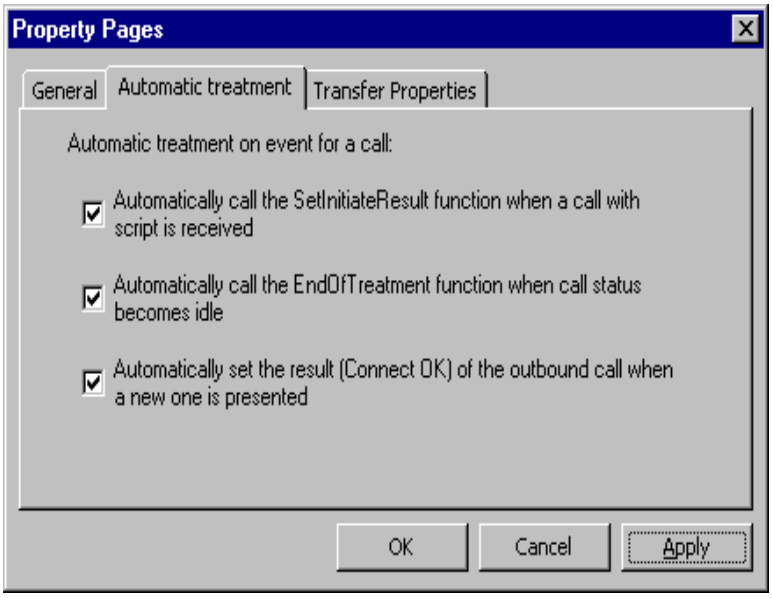


Figure 10.81 "AUTOMATIC TREATMENT" TAB IN THE "PROPERTY PAGES" WINDOW

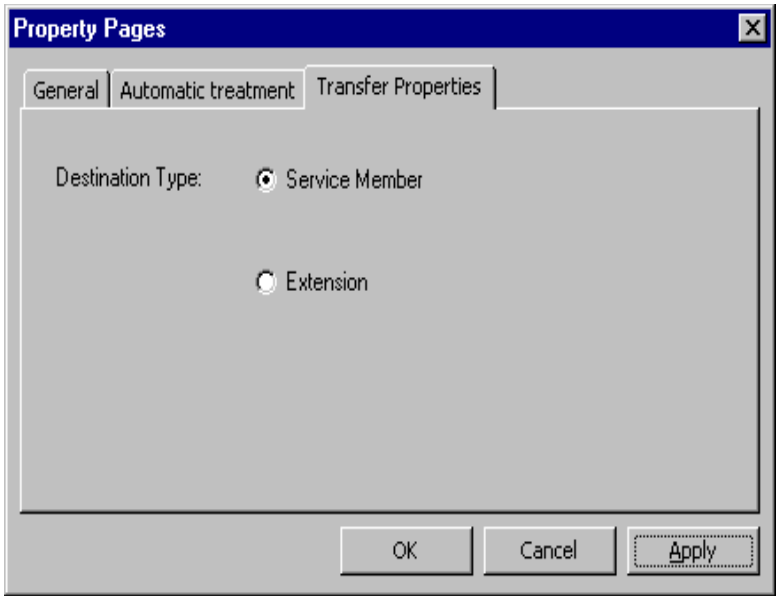


Figure 10.82 "TRANSFER PROPERTIES" TAB IN THE "PROPERTY PAGES" WINDOW

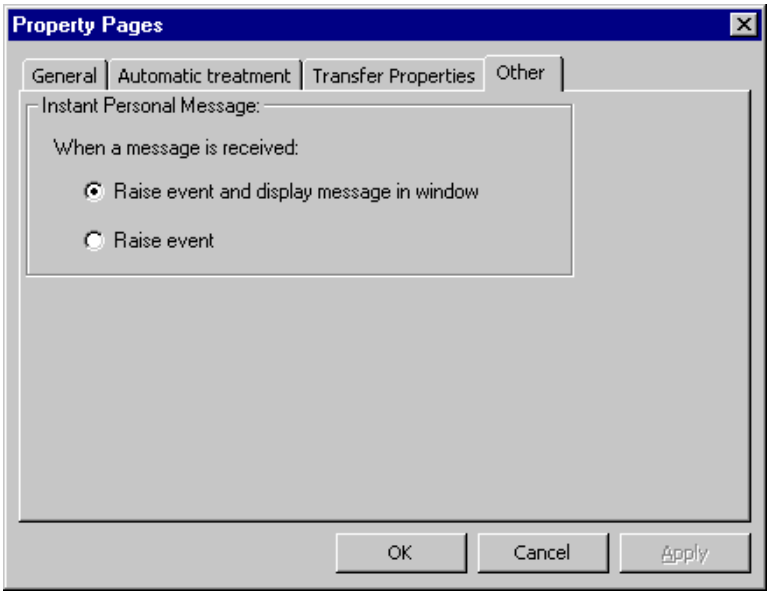


Figure 10.83 "OTHER" TAB IN THE "PROPERTY PAGES" WINDOW

These properties can also be modified at run time (before pressing the login button) by calling the UserActiveXControl.AssignProperties function or by modifying directly the desired property:

- "VersionFilePath" (string),
- UserId (string)
- UserPassword (string)
- PhoneId (string, empty string no phone is used)
- AutoSetInitiateResult (boolean)
- "AutoEndOfTreatment" (boolean expression)
- "AutoSetOutboundCallResult" (boolean expression),
- "TransferToExtension" (boolean expression).

When pressing the login button, if no session is present, a new one is initialized with the control properties (VersionFilePath, UserId, UserPassword, PhoneId).

When the agent is logged in with a phone and when no call is present, the ***[Make private call]*** button is available.

When a new call arrives or when a new one is initialized, the different buttons (***[Off Hook]***, ***[Hang Up]***, ***[Hold]***, ***[Un Hold]***, ***[Transfer]***) become available.

When an outbound call is presented to the agent, the ***[Make Outbound Call]*** button flashes to alert the agent.

3 The interface M5000 CC User API

The entire M5000 CC User API interface is accessible via the “UserActiveXControl.Session” object. The description of this interface is accessible in the chapter Advanced development appendices.

U-900 : GENERAL USE OF THE WEB PORTAL

OBJECTIVE

- Choosing the M5000 CC Portal display mode (see Step **1** in this sheet).
- Selecting the M5000 CC Portal options (see step **2** in this sheet) used to:
  - choose the language used
  - Configure the behaviour of the "Script and CRM" function.
  - Configure alarm signals
  - Configure the histogram and pie chart colours
  - personalise the appearance of the frames that make up M5000 CC Portal
  - indicate the phone number to use to process calls.

OPERATOR LEVEL

- Any user belonging to a Windows security group defined by the administrator

TOOL(S)

- PC running with Internet Explorer 6.0, for access to the M5000 CC Portal site.

PRELIMINARY OPERATION(S)

- Start the M5000 CC Portal (see Sheet C-900).

PROCEDURE

1 Choose the display mode of the M5000 CC Portal

- Click the tool area minimise button  to change the portal to “minimise” mode.
- Click the tool area expand button  to return the portal to “normal” mode.

Note: *These changes can be made at any moment after starting the portal.*

2 Select the options of the M5000 CC Portal

- Click the **[Portal options]** menu (shortcut: Ctrl+K).
- Define the parameters proposed by the **"Portal options"** window:

u ***{Language}***:
This option is used to choose the language in which to display all the labels appearing on the portal: text, buttons, pop-ups, etc. The list contains all the languages supported by the portal.
The language chosen is used after the portal is restarted.

u ***{Skin}***:
This option is used to select the skin with which the portal is presented. The list contains all the skins supported by the portal and gives an overview of the selected skin.
The selected skin is used after the portal is restarted.

u ***{Script and CRM Cards}***
Two checkboxes are available, which give two different behaviours:

- ***[Show script and CRM cards as an application]***: the "Script and CRM" function is available as a portal application. It is started, from the left panel, in one of the portal's configurable frames. The script or CRM record of the active call is visible during the entire call processing period; other scripts or CRM records remain open but hidden.

Note: *if you tick this option, the "Script and CRM" function is also available on the list of applications to be started by default when the portal is started (see the section **{Default applications}** below on this same page).*

- ***[Show each script and card in a separate window]***: The "Script and CRM" function no longer appears on the left panel of the portal window. The scripts or CRM records are opened automatically in a new window when a call arrives or when a call/e-mail is selected from the **{Calls and e-mails}** list. Each script or CRM record is opened in a separate window so you can see different records without having to change from one call to the other.

Note: *the size of the new "Script and CRM" windows is saved in the preferences (but not their position).*

u ***{Layout}***:

This option is used to fix the number of frames (configurable frames) appearing under the portal "Click & dial" frame on start-up. This list contains all the possible layouts and gives an overview of the selected layout.

The selected layout does not affect the current organisation of the portal: it is applied after restarting the portal.

Keyboard shortcuts for quick access to the different frames

- Shift+F1 to Shift+F10: access to applications opened in the lower frame (the key number represents the position of the application in the left main menu).
- Shift+F11: access to the upper left frame.
- Shift+F12: access to the upper right frame.
- Ctrl+Shift+J: restores all frames (cascade).
- Ctrl+TAB: switches successively from one application to the other.
- Ctrl+Shift+TAB: switches successively from one application to another, in the opposite direction.

u ***{Default applications}***:

Some of the web applications available to the user can be selected to be restarted automatically when the portal starts. This option is used to assign an application to each visible frame at start-up.

The ***{Layout}*** option determines the number of visible frames and, thus, the number of applications selected through the ***{Default applications}*** option.

u ***{Phone number}***:

For a Contact Centre agent (who may use a public phone), this option is used to specify:

- Whether a particular phone number must always be used when the portal is started
- Whether this number must systematically be required from the user
- Whether this phone number should not be used at portal start.

In this latter case, or if the particular number chosen by the agent is empty, the "Click & dial" application (see Sheet U-910) is not started automatically. It may be started later by the user.

For any other user type (non-agent), this option is only used to specify:

- Whether the phone number defined in Active Directory must be used when the portal is started, or
- Whether no phone number should be used at portal start.

u **{Main page focus level}**:

When a voice call arrives or when the portal interface is refreshed, this option is used to specify whether the focus must be given to the main window in which this portal is running. For information, activating this focus allows you, in particular, to maximise this window if it had been minimised when the call arrived.

Three options are offered to the client:

- The focus is given, no matter the type of voice call received (professional or private call).
- The focus is only given for notification about a professional call (no focus for a private call).
- The focus is never given, no matter the type of call.

Note: In order to work with Firefox, you have to authorise it by activating the corresponding security option in the browser:

*- In the **[Options]** menu, select **[Content]** panel*

*- Check **"Raise or lower windows"** in **[Advanced JavaScript Settings]***

u ***{Audible alarm signal}***

"Audible alarm signals" concern **" Supervision "** and **"Agent supervision"** applications.

In the **"Supervision"** and **"Agent supervision"** applications, the portal will receive the instruction to set off an audible alarm when a display property status changes to **"Alarm"** (moreover, for the **"Supervision "** application, the **"Alarm display"** function must be enabled).

There are two options in the **{ Alarm }** frame:

- ***[Ignore beep signals]***: Tick this first option if you do not wish to hear any audible alarm signal.

-***[Minimum interval between beep signals]***: This second option is only available when the first one is not ticked. It is used to specify a minimum interval (in seconds) between two audible alarm signals.

u ***{Flashing Highlight}***

Give possibility to configure flashing for incoming voice call.

- ***[Disable flashing highlight]*** : tick this checkbox will disable flashing for incoming calls, calls will be permanently highlighted.

- ***[Flashing speed]*** *: t*his option will be configurable only if the precedent is not checked. This give possibility to configure the highlight speed; 1= slowest, 4= fastest (by défaut speed is set to fastest).

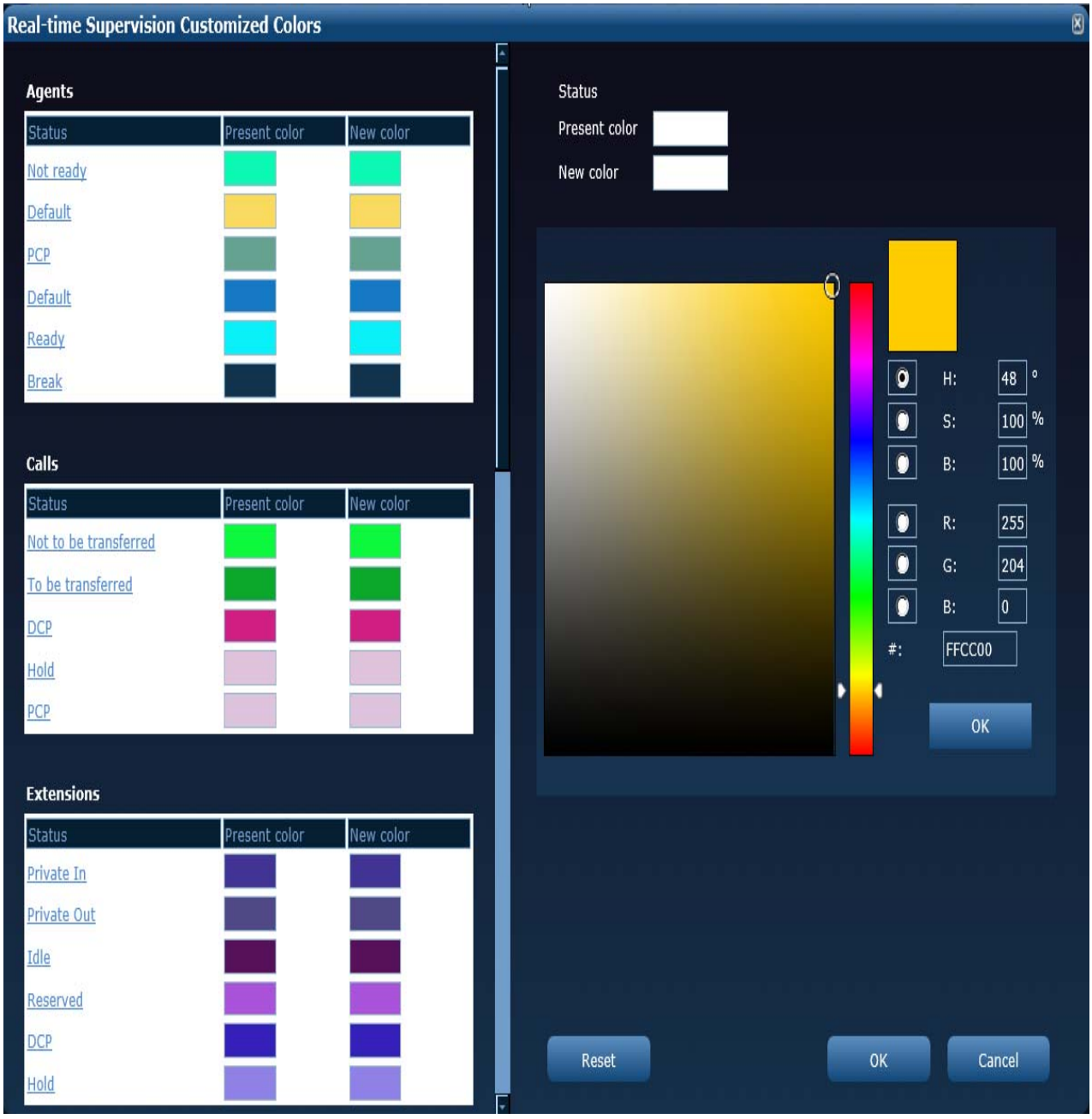
u ***{Colours for real-time supervision}***:

This option is used to customise the colours of the pie charts and histograms used in **"Real-time supervision"**. Click the ***[Customise…]*** link to open the **"Customised colours for real-time supervision"** window.

The **"Customised colours for real-time supervision"** window contains:

- in the left part, a list of the statuses available for colour customisation
- in the right part, a colour selector.

Figure 10.84 COLOUR CUSTOMISATION



The list of statuses, grouped by section (agent, call, etc.), comprises the following columns:

-***{Status}***: name of statuses

-***{Current colour}*** : currently selected colours

-***{New colour}***: new colour, which is identical to the ***{Current colour}*** so long as there is no change.

Remark: there can be between 2 and 24 different statuses in the agent section (depending on the configuration made by the administrator).

- To customise the colour of a status:
  - Click the status whose colour you wish to change on the list of statuses (the colour selector will automatically go to the current colour of the status).
  - Move the vertical cursor " " to choose the colour you want.
  - Refine the colour by moving the “O” pointer.

It is also possible to choose a new colour by entering directly the values H, S, B and R, G, B and # which are respectively:

- ***[H]*** Shade: 0 to 359
- ***[S]*** Saturation: 0 to 100 (%)
- ***[B]*** Brightness: 0 to 100 (%)
- ***[R]*** Red: 0 to 255
- ***[G]*** Green: 0 to 255
- ***[B]*** Blue: 0 to 255
- ***[#]*** : 000000 to FFFFFF (hexadecimal value of which 000000 corresponds to black and FFFFFF to white)

When you finish choosing the colour, click the ***[OK]*** button located just under the ***[#]*** option, to confirm your choice. This action will update the colour chosen in the **{new colour}** column of the statuses.

Note: *at this stage, the new colour is not yet saved.*

- To save the new colours in your bookmarks as the colour for the supervision application: click the ***[Validate]*** button located at the bottom of the **"Customised colours for real-time supervision"** window. This will be closed automatically.
- To restore all the default colour settings made by Mitel, press the ***[Reset]*** button. All your previously defined colours will be lost. The **"Customised colours for real-time supervision"** window will be closed automatically.
- To cancel the current modifications, click ***[Cancel]*** for close the **"Customised colours for real-time supervision"** window without saving the current modifications.

u ***{Browser configurator}***:

To work correctly, the browser in which M5000 CC Portal is run must, in some cases, set up several connections at the same time to the web server hosting the M5000 CC Web Service. By default, Internet Explorer authorises a maximum of two simultaneous requests to the same web server.

When the portal is first started by a user, a Java applet tries to modify the configuration automatically. This results in the display of the message “Configuring the browser”. If this mechanism fails to work, the tool "ConnectionIEManager.exe" can be downloaded from this area to perform this configuration.

- Click **[Validate]** to back up the modified parameters, or **[Cancel]** to exit the **"Portal options"** window without making any changes.

Note: *The modifications made in the portal options are taken into account, after exiting Internet Explorer and after reconnecting to the portal.*

COMMENTS

- **Unexpected portal replacement with another web page**

When a web page is displayed from an external application or web shortcut, the portal may be replaced by this page.

This happens only if Internet Explorer is defined as default portal.

To avoid this behaviour, open the Internet Explorer options, either from:

- ***Start > Control panel > Internet options***, or from
- ***Internet Explorer > Options***,

and deactivate the option ***{Reuse the windows to start shortcuts}***.

- **Impossible to move the portal window**

When the browser window containing the portal is maximised (in the Windows sense), it is no longer possible to move it after a sequence of the following actions:

- Moving the browser window

This is due to the fact that the Windows window containing the portal is still maximised then. The operating system then prevents this window from being moved.

To restore the movement, restore the browser window, for instance, by clicking the “Lower level” window  on the Windows title bar, or by double-clicking the title bar. The window can then be moved again.

U-910 : USING THE WEB APPLICATION CLICK & DIAL

OBJECTIVE

- Making and controlling calls using the Click & dial web application.

OPERATOR LEVEL

- Any user belonging to a Windows security group defined by the administrator

TOOL(S)

- PC running with Internet Explorer 6.0, for access to the M5000 CC Portal site.

PRELIMINARY OPERATION(S)

- Start the M5000 CC Portal (see Sheet C-900).

PROCEDURE

The "Click & dial" application always appears in the portal tools area (upper right frame) (example Figure 10.85).

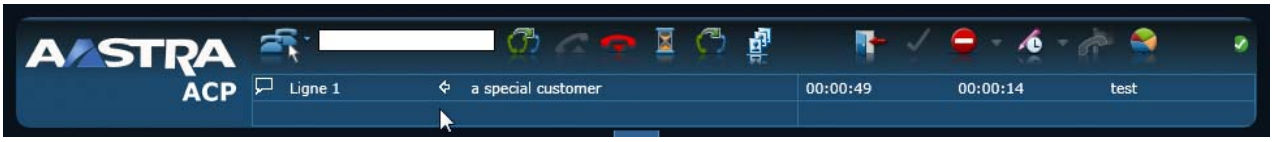


Figure 10.85 "CLICK & DIAL" APPLICATION TOOLBAR

The "Click & dial" application toolbar enables the user to carry out different call control operations. The buttons and text boxes available in this toolbar depend on the context, and are used to:

- Either initiate a new call if no call is in progress
- Or act on the call in progress.

Each time the on-going call status is changed and when it disappears, the toolbar is modified automatically to display only the operations available in the new context.

The “Click & dial” application preview area shows a summary of information about the call in progress. This area also shows the simple and/or enquiry call status.

If the user has access to the directories, he or she can view, in the directory application, the detailed record of the different correspondents by clicking their name in the preview area.

The first line in the left part of this area displays information about the first correspondent. The information possibly displayed in italics and in brackets concerns the correspondents whose unanswered calls were returned or correspondents that have diverted their extension to the user’s extension.

The second line in this left part displays information about the second correspondent (making a consultation call or conference call).

The right part of these lines may contain three global variable information that may be associated with an incoming call (this feature is only available for incoming calls and e-mails; outgoing calls do not use the available variables). These three fields may contain some links such as e-mail address, URL or network path. This information will appear in form of a clickable link.

Given the potential length of this information, the links will be displayed in a simplified form, for example:

http://www.google.be/ig?hl=fr will become www.google.be

\\NomHote\AFS\Version10.1\Services\TechnicalSupport\M7480Routing.mdb will become M7480Routing.mdb

\\NomHote\AFS\Version 10.1\Services\Technical Support\ will become Technical Support

It is, however, possible to see the full value of the information in the browser status bar.

Special characteristics of an incoming call

When a new incoming call is presented, the portal is automatically placed in the background and restored if it had been minimised (provided the focus level of the main page had been correctly selected in the portal options and that the operating system allows this: otherwise, the browser icon blinks in the task bar).

To take the call, the user may either:

- Click the **Off-hook button**  , if the line on which the call is presented is selected.
- Click the new incoming call alert window
- Click the line corresponding to the call on the call and e-mail list
- Or press **<Enter>>**, if the line on which the call is presented is selected.

Special characteristics of an outgoing or consultation call

To specify the destination of a new outgoing call or consultation call, several methods are available.

- Enter the number in the text box (shortcut: Ctrl+Start) using the keyboard, then press **<Enter>** or click the **Call destination**  or **Initiate a consultation call button**  .
- Use the mouse to drag a number (from the text displayed in any application: word processing, another website, etc.) to the text box, then modify it, if possible, using the keyboard then press **<Enter>** or click the **Call destination**  button.
- Drag a number directly to the **Call destination**  button: in this case, the number is dialled directly (with modification possibility), thus allowing a quick use: " Click & dial ".
- If the user has access to the directories, the following three methods can also be applied using the surname, first name or destination company instead of its number (depending on directory and the search criteria selected in the directory application).

Description of the buttons in the toolbar

Depending on the status of the call in progress, the buttons in the toolbar are used to carry out the following operations:

Tableau 10.1 DESCRIPTION OF THE BUTTONS IN THE CLICK & DIAL APPLICATION TOOLBAR

Buttons	Name	Description (+ KEYBOARD SHORTCUT)
	**Select a line**	This button is used to select one of the lines available on the user terminal. (F1 to F5)
	**Off-hook**	This button is used to take a call. (F1 to F5)
	**Call destination**	This button is used to call a destination. (Return)
	**On-hook**	This button is used to end a call. (F12)
	**Put call on hold**	This button is used to put a call on hold. (F7)
	**Resume call**	This button is used to resume a call on hold. (F7)
	**Make enquiry call**	This button is used to make a consultation call (enquiry call) (Return)

Tableau 10.1 DESCRIPTION OF THE BUTTONS IN THE CLICK & DIAL APPLICATION TOOLBAR

	**End enquiry call (resume)**	This button is used to end an enquiry call. (F6)
	**Alternate two calls**	This button is used to alternate between the main call and enquiry call. (F10)
	**Transfer call**	This button is used to transfer a call to the party for whom the current enquiry call is intended or to blind transfer the call to a destination previously entered in the text box. (F8)
	**Set up conference**	This button is used to set up a conference with the enquiry call in progress. (F11)

COMMENTS

The "Click & dial" application is accessible to users for whom a valid phone number (supervisable by the system) is defined in Active Directory.

If a user without phone number connects via the portal, the tool area is displayed, but call control is not possible.

U-920 : USING THE WEB CALLS AND E-MAIL APPLICATION

OBJECTIVE

- Enabling the agent to manage:
  - Professional phone calls (handled within the Mitel 5000 Contact Center context)
  - Professional e-mails
  - Private phone calls
  - Using and defining the behaviour of scripts and CRM records for professional calls and e-mails.

OPERATOR LEVEL

- Agent

TOOL(S)

- PC running with Internet Explorer 6.0, for access to the M5000 CC Portal site.

PRELIMINARY OPERATION(S)

- Start the M5000 CC Portal (see Sheet C-900).

PROCEDURE

The "Calls and e-mails" application starts in one of the configurable frames (see Sheet U-900) on the portal.

It contains a list of calls and e-mails and affects the Click & dial application toolbar.

The application can presents the calls under two different forms depending the Administrator has define Calls & E-mails section or not.

The first form is illustrated by Figure 10.86 and is use when no Calls & E-mails section is defined or when the user has no the right to use it

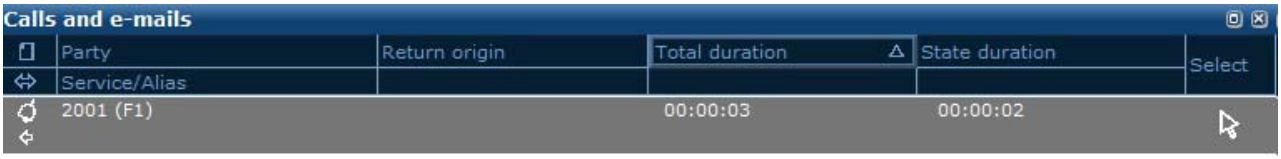


Figure 10.86 "CALLS AND E-MAILS APPLICATION FRAME WITHOUT SECTION

The second form is illustrated by Figure 10.87 and is used when Calls & E-mails sections are defined and when user has the right to use it.

Figure 10.87 CALLS AND E-MAILS APPLICATION FRAME WITH SECTIONS

1 List of calls and e-mails without section

When no calls & e-mails sections are displayed, all the agent's voice calls and mails (e-mails, fax and SMS) appear on the list. Each of them is displayed in two data lines, corresponding to the list header.

When there are several items on the list, they can be sorted by clicking on the headers. Two successive clicks on the same header changes the sorting order (ascending or descending order).

By clicking on an item on the list, the user selects the corresponding call or e-mail. In this case:

- The Click & dial application toolbar is modified to allow the actions available on the selected item.
- If the selected item is a voice call, the call is resumed and the "Click & dial" application preview area also displays the call data.
- If the selected item is a voice call waiting in the pool , the call is transferred to the agent phone and automatically answered

If the list is empty when a new call or mail is presented to the agent, it is automatically selected on the list.

When you select one of the free lines available on the user's terminal, the "Click & dial" application toolbar displays the text area and the button used to initiate a new, outgoing (private) call. This allows you, among other things, to make a call while processing an mail.

2 List of calls and e-mails with Calls & E-mails section

When the administrator defines calls & E-mails section, the application displays several section under which the calls and mails (e-mails, fax and SMS) will be displayed. Every section contains a section title bar and some section contains also a section content area where calls and mails can be displayed (depending on their type). Indeed, three different sections can be displayed:

- An open section: when a call or mail is presented on an open section, it appears under the section title bar in the section content area. For an open section, the section content area is always visible.
- A closed section: in closed section, the section content is always hidden and only the section title bar is displayed.
- A free section: this section combines the open and closed section mode: it allow the user to open the section (show the section content area) by pressing the button or to close the section (hide the section content area) by pressing the button

Among the different section, one section is defined as the default section where alls calls and mails that the user manage are displayed. Furthermore, alls calls that are distributed by the M5000 CC Server using the push mechanism will be displayed in this section. This section is always an open section.

The other sections will allow to present calls that are distributed using the pool distribution mechanism and mails until there are open by a user.

When calls and mails are displayed in section content area, there are displayed on a single line.

The section title bar displays the section title and the number of calls displayed in the section. By clicking on the section bar, the agent has the possibilities to pick up a waiting call or open a waiting mail. These rules apply for selecting the call or mail that will by be pick up (opened):

- Professional calls that are pushed (i.e. their state are ringing) are selected first (only for default section)
- Calls waiting in pool are then selected
- E-mails waiting in pool are then selected
- Private ringing calls.

Then, if several calls or mails can be selected, the call (mail) the most priority call is selected first and then the longest waiting call (mail).

The title bar contains also a command allowing to mute/unmute the sound associated to the section. This sound is played when there is a section call waiting in pool. When several sound can be played, the portal plays the sound of the section containing the call having the highest priority

Finally, calls and mails displayed in section content area are manipulated like calls and mails displayed in calls and E-mails application when no sections are defined (see 1).

3 Incoming professional calls

The basic phone call operations (see Sheet U-910) are also possible for professional phone calls.

Moreover, the following operations are available on the Click & dial toolbar:

- Conversation recording
- Selection of an agent to make a transfer or conference between agents. This operation opens a list of agents, indicating the status of each agent (connected, ready, without call in progress on his or her extension number). Only one idle agent may be selected from this list.

4 Outgoing professional calls

When an outgoing call is presented to the agent in an Mitel 5000 Contact Center service, the destination is not contacted immediately. In fact, the agent chooses the time he or she wishes to make the phone call.

Once the call is presented, the preview area displays the corresponding data, including the name of the person to call.

Two operations (in addition to phone call control operations) are specific to outgoing professional calls:

- Call to destination: this operation differs from the one about a private call: for a professional call, the destination is not specified by the user but by the system (when the call is defined on the list of outgoing calls).
- Outbound call result: the button for this operation opens a sheet allowing the agent to indicate the call result.

The different results that can be selected by the agent are:

- Success: the right person has been contacted.
- Wrong number: the phone number is incorrect (not assigned, etc.).
- Cancelled definitely: the call has been cancelled by the agent. This result may be chosen even before making the phone call or without making it.
- Answered by another person: the person that answered the call is not the called party.
- Postponed: the call has been postponed.

In both cases, the agent must specify whether the system will choose the date and time for the new attempt, or whether he or she will indicate it him/herself (through a timeout in days, hours and minutes, or through a specific date and time). For a report, the agent may also modify the number to dial and the name of the contact person. This result may also be selected before making the phone call or without making it.

The agent must specify the result for any outgoing call. When an outgoing call is made, it only disappears from the list after the agent has assigned a result to it.

5 Professional mails

The presentation of professional mails (e mails, fax and SMS) in the “Calls and e-mails” application is based on pool principle: mails are presented to all the agents that meet the criteria required by mail distribution. The same mail may then appear on the list of several agents.

When one of the agents opens an mail, this mail disappears from the list of all the other agents.

The operations available on a professional mail are:

- Open mail: the message appears in a new window containing a toolbar (replica of the "Click & dial" application toolbar).
- Reply: a new window opens so the agent can write a message in response to the mail received. The recipient's address is automatically pre-filled using the initial sender address. A specific window is displayed for SMS. In this window, the number of SMS sent is displayed
- Reply to all: a new window opens so the agent can write a message in response to the mail received. The recipient area is pre-filled automatically with the sender address and the list of the recipient addresses in the initial message (including those copied). This operation is not available for SMS as there is only the SMS sender
- Forward: a new window opens, allowing you to forward the message received. The content of the message is pre-filled automatically with the content of the initial message. A specific window is displayed for SMS. In this window, the number of SMS sent is displayed
- Delete: the mail is deleted from the mailbox on the mail server (Exchange). However, the mail continues to be processed, and all the other operations remain available (for example: reply).
- Finish: the agent finishes processing the message. This operation closes all the e-mail related windows and exits the "Calls and e-mails" application.

6 Private calls

The "Calls and e-mails" application not only displays professional phone calls and e-mails (Contact centre), but also the agent's private phone calls. These latter also appear on the list and preview area.

When you select one of the free lines available on the user's terminal, the "Click & dial" application toolbar displays the items (text area and the button) used to initiate a new, outgoing private call. Therefore, it is possible for the agent to make a private call at any time, so long as a line is free.

7 Script and CRM Card

The purpose of the "Scripts and CRM cards" function is to display the agent script or CRM record for an (incoming/outgoing) phone call or professional e-mail. This function may be integrated into the portal window, or launched from external windows (U-900).

- **Launching the application:**
  - u If the option ***[Show script and CRM cards as an application]*** has been chosen, a ***[Script and CRM]*** button appears on the portal's left panel; just click this button to start the application in one of the portal frames. It is, of course, necessary to keep the application frame open in the portal window so as to be able to use this function.

    Note: *Remark: if you have just chosen this option, you have to restart the portal so the **[Script and CRM]** button becomes visible.*

  - u If the option ***[Show each script and card in a separate window]*** has been chosen, no change is made in the portal interface, and it is not necessary to start the "Script and CRM" application manually. The agent scripts and CRM records are automatically displayed in new windows when an incoming or outgoing professional phone call is made, just like when you open a professional e-mail.
- **Closing a script or CRM card**

  The "Script and CRM" application toolbar has a ***[Close]*** button for closing the record. If the application is configured as an external window, this button closes the entire window.
- **Reopening a closed script or CRM card**

  It is possible to reopen a CRM record for a call/e-mail (by clicking it on the list), on two conditions:
  - The call is still active.
  - The administrator has configured the CRM record reopening function.
- **Changing from one script or CRM record to the other**

  For scripts and CRM records in an external window, just change from one window to the other. For scripts and CRM cards integrated into the portal, just change from one call/e-mail to the other (by clicking the **{calls & e-mails}** list) so the corresponding script or CRM record becomes visible. (For more information, see **"calls & e-mails"** (see Sheet U-900)
- **Duration of an agent script or CRM record**

  The script or CRM record for a call remains open until it is closed intentionally (with the ***[Close]*** button). This means that the script or CRM card is not closed automatically at the end of a physical call; as long as the script or card is not closed, the logical call corresponding to the physical call will remain on the **{calls and e-mails}** list.

For more information about outgoing professional calls, please see Section *Outgoing professional calls*of Sheet : Using the Web Calls and e-mail application

U-930 : USING THE REAL-TIME WEB SUPERVISION APPLICATION

OBJECTIVE

- Configuring the display properties
- Viewing the real-time status data about the various Mitel 5000 Contact Center services and filters (and servers)
- Display the alarms configured for the display properties

OPERATOR LEVEL

- Service Manager, Team manager, Team Supervisor or Agent
- Service manager for configuring display properties

TOOL(S)

- PC running with Internet Explorer 6.0, for access to the M5000 CC Portal site.

PRELIMINARY OPERATION(S)

- Start the M5000 CC Portal (see Sheet C-900).

PROCEDURE

The "Supervision" application starts in one of the configurable frames (see Sheet U-900) on the portal.

Note: If another user is already connected to a portal instance, the supervision application may not be available even if the user has sufficient rights to use it.

Note: It's possible to force activation of " supervision " application in second instance of the portal by setting value of key "SecondPortalSupervisionEnabled" to "True" in the "web.config" file of the webservice (section <appSettings>) (the "web.config" file is by default in folder "C:\Program Files\M5000 CC\Portal\WebService").

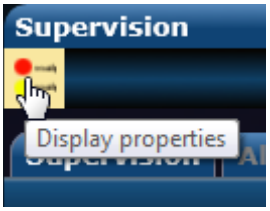
1 DISPLAY PROPERTIES CONFIGURATION

- **Open the "Display properties" window of the "Supervision" application.**

To open the **"Display properties"** window:

u Click the **[Display properties]**  button located in the **"Supervision"** application toolbar.

Figure 10.88 "DISPLAY PROPERTIES" BUTTON IN THE SUPERVISION APPLICATION TOOLBAR.



- **View the display information for the different services managed.**

Figure 10.89 "DISPLAY PROPERTIES" – SERVICE AND FILTER SELECTION FRAME.

To view the display information for the different services:

u Choose a service and/or filter for which the statuses must be displayed (in the corresponding drop-down menus), then press the ***[Display]*** button in frame 1 **{Select service and filter}**.

u Choose the display property in the display property list in frame 2 **{Select display property}**.

- **Modify the information about a display property.**

  When a display property is chosen from the list of display properties (frame 2), information about this property is loaded in the right part of the **"Display properties"** window.

  - If necessary, enter the ***{Prefix}*** and/or ***{Suffix}*** which will appear in the application in frame 3 **{Configure the selected display property}**.
  - In the **"General options"** frame of each of the **{Service manager}**, **{User}** and **{Wall display}** tabs, tick the application checkbox to activate the display properties for it. When the application checkbox (**"Service manager"**, **" User"** or **"Wall display"**) is ticked, the **"Threshold"** options may be modified.
  - In the **{Threshold}** frame of each of the **{Service Manager}**, **{User}** and **[Wall Display]** tabs, configure the following parameters:
    - The ***[Ascending]*** or ***[Descending]*** option is used to configure the condition for activating the different thresholds:
      - ***[Ascending]*** - the activation condition is fulfilled when the value of the variable is equal to or above the value of the threshold defined (Value >= Threshold).
      - ***[Descending]*** - the activation condition is fulfilled when the value of the variable is equal to or below the value of the threshold defined (Value <= Threshold).
    - Tick the ***[Relative to another display property]*** checkbox if the alarm activation threshold is a value relative to another property. In this case, select the relative property in the drop-down menu located just below. When this option is activated, the threshold conditions become:
      - ***[Ascending]***: (Value/Relative value) * 100 >= Threshold
      - ***[Descending]***: (Value/Relative value) * 100 <= Threshold
    - Tick the ***[Display threshold]*** checkbox if you want the system to display the values of the property selected in the status bar of the application concerned (**"Service manager"**, **"User"** and **"Wall display"**) when the value of the threshold entered in the field ***{Display if value is equal to or above}*** is exceeded. The field ***{Display if value is equal to or above}*** must be filled in if the ***[Display threshold]*** checkbox is ticked.
    - Tick the ***[Warning threshold]*** checkbox if you want the system to activate an orange indicator lamp beside the values of the property selected in the status bar of the application (**"Service manager"**, **"User"** and **"Wall display"**) when the value of the threshold entered in the field ***{Warn if value is equal to or above}*** is exceeded. The field ***{Warn if value is equal to or above}*** must be filled in if the ***[Warning threshold]*** checkbox is ticked.
    - Tick the ***[Alarm activation threshold]*** checkbox if you want the system to display the value of the property selected as well as a red indicator light in the status bar of the application (**"Service manager"**, **"User"** and **"Wall display"**), and that an audible alarm be set off when the value of the threshold entered in the field ***{Activate alarm if value is equal to or above}*** is exceeded. Moreover, the different diagrams in the **"Service Manager"** application start to blink (agent statuses, called party statuses, extension statuses, e-mail statuses, web session statuses, etc.). The field **{Warn if value is equal to or above}** must be filled in if the ***[Warning threshold]*** checkbox is ticked.
    - Tick the checkbox ***[Beep activated for alarm]*** if you want a beep to be activated (by the PC sound card or directly by a system sound) when an alarm is sent.
      - If you are using an **"AlphaTM"** wall display, this option will send an audible alarm when the information displayed turns red.
      - If you are using an **" Activox "** wall display, this option will make the information displayed to blink when it turns red (but does not produce any beep signal).
  - Click ***[Validate]*** when you finish.

Remark: if you have made some modifications on this page and you want to load a new page (choose another service and/or another filter, then click [Display]), a confirmation window opens with three options:

[Apply]: saves the modifications and loads the selected new preferences (service/filter)

[Abandon]: does not save any changes made on the page and loads the selected new preferences (service/filter).

[Cancel]: does not save any changes made on the page and does not load the selected new preferences (service/filter); remains on the current page.

"Display properties" confirmation window

2 SUPERVISION

This tab is made up of a menu for selecting “real-time status suppliers” and a list that displays the real-time status data of each of these “suppliers” (example Figure 10.90).

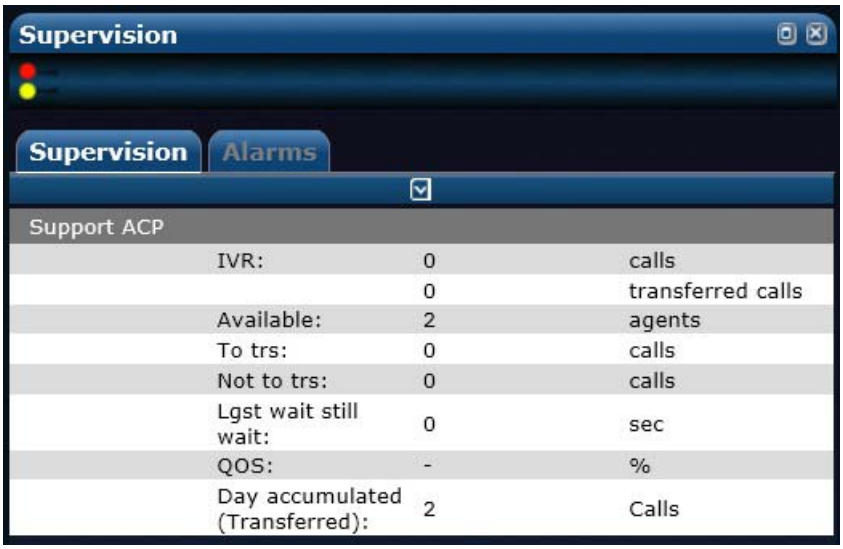


Figure 10.90 "SUPERVISION APPLICATION FRAME

Each agent can have access to the real-time [server, service, filter] supervision data. These three items are called “real-time status providers”.

The “Supervision” application enables the agent to choose one or more of these “providers” from a list proposed to him/her.

When one of these providers is selected, a section appears in this application, displaying all the display properties specified by the service or team manager. At that moment, the corresponding data is displayed and refreshed in real time.

The agent may unselect any of the suppliers at any time: the corresponding section then disappears from the application (and the data no longer arrive on the portal).

If a “real-time status provider” is no longer available to the agent (for example if this agent is no longer assigned to the corresponding service), the corresponding service disappears automatically from the application.

If the display properties of a displayed “supplier” are added or deleted by the manager, the corresponding section is automatically updated in the portal's web application.

Note: The "Supervision" application is accessible to agents, that is to the agents assigned to an Mitel 5000 Contact Center service. Even if the user is equally a service or team manager, only the data meant for agents is displayed by this application.

3 ALARMS

- Click the **{Alarm}** tab in the **" Supervision "** application window.
- Click ***[Start tracking]***.

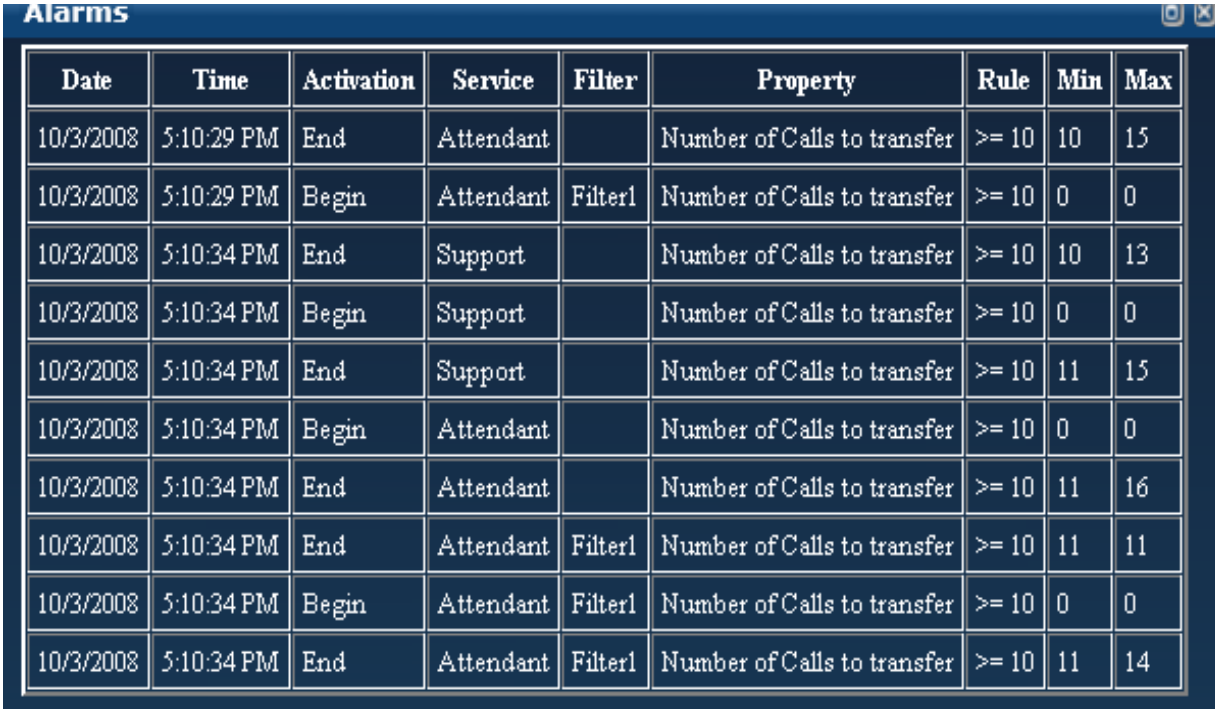
Figure 10.91 "ALARM" DISPLAY.

Note: the maximum number of items on the list is 100. If there are more items on the list, the oldest ones will disappear from the list in favour of the most recent ones.

- Description of the **{Alarm}** tab
  - Alarm tab toolbar
    - ***[Start tracking]*** button: displays information about the different alarms configured
    - ***[Stop tracking]*** button: stops adding new, configured alarms to the list
    - ***[Clear list]*** button: deletes all the items currently on the list
    - ***[Print]*** button: displays the existing alarm report
- Alarm list

  Here are the different pieces of information displayed for each item (see Figure 10.91).
    - ***{Date}*** and ***{Time}***: the date and time the information was added
    - ***{Activation}*** : Type of activation for this alarm (“Start” or “End”).
    - ***{Service}***: service to which the alarm applies
    - ***{Filter}*** : filter to which the alarm applies
    - ***{Property}*** : displays the property to which the alarm applies
    - ***{Rule}***: rule associated with this alarm (condition for activation)
    - ***{Min}***: minimum value obtained during the alarm activation period
    - ***{Max}***: maximum value obtained during the alarm activation period

Figure 10.92 "ALARM" REPORT.



Date	Time	Activation	Service	Filter	Property	Rule	Min	Max
10/3/2008	5:10:29 PM	End	Attendant		Number of Calls to transfer	>= 10	10	15
10/3/2008	5:10:29 PM	Begin	Attendant	Filter1	Number of Calls to transfer	>= 10	0	0
10/3/2008	5:10:34 PM	End	Support		Number of Calls to transfer	>= 10	10	13
10/3/2008	5:10:34 PM	Begin	Support		Number of Calls to transfer	>= 10	0	0
10/3/2008	5:10:34 PM	End	Support		Number of Calls to transfer	>= 10	11	15
10/3/2008	5:10:34 PM	Begin	Attendant		Number of Calls to transfer	>= 10	0	0
10/3/2008	5:10:34 PM	End	Attendant		Number of Calls to transfer	>= 10	11	16
10/3/2008	5:10:34 PM	End	Attendant	Filter1	Number of Calls to transfer	>= 10	11	11
10/3/2008	5:10:34 PM	Begin	Attendant	Filter1	Number of Calls to transfer	>= 10	0	0
10/3/2008	5:10:34 PM	End	Attendant	Filter1	Number of Calls to transfer	>= 10	11	14

U-935 : USING THE M5000 CC ANYWHERE APPLICATION

OBJECTIVE

- Viewing the real-time status data about the various Mitel 5000 Contact Center services and filters (and servers)

OPERATOR LEVEL

- Service Manager, Team manager, Team Supervisor or Agent

TOOL(S)

- PC running with Internet Explorer 9.0 or Firefox 7, for access to the M5000 CC Portal site.

PRELIMINARY OPERATION(S)

- Start the M5000 CC Portal (see Sheet C-900).

PROCEDURE

The "M5000 CC Anywhere" application starts in one of the configurable frames (see Sheet U-900) on the portal or in a new window.

Another way to start this application is to use directly the URL for access to the M5000 CC Portal site followed by Anywhere.

- http://<M5000 CC_SERVER>/<Portal_Name>/Anywhere

This application uses windows authentication. So, depending the browser used (and platform), an authentication window may ask you to enter some security parameters. These are valid during all the session of the navigator.

Note: If another user is already connected to a portal instance, the supervision application may not be available even if the user has sufficient rights to use it.

Note: It's possible to force activation of " supervision " application in second instance of the portal by setting value of key "SecondPortalSupervisionEnabled" to "True" in the "web.config" file of the webservice (section <appSettings>) (the "web.config" file is by default in folder "C:\Program Files\M5000 CC\Portal\WebService").

1 Supervision

The supervision available in "M5000 CC Anywhere" application starts in any of the configurable frames on the portal.

This box is made up of a button for selecting “real-time status suppliers” and an area that displays the real-time status of each of these “suppliers”.

Figure 10.93 "SUPERVISION" APPLICATION FRAME

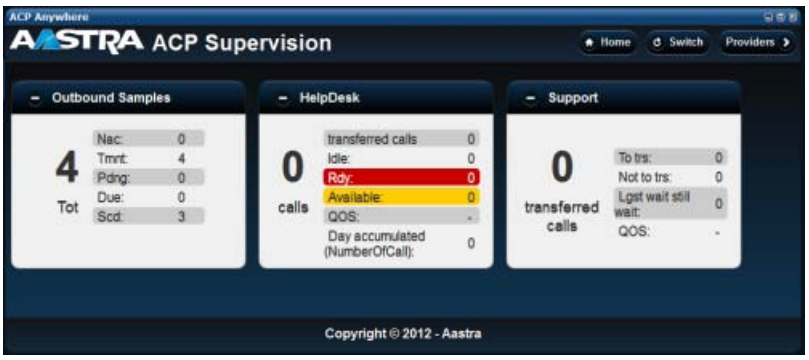


Figure 10.94

Each agent can have access to the real-time [server, service, filter] supervision data. These three items are called “real-time status providers”.

The “Supervision” application enables the agent to choose one or more of these “providers” from a list proposed to him/her.

When one of these providers is selected, a section appears in this application, displaying all the display properties specified by the service or team manager. At that moment, the corresponding data is displayed and

refreshed in real time.

The agent may unselect any of the suppliers at any time: the corresponding section then disappears from the application (and the data no longer arrive on the portal).

If a “real-time status provider” is no longer available to the agent (for example if this agent is no longer assigned to the corresponding service), the corresponding service disappears automatically from the application.

If the display properties of a displayed “supplier” are added or deleted by the manager, the corresponding section is automatically updated in the portal's web application.

Note: The “Supervision” application is accessible to agents, that is to users assigned to an M5000 CC service. Even if the user is equally a service or team manager, only the data meant for agents is displayed by this application.

Note: The number of ’Display properties" displayed is limited to seven (one main and six on the right side)

2 Providers

- Click the **{Providers}** button in the **" Supervision "** application window.

Figure 10.95 "PROVIDERS" DISPLAY

Figure 10.96

- Description of the **{Providers}** window
  - Click on a ***[Provider]*** in order to display/hide it
  - Clikc on ***[Back]*** in order to return to the the **" Supervision "** application window.

U-940 : USING THE AGENT TOOLBAR

OBJECTIVE

- Using the agent toolbar with the help of the web portal.

OPERATOR LEVEL

- Agent

TOOL(S)

- PC running with Internet Explorer 6.0, for access to the M5000 CC Portal site.

PRELIMINARY OPERATION(S)

- Start the M5000 CC Portal (see Sheet C-900).

PROCEDURE

The "Agent toolbar" application is included in the tool area of the portal in which the "Click & dial" application is displayed (example Figure 10.97). Just like the "Click & dial" application, it is not explicitly started but is permanently displayed if the user is a Contact Centre agent.

The following operations are available via the “Agent toolbar”:

Figure 10.97 "AGENT TOOLBAR" APPLICATION TOOLBAR

Tableau 10.2

Buttons	Name	Description (+ KEYBOARD SHORTCUT)
	**Start recording**	This button enables the agent to record the conversation. (F9) For the recording to be carried out successfully, the predefined Conversation Recording Service must be set to "Production" and a DNIS defined (in the M5000 CC Administration application's ***{Recording}*** tab of the **[Properties]** command) for this Service. If these conditions are not respected an error message will alert the user that the configuration used to activate this functionality must be checked. See general information in § 8.4.10.4.2).
	**Stop recording**	This button lets the agent stop recording the conversation. (F9)
	**Mark as nuisance call**	This button enables the agent to mark a call as a nuisance call (apart from enquiry calls). (F11)
	**Mark as non-nuisance call**	This button enables the agent to mark a call as a non-nuisance call (apart from enquiry calls). (F11)
	**Get the list of agents to whom the call may be transferred**	This button enables the agent to open the "Target agent" window which contains the list of agents to whom the call may be transferred. (Ctrl+A) To make the transfer: • Select an available agent (indicated through the symbol ). • Click ***[Validate]***. • Discuss with this agent like for an enquiry call (see "Click & dial" application tools in Sheet U-910). • Transfer the call to this agent or end the enquiry call and choose another agent.
	**Connect to Contact Centre**	This button enables the agent to switch to "connected" status and thus receive calls processed by the Contact Centre. (Ctrl+L)
	**Disconnect from Contact Centre**	This button enables the agent to change to "disconnected" status. He or she becomes invisible for the other applications. (Ctrl+L)
	**Change to Ready status**	This button sets an agent "Ready" to receive new calls. (Ctrl+R)
	**Change to Not ready status**	This button sets an agent "Not ready". The agent remains logged in to the server (and can be seen by the other agents) but does not receive any calls. (Ctrl+R) The menu button, located on the right hand side of this button, enables the agent to choose one of the "Not ready" activity codes configured in the system.
	**Change to Post-Call Processing**	This button changes the agent to the Post Call Processing (PCP) process: the agent cannot receive any calls but can carry out certain actions in connection with the previous call. (Ctrl+P) The menu button, located on the right hand side of this button, enables the agent to choose one of the "PCP" activity codes configured in the system.

Tableau 10.2

	**Make outbound professional call**	This button enables the agent to add an outgoing call to the list of outgoing calls in a service of his choice. The new call thus created will be immediately presented to the agent once he or she specifies the number to be called and (possibly) the name of the correspondent. (Ctrl+N)
	**Display day statuses**	This button lets the user view an ".html" file with all the statuses for the day in question. (Ctrl+S) See Configuring day statuses.

Tableau 10.3 DESCRIPTION OF THE BUTTONS IN THE AGENT TOOLBAR

Configuring day statuses

Day statuses appear in form of a pie chart, accompanied by a table specifying the numeric values. This pie chart presents the general statistics:

- [Incoming calls (DCP)] or [Outgoing calls (DCP)]: indicates the number of incoming or outgoing calls (in "DCP (Direct Call Processing)" mode) handled by the agent
- [Presentation of incoming calls (Reserved))] or [Presentation of outgoing calls (Reserved]: indicates the number of "Reserved" incoming calls
- [On hold]: indicates the total period during which incoming or outgoing calls have been put "On hold"
- [PCP & Idle]: indicates the period during which the agent was in “PCP (Post-Call Processing)” mode. Depending on the configuration chosen by the service manager, the different “PCP” activity codes may be presented in detail on another pie chart.
- [Break]: indicates the period during which the agent was on “break”.
- [Ready & idle]: indicates the period during which the agent was “ready”. Therefore, this value indicates the period during which the agent did not handle any incoming or outgoing call.
- [Not Ready & idle]: indicates the period during which the agent was “Not ready”. Depending on the configuration chosen by the service manager, the different “Not ready” activity codes may be presented in detail on another pie chart.
- [Incoming private calls] or [Outgoing private calls]: indicates the total period during which the agent made an incoming or outgoing private call.
- [Work time]: indicates the time during which the agent was logged on or logged off, but in "PCP" mode. Therefore, this value is the sum total of all the previously described durations.
- [Unsuccessful presentation of incoming calls]: indicates the number of failed incoming call presentations: this value corresponds to the number of times a call had been presented to an agent but the agent did not answer because:
  - the caller had on-hooked before the agent could answer
  - the presentation timeout had been reached before the agent could answer
  - the global call presentation timeout had been reached before the agent could answer

U-941 : USING THE MULTIMEDIA TOOLBAR

OBJECTIVE

- Using the multimedia toolbar with the help of the web portal.

OPERATOR LEVEL

- Agent

TOOL(S)

- PC running with Internet Explorer 6.0, for access to the M5000 CC Portal site.

PRELIMINARY OPERATION(S)

- Start the M5000 CC Portal (see Sheet C-900).

PROCEDURE

The "Multimedia toolbar" application is included in the tool area of the portal in which the "Click & dial" application is displayed (example Figure 10.97). Just like the "Click & dial" application, it is not explicitly started but is permanently displayed if the user is a Contact Centre agent and if this user has the right to send Email and/or SMS (U-327).

The following operations are available via the “Multimedia toolbar”:

Figure 10.98 "MULTIMEDIA TOOLBAR" APPLICATION TOOLBAR

Tableau 10.4

Buttons	Name	Description (+ KEYBOARD SHORTCUT)
	**Send E-Mail**	This button enables the agent to send an e-mail (CTRL-E)
	**Send SMS**	This button lets the agent to send a SMS. (CTRL-T)

Tableau 10.5 DESCRIPTION OF THE BUTTONS IN THE MULTIMEDIA TOOLBAR

U-942 : USING THE WEB DIRECTORY APPLICATION

OBJECTIVE

- Making a simple search in the directories
- Making an advanced search in the directories
- Viewing the detailed information area
- Sorting contacts
- Navigating through the list of contacts
- Adding, copying, modifying or deleting a contact
- Changing a page
- Calling a contact (private or professional call)
- Monitoring contact extensions
- Monitoring and modifying contact forwarding settings
- Obtaining contact presence status
- Viewing a contact's calendar
- Displaying the potential destination agents for the current call
- Creating a tab that provides quick access to a directory

OPERATOR LEVEL

- "Directory" or "agent" security level user.
- Supervision is available if the user is included in at least one supervision group.

TOOL(S)

- PC running with Internet Explorer 6.0, for access to the M5000 CC Portal site.

PRELIMINARY OPERATION(S)

- Start the M5000 CC Portal (see Sheet C-900).

PROCEDURE

The "Directories" application starts in one of the configurable frames (see Sheet U-900) on the portal.

This frame contains an actions area that gives quick access to the different directories, and is used to make a search there. It also contains a list of contacts resulting from the search and an area that shows all the information about the selected contact (example Figure 10.99).

An alternative view can also be displayed in this frame, showing potential destination agents for the current professional call. At any time, the user can switch between the "directories" view and the "destination agents" view by clicking the corresponding toggle button.

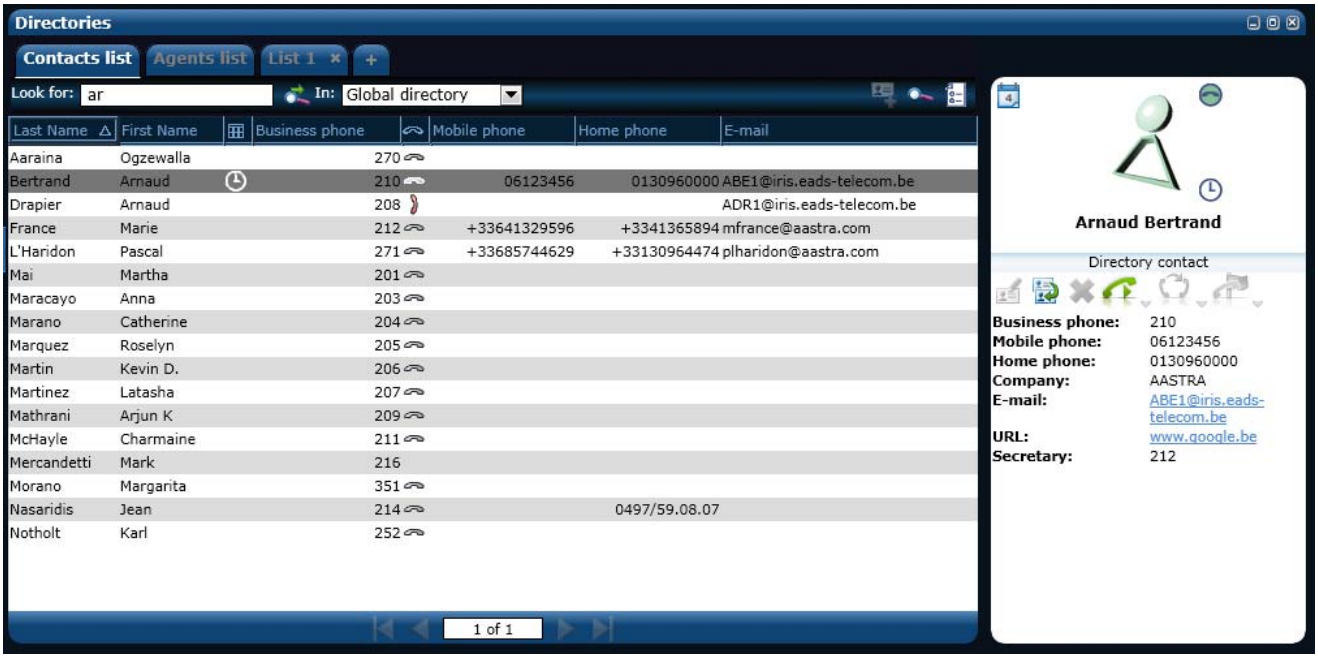


Figure 10.99 "DIRECTORIES APPLICATION FRAME

1 Simple search

By clicking the  button (shorcut: Return), a search with only one criterion is made to the directory server.

The available criteria may be:

- First name
- Surname
- Company,
- E-mail address,
- Office phone number
- Supervision or non-supervision of this office phone number
- Mobile phone number
- House phone number
- Private fields 1 to 10.

If the search is done in the global directory (directory containing other directories) then private fields are not available.

However, in global directory, it is possible to search the information in all fields (including private fields) by selecting ***(all)***. Compared to other simple request, a directory entry is retrieved if a field contain the searched information whatever the position.

2 Multi-criteria search

By clicking the  button (shorcut: Ctrl+Shift+F), it is possible to make a search using several criteria. A window opens so the user can enter some mixed criteria:

- First name
- Surname
- Company
- E-mail address

- Office phone number
- Supervision or non-supervision of this office phone number
- Mobile phone number
- House phone number
- Private fields 1 to 10.
- The subscriber forwarding state: several forward can be displayed. For every forward, the following data is displayed:
  - u The forward kind: immediate, on busy or on no answer
  - u The call origin on which the forward apply: for every calls, for internal call or for external call
  - u The forward destination

The search is made by checking that each searched item actually meets the selection criteria (example: first name beginning with ‘jam’ and surname beginning with ‘smi’).

If the search is done in the global directory (directory containing other directories) then private fields are not available.

3 Sorting contacts

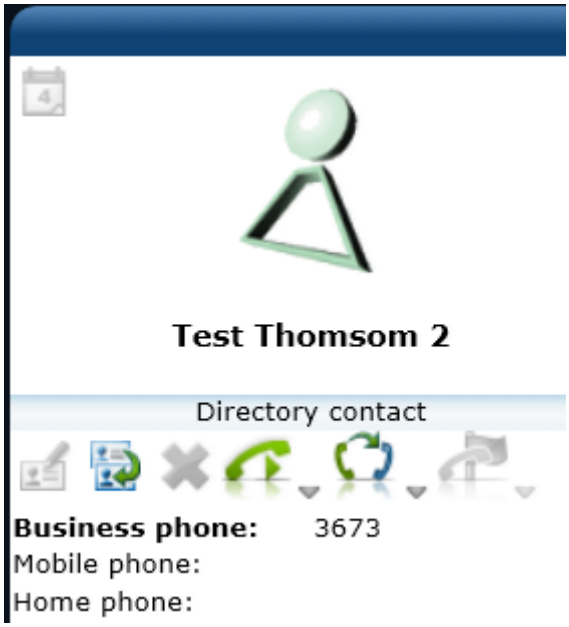
In each column, sorting may be modified by clicking the title of column concerned (first name, surname, office phone, mobile phone, house phone, and company).

Sorting is done in ascending or descending order for the numbers columns, and in alphabetical order from A to Z or Z to A for the alphabet columns.

This sorting is global unless it applies to the statuses of monitored extensions (sorting is only made on the current page).

4 Selecting a contact from a directory

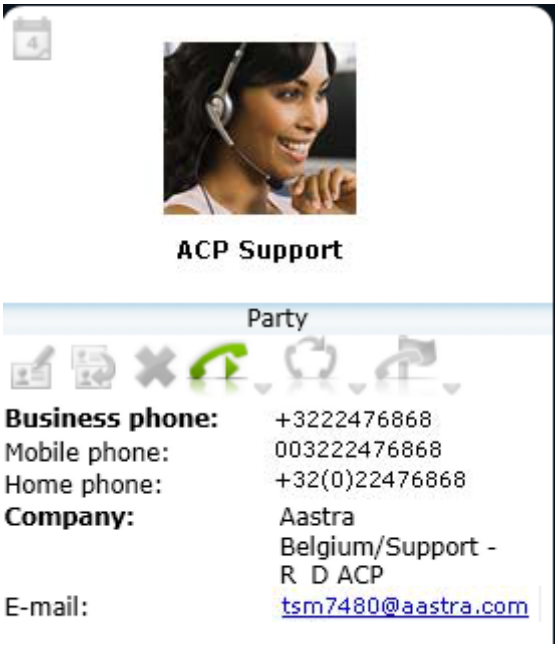
A detailed information area for the contact is available by selecting one item from the list of contacts.



This area consists of:

- Surname
- Company
- E-mail address
- Office phone number
- Mobile phone number
- House phone number
- Private fields 1 to 10.
- Forward settings

The picture of the contact can be displayed if defined in the directory



Private fields can be personalised from the Administrator application.

If the contact results from a search in the global directory (the directory that contains all the directories), the private fields are not available.

Private fields may contain some links such as e-mail address, URL or network path. This information will appear in form of a clickable link.

Given the potential length of this information, the links will be displayed in a simplified form, for example:

http://www.google.be/ig?hl=fr will become www.google.be

\\NomHote\AFS\Version10.1\Services\TechnicalSupport\M7480Routing.mdb will become M7480Routing.mdb

\\NomHote\AFS\Version10.1\Services\Technical Support\ will become Technical Support.

It is, however, possible to see the full value of the information in the browser status bar.

5 Automatic navigation

It is possible to change the item selected on the list of contacts by typing in some characters like in Windows explorer. This navigation is done for the active sorting column.

For instance, if the list is sorted by first name and the user types in the letters ‘arn’, the system will try to select the first name starting with ‘arn’ on the list displayed.

- Either it finds an item and selects it,
- or, if it does not find the item and if the number of contacts is above 50 (more than one page), the system will resort to the directory server with the criteria used initially and by adding a criterion to the first name. If this advance research obtains a result, the result will be displayed.

6 Change of page

If the number of contacts is above 50, the commands in the navigation bar at the bottom of the application is used to quickly browse through the directory pages:

- First page 
- Previous page 
- Next page 
- Last page 

To go directly to a page via its number, select the current page number on the navigation bar, enter the number of the page to go to and press Enter.

7 Adding a contact

Click the  button (shortcut: Ctrl+N) and then fill in the different fields proposed. A new contact will then be added to the previously selected directory. This action is only authorised for an M5000 CC directory.

You can set the picture if defined in the directory

8 Copying a contact

Click the  button (shortcut: Ctrl+C), then select the directory to which the previously selected contact(s) must be copied. Only the M5000 CC directories are authorised as target directory for the copy.

9 Modifying a contact

Click the  button (shortcut: Ctrl+O) then modify the information about the previously selected contact (in an M5000 CC directory only).

10 Deleting a contact

Click the  button (shortcut: Ctrl+D or Delete) to delete a previously selected contact (in an M5000 CC directory only).

11 Calling a contact

If the contact has a phone number and the portal is associated with a phone, it is possible to make a call (or enquiry call) to this contact.

This call may be made by clicking  , after selecting the contact from the list, by double-clicking the contact line, or choosing one of the numbers proposed on the list by clicking the  .

In the first two cases, the number dialled is first the professional number, then mobile phone number (in the absence of a professional phone number), then private number (in the absence of a professional and mobile phone number).

When the call is set up, the management commands for the current call are available in the main toolbar, on top of the portal.

In the same manner, the  button is used to make a professional call to this contact.

Three shortcuts allow calling business, home and mobile contact phone numbers:

- Ctrl+B : call contact business phone number
- Ctrl+H : call contact home phone number
- Ctrl+M: call contact mobile phone number

12 Transferring call to contact

It is also possible to directly transfer the call (blind transfer) displayed in the click and dial application to a contact phone number by clicking the  button . The number to which call is transferred first the professional number, then mobile phone number (in the absence of a professional phone number), then private number (in the absence of a professional and mobile phone number). It is also possible to select the contact phone number (professional, mobile, private …) to which call is transferred by clicking the  . button and by selecting the number in the list.

Three shortcuts allow making blind transfer to business, home and mobile phone number

- Ctrl+Shift+B : transfer to business phone number
- Ctrl+Shift+H: transfer to home phone number
- Ctrl+Shift+M: transfer to mobile phone number

13 E mail to contact

It is possible to launch your E Mail application by simply clicking on the E Mail hyperlink in contact details area in order to write an new E Mail to the contact. The Ctrl+Shift+E shortcut allows performing this action.

14 Supervising a directory

The supervision of a directory contact's extensions starts automatically if these extensions are supervisable (“Supervision group” function).

This supervision is performed in real time and distinguishes four statuses per supervised extension:

- Free
- Ringing free 
- Ringing busy  : this information is only displayed when Intercom supervision is used. With CSTA Supervision, the Ringing free icons is displayed even when it is no more possible to call the contact
- Busy 
- Logoff :  (indicates the subscriber is log off from every set or that the subscriber is out of service), This information is not available when Intercom supervision is used.

15 Supervising and modifying forward status

When CSTA supervision is used, the user can see the forward programmed for a contact

A new column allows seeing if at least one forward is set for the contact. The  icon is displayed in this column in this case.

In the detailed area, all the forwards set for the contact are displayed

- For every forward, the following information is displayed:
- The forward type: Immediate, when set is busy, on no answer
- The call origin to which forward apply: for every calls, for internal calls, for external calls.
- The forward destination

When the user can modify forward settings, two new commands are available

- The  command displayed just after a forward allow to remove it.
- The  command allows to define a forward. By clicking this button, a window is displayed in order to define it.

16 Contacts’ presence status

The contacts’ presence status during the search in a directory is displayed graphically on the list, as well as in the detailed record.

If a calendar server is configured and a contact is defined in it, his or her status may take on four values, according to his or her appointments:

- Free : no appointment in the calendar at the moment
- Busy
- Temporary
- Absent : there is an appointment in the calendar when the contact is seen in this status. This is not the presence status which can be configured with the wizard (with automatic reply to e-mails).

The presence status is only refreshed if a new search is made in a directory.

It is possible to display a description of the current appointment(s) by placing the mouse over the presence status. This information is superimposed on the presence status in form of a window and gives, in addition to the presence status, the time frame and title of the appointment.

This window disappears once the mouse pointer is no longer over it.

17 Contact calendar

Click the button (Ctrl+Shift+C) to display the detailed calendar of the previously selected contact.

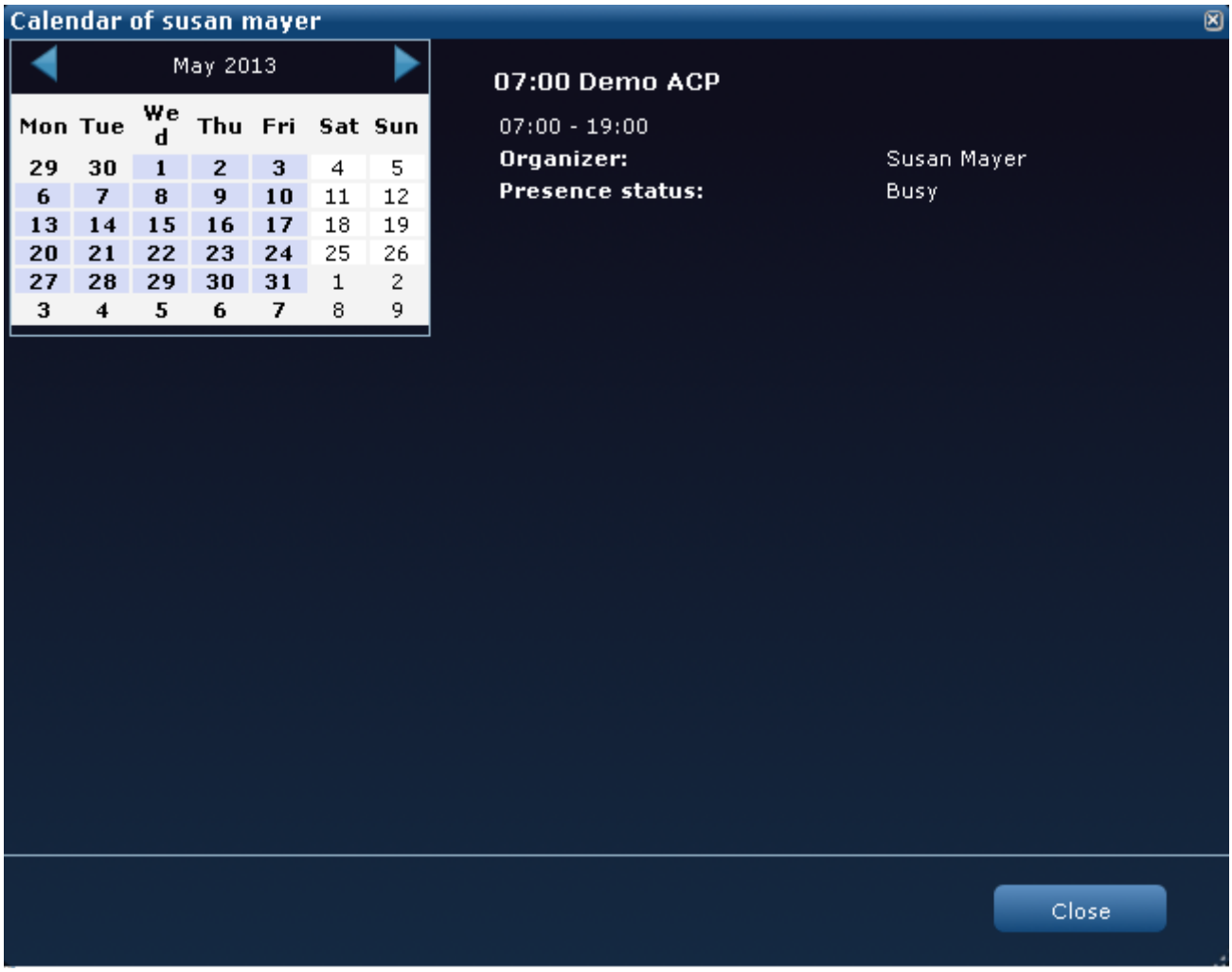


Figure 10.100 CONTACT CALENDAR

The upper left area of this window allows navigation by month in the calendar. The scheduled appointment days are displayed in bold, and the selected day highlighted.

The right area shows the detail of each appointment for the selected day.

18 Refreshing the detailed directory record

In addition to the refreshing operation which takes place once a contact on the list is selected manually, this area can also display information about the contact associated with any incoming or outgoing call.

In fact, when a call arrives on the M5000 CC Portal and if the “Directories” application is started, the system will try to find the contact associated with this call.

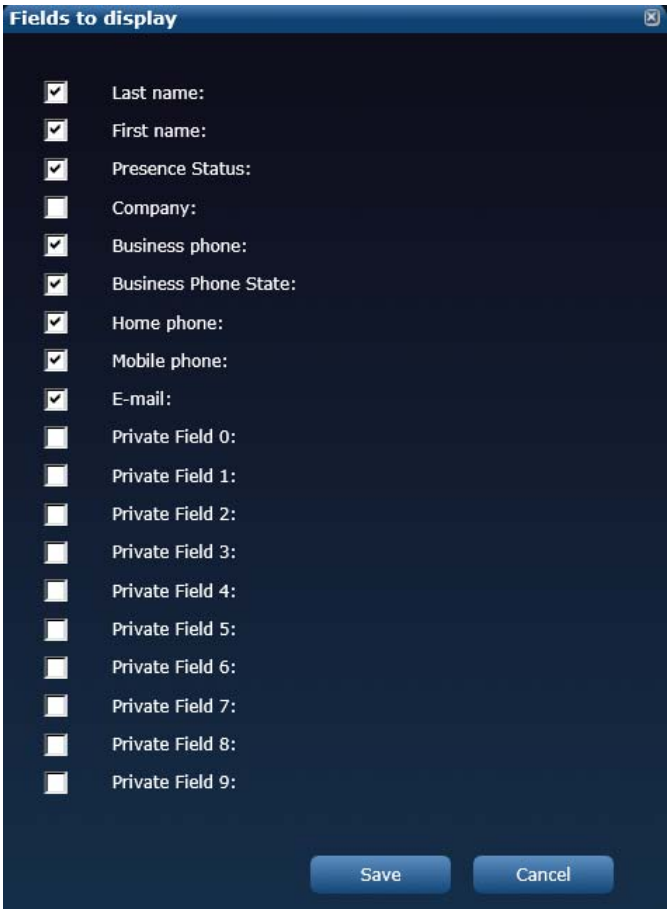
If the contact is found, the detailed record is updated, as well as the information area for the call CLID.

This detailed record is updated by selecting a contact, receiving a call, selecting a call for which a contact has been found, or by clicking one of the correspondents in the preview area.

A call cannot be made from this area.

19 Selection of the fields to display

Click on button  to select the fields to be displayed in Directories application.



Private fields having at least one value between brackets means that at least one directory have this private fields defined. The name of this field can differ between the different directories. The values between brackets is the whole possible values this private field can have in the different available directories. The fields selection will be applied to all the available directories of the user.

After validation, the contacts list is erased and the visible fields is updated.

The name of the private field depends on which directory is selected:

- if global directory is selected, the name of the private field will be the whole defined names of the whole directories for this private field. If this private field has not been defined in any directories, the name of the field will be "Private field xx"
- if a particular directory is selected, the name of the private field will be the name defined for this particular directory. If the private field has not been difined for the selected directory, the name will be "Private field xx"

20 Destination agents view

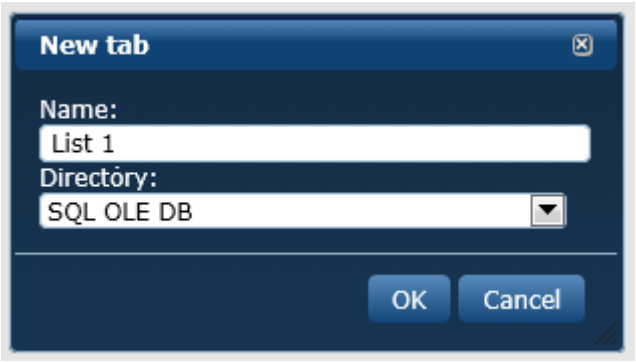
When this view is active, it is synchronized with the active professional call to display the list of potential agents to whom the current call can be transferred.

If an AgentTransferCall script node is executed, the list is updated to reflect the routing criteria specified in the node (if any): teams, languages and skills.

After selecting a row in this view, the agent can click a button in the directory toolbar to initiate a transfer of the current call to the chosen destination agent

21 Quick access to a Directory

Click the  tab (shortcut: Ctrl+Shift+T) and then fill in the different fields proposed. A new tab will then be added to the existing tabs.


New tab
Name:
List 1
Directory:
SQL OLE DB
OK
Cancel

U-943 : : USING THE MISSED CALLS LOGS 'SERVICE'

OBJECTIVE

- Consult a missed calls log 'Service'.
- Manage the recall of remote user.

OPERATOR LEVEL

- "Directory" or "agent" security level user.
- The user has access to missed call logs that are assigned to at least one user group to which it belongs (see sheet U-327)

TOOL(S)

- PC with a web browser to access the M5000 CC Portal site.

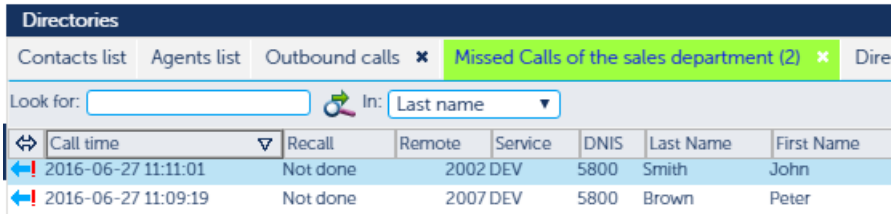
PRELIMINARY OPERATION(S)

- Start the M5000 CC Portal (see Sheet C-900).

PROCEDURE

1 Consultation

A user can access to the missed call logs by using the 'Directories' WEB application (see sheet U-942). It is advisable to set a quick access tab for this type of call log. Indeed, this tab will display in real time the number of entries in the log and it can change color and flash to indicate the arrival of new entries.

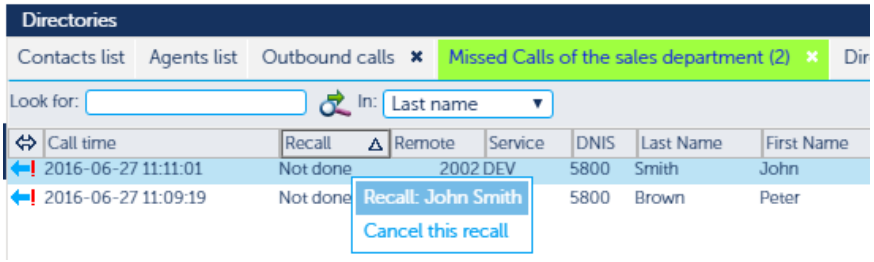


Compared to another call log, a missed call log 'Service' displays the following additional columns:

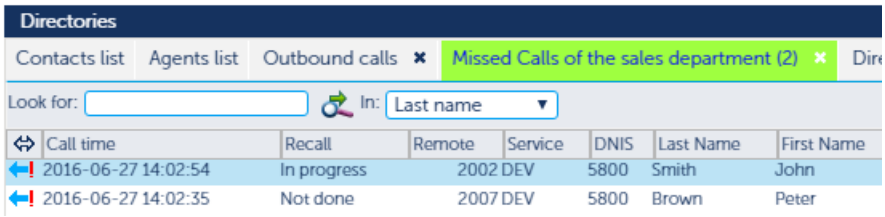
- **Recall**: Indicates the status of the recall. The default values are: '**Not done**', '**In progress**' and '**Failure**'. These labels can be configured by the administrator.
- **Service**: Indicate the identifier of the service concerned.
- **DNIS**: Indicates the alias name of the DNIS or DNIS number.

1 Recall

The agent can call the caller back by right-clicking the field '**Recall**' of the relevant log entry and selecting '**Recall...**' from the context menu that appears on the screen:



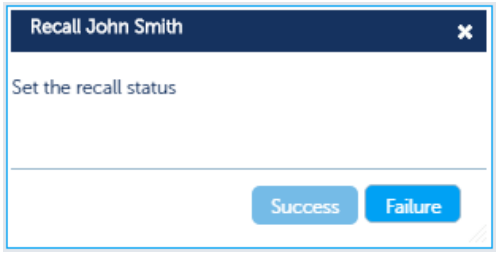
For the duration of the recall, the field of the column '**Recall**' displays the status 'in process':



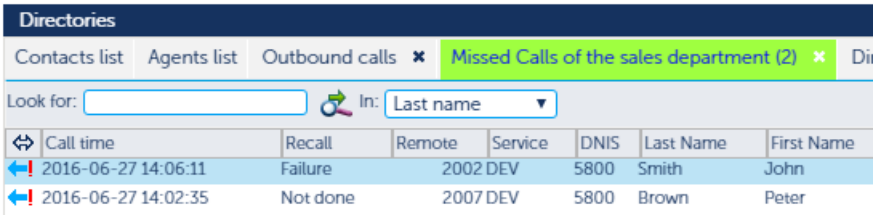
1 Recall state

After the telephone call initiated by the recall command, a dialog box appears on the screen, prompting the

agent to set the new state of the recall: '**Success**' or '**Failure**':



If the new state is '**Success**', the relevant entries disappear from the call log. Otherwise the field of the column '**Recall**' is updated on the relevant entries with the value '**Failure**':



U-950 USING THE CONFERENCE BRIDGE APPLICATION

OBJECTIVE

- Viewing the list of conferences
- Reserving, modifying or deleting a conference
- Participating in an on-going conference
- Supervising a conference.
- Modify voice emission of participants in an on-going conference.

OPERATOR LEVEL

- “Conference” security level user.

TOOL(S)

- PC running with Internet Explorer 6.0, for access to the M5000 CC Portal site.

PRELIMINARY OPERATION(S)

- Start the M5000 CC Portal (see Sheet C-900).

PROCEDURE

The "Conference Bridge" application starts in one of the configurable frames (see Sheet U-900) on the portal.

This frame comprises a list of conferences and a supervision area (example Figure 10.101).

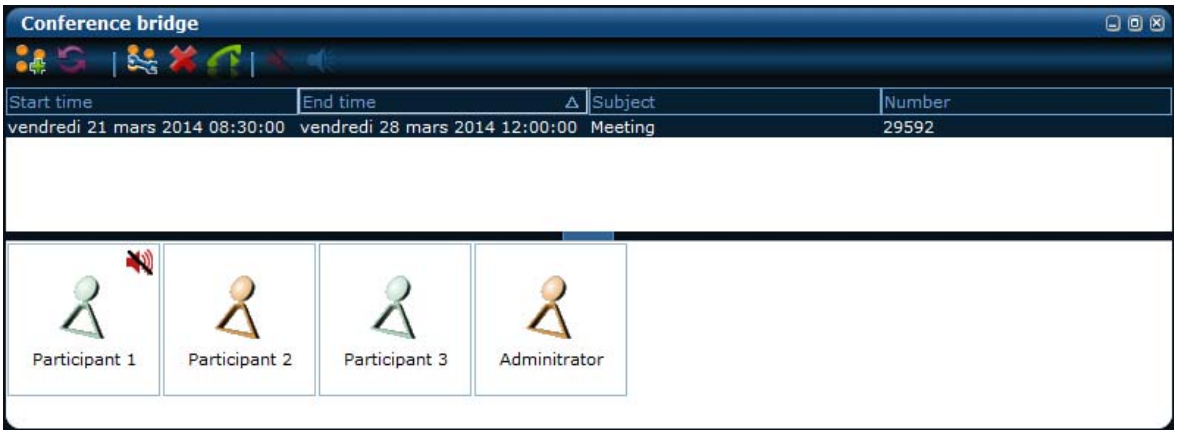


Figure 10.101 "CONFERENCE BRIDGE APPLICATION FRAME

1 Viewing the list of conferences

Each user may view on this list all the conferences that he or she has reserved and those to which he or she is invited. The only exception: a conference administrator sees all the conferences defined in the system even if he or she is not one of the participants.

The list of conferences is not updated in real time. To refresh this list at any moment:

- Click the  button in the Conference Bridge application toolbar.

When there are several conferences on the list, they can be sorted by clicking the headers. Two successive clicks on the same header changes the sorting order (ascending or descending order).

Clicking an item on the list selects the corresponding conference. In this case, the supervision area gives the list of participants in this conference and their current status in the conference.

2 Reserving a conference

- Click the  button in the Conference Bridge application toolbar.

  The **“Conference configuration”** window opens. This window is used to enter all the data about the new conference (subject, start date and time, end date and time, names and e-mail addresses of participants).

- Validate this data by clicking the ***[Validate]*** button in the **"Conference configuration"** window.

The following checks are made:

- That all the fields are filled in correctly: start time < end time, at least one participant is specified, the conference topic is not empty.
- That enough resources are available during the period specified for all the participants.

If these conditions are met, the conference is added in the system; otherwise a message is displayed to explain the reason while the reservation has failed.

3 Viewing and/or modifying the configuration of an existing conference

- Select a conference from the list.
- Click the  button in the Conference Bridge application toolbar.

The **"Conference configuration"** window opens. This window contains the properties of the selected conference. All the properties are modifiable if the conference start time has not yet been reached. Otherwise (if the conference has already started), the user may only add new participants to the conference (if the number of available resources is sufficient).

4 Deleting a conference

- Select a conference from the list.
- Click the  button in the Conference Bridge application toolbar.

The user may delete the selected conference if it is not yet in progress.

5 Joining a conference

- Select a conference from the list.
- Click the  button on the "Conference Bridge" application toolbar to make a call to the number indicated for the conference in question.

6 Supervising a conference

- Select a conference from the list.

The conference supervision area is filled in automatically when a conference is selected from the list of conferences. It contains the names of all the participants in this conference, and the icon used for each of its participants indicates whether or not the participant is currently log on to the conference.

The voice emission icon indicates whether or not the participant is able to speak.

7 Modify voice emission of participants

- Select a conference from the list.

The conference supervision area is filled in automatically when a conference is selected from the list of conferences.

- Select at least one participant from the conference supervision area.

The selection of a participant (can be multiple) allows to the organiser of the conference to mute/unmute him/her/them. This can be done by using corresponding button on the conference toolbar or by using a context menu on the participant.

- Click the  button on the "Conference Bridge" application toolbar to mute
- Click the  button on the "Conference Bridge" application toolbar to unmute
- Click on the right mouse button to bring up the context menu

U-960 : USING THE AGENT WEB SUPERVISION APPLICATION

OBJECTIVE

- Supervising agents
- Displaying agent statuses in the histogram / pie chart
- Displaying call statuses in the histogram / pie chart
- Displaying e-mail statuses in the histogram / pie chart
- Displaying extension statuses in the histogram / pie chart
- Displaying web session statuses in the histogram / pie chart
- Displaying the quality of service in the histogram / pie chart
- Displaying the quality of service of e-mails in the histogram / pie chart
- Displaying the waiting time in the histogram
- Displaying the e-mail processing time in the histogram

OPERATOR LEVEL

- Service Manager, Team Manager or Team Supervisor.

TOOL(S)

- PC running with Internet Explorer 6.0, for access to the M5000 CC Portal site.

PRELIMINARY OPERATION(S)

- Start the M5000 CC Portal (see Sheet C-900).

PROCEDURE

The "Agents supervision" application starts in one of the configurable frames (see Sheet U-900) on the portal.

Note: By default, if the same user is already connected to another instance of the portal, the "Agents supervision" application is not available, even if this user has sufficient rights to use it.

Note: It's possible to force the availability, for the same user, of the "Agents Supervision" application, in multiple instance of the portal. This requires setting to "True" the value of the "SecondPortalAgentsSupervisionEnabled" key in the "web.config" file of the webservice (section <appSettings>). The "web.config" file is by default in the folder "C:\Program Files\M5000 CC\Portal\WebService".

A : <u>General use of the "Agent supervision" application</u>

- **Starting the "Agent Supervision" application**

The **"Agent Supervision"** application may be started as a portal application (in one of the configurable frames, see "8.7.3.2") or in a new window.

-To start the application in a configurable frame: Click the ***[Agent supervision]*** button in the left panel of the portal (in the following circled area of the icon 

).

-To start the application in a new window, click the ***[Agent supervision]*** button in the left panel of the portal (in the following circled area of the icon 

).

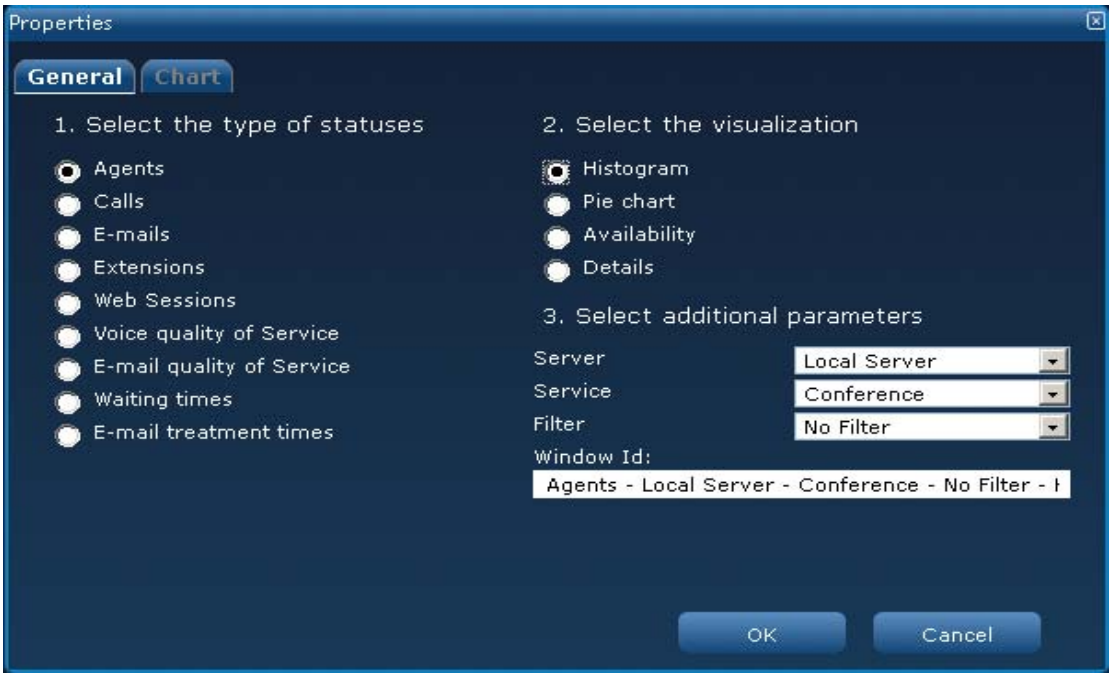
Note: Only one instance of the "Agent Supervision" application may be opened at a time. If an instance is already open (inside the portal or in a new window), clicking the [Agent supervision] button will have any impact.

- **Adding new views to the "Agent Supervision" application**

Figure 10.102 "AGENT SUPERVISION" WINDOW/FRAME

The **"Agent Supervision"** application toolbar has one button: ***[Add status display window]***  which enables the team manager/ team supervisor / service manager to add a new supervision window. Clicking this button displays the following properties:

Figure 10.103 "PROPERTIES WINDOW"



Here is how to create a new status display window:

Note: The tabs and fields vary according to choice of options.

*In the **{General}** tab*

- Frame 1: select the type of status you want to display.
- Frame 2: select the type of display (the options in frame 2 may change according to the choice made in frame 1).
- Frame 3: select some additional parameters (the parameters available in this frame depends on the choice made in frames 1 and 2).
- The ***{Window identifier}*** parameter is the same for all the options. It is provided automatically, but can be changed freely. The only constraint is that it cannot be duplicated (or else you will receive a warning, and you must then change it to be able to continue creating the status display window).
- When you finish, click ***[VALIDATE]*** to create the display window (the properties window closes automatically).

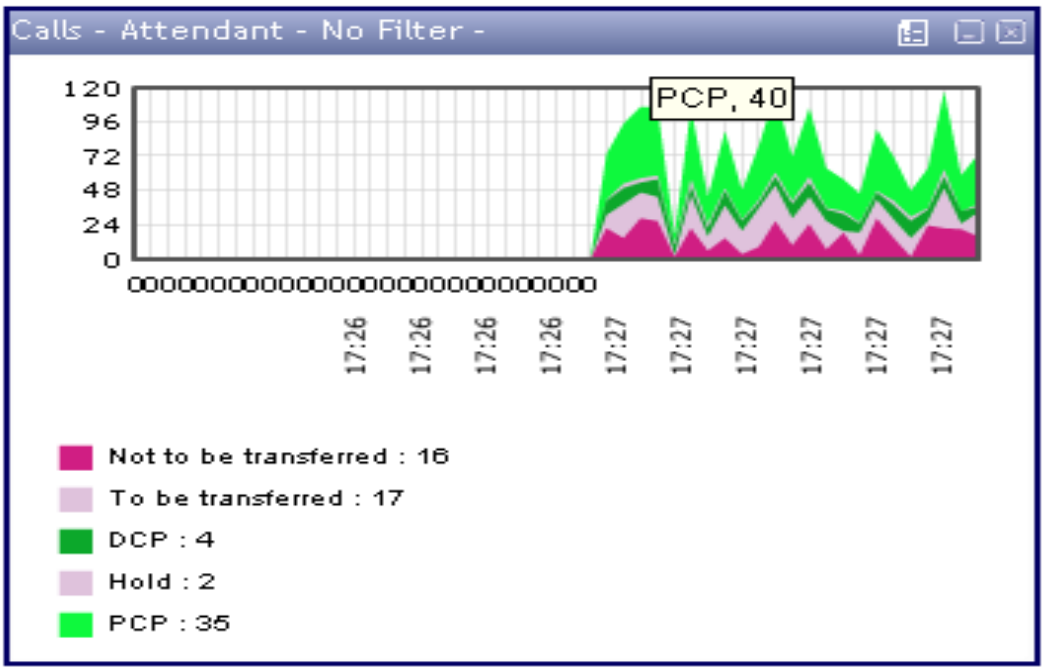
Note:

-You can click ***[CANCEL]*** at any time to cancel the creation of a new window and close the **Properties** window.

-When you create a new status display window, this window is saved in your bookmarks and will automatically appear when next the **Agent Supervision** application is started. You have to explicitly close the status display window so it will no longer appear the next time the application is launched (it will be removed from the bookmarks).

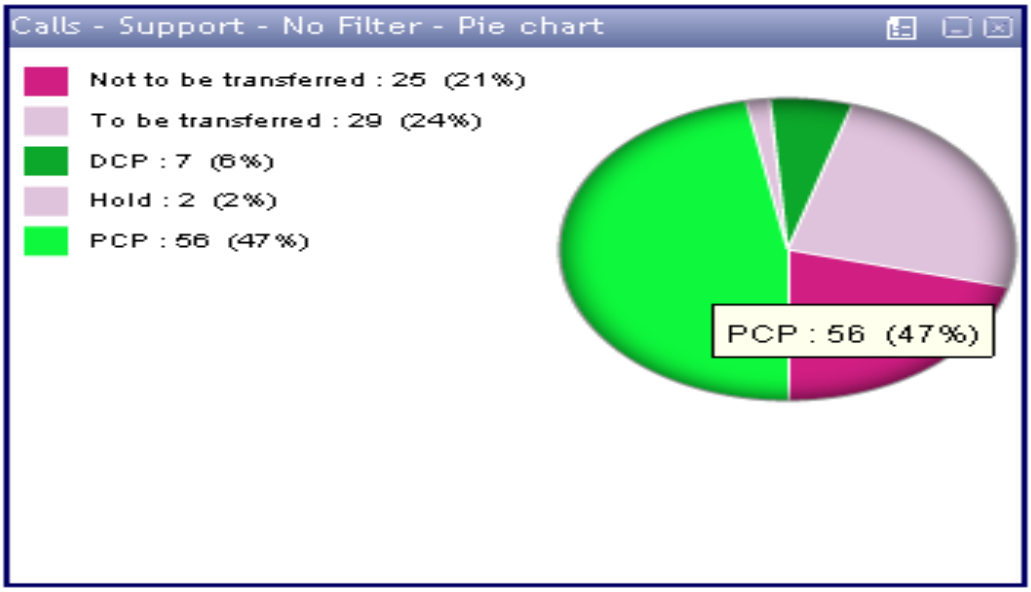
Note: The bookmarks are personal for the "Agent Supervision" application user and will not be visible to other users of the portal/application.

Figure 10.104 HISTOGRAM



Note: Moving the mouse over the time bar displays the current value of the graph.

Figure 10.105 PIE CHART



Note: Moving the mouse over a portion of the pie chart displays the caption for this portion, as well as its global value and percentage value.

- **Options available in a status display window**

  - Editing the display window: click the button in the display window title bar to display the properties of the display window. You can modify the properties and click ***[OK]*** to confirm the changes (which will be immediately applied to the display window), or click ***[CANCEL]*** to close the properties without modifying the current parameters.
  - Moving the display window: click the title bar and hold down the left mouse button, move the display window to the place you want in the **"Agent Supervision"** application window then release the mouse button.
  - Resizing the display window: move your mouse to the edge of the display window so its pointer changes to double arrow. Click and hold down the left mouse button. Now, you can move the mouse until the window has the form you want, before releasing the mouse button.

- Minimising the display window: click the button located in the display window title bar to minimise it. This will make the window invisible.
- "Opening a minimised display window: click the **[Window]** menu located in the **"Agent Supervision"** application toolbar; a drop-down menu appears with the list of created display windows. A "V" may or may not appear in front of the display window, indicating that this is visible or not visible. Ticking this menu makes the corresponding display windows visible.

Figure 10.106 THE "WINDOW" MENU

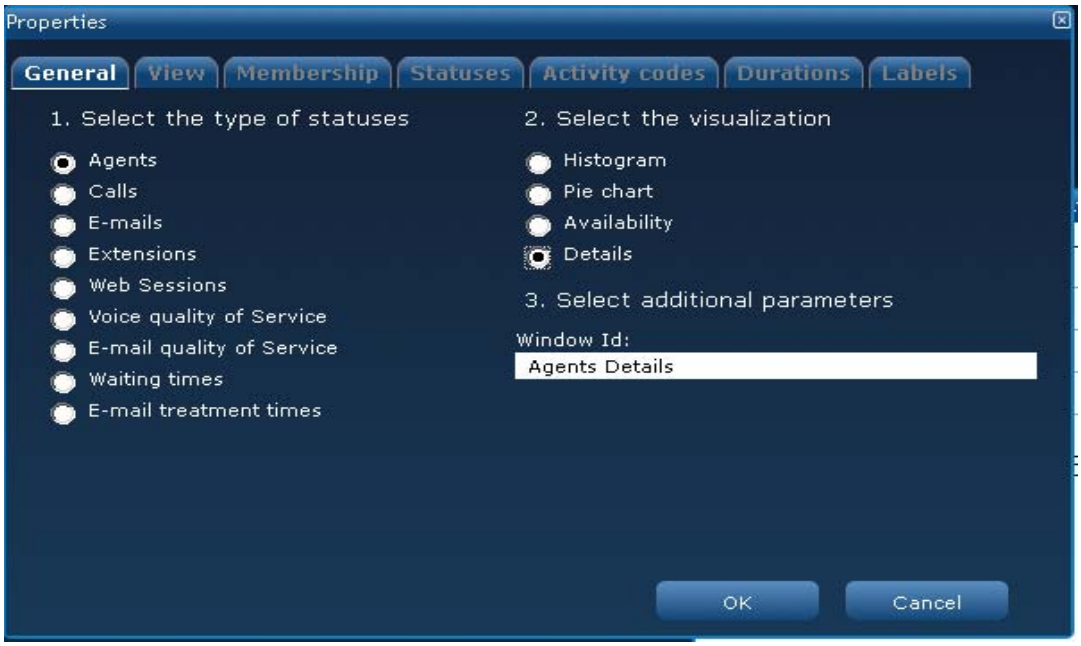
- Closing a display window: click the button located in the display window title bar to close this window. A confirmation window opens, asking you to confirm your choice: ***[YES]*** to close the display window, ***[NO]*** to cancel the action.

Note: When a display window is closed, it is removed from the user's bookmarks.

B : "Agent supervision": Agent details

Click the ***[Add a status display window]*** button, located in the **"Agent supervision"** application toolbar, to create a new supervision window. The following properties window opens:

Figure 10.107 PROPERTIES WINDOW FOR DISPLAYING "AGENT DETAILS"



The addition of an **"Agent details"** display window is configured in 10 steps (spread over 7 tabs). The different configuration steps are:

Click the **{General}** tab.

(1) Select the *[Agent]* option in Section 1 {Select status type}.

(2) Select the ***[Details]*** option in Section 2 **{Select display},** new tabs are displayed in the **"Properties"** window.

(3) In Section 3 **{Display additional parameters}**, the ***{Window identifier}*** parameter is provided automatically, but it can be changed freely. The only constraint is that it cannot be duplicated (or else you will receive a warning, and you must then change it to be able to continue creating the display

window).

Note: *the {Window identifier} parameter is also the name that will be displayed in the title bar of the new display window.*

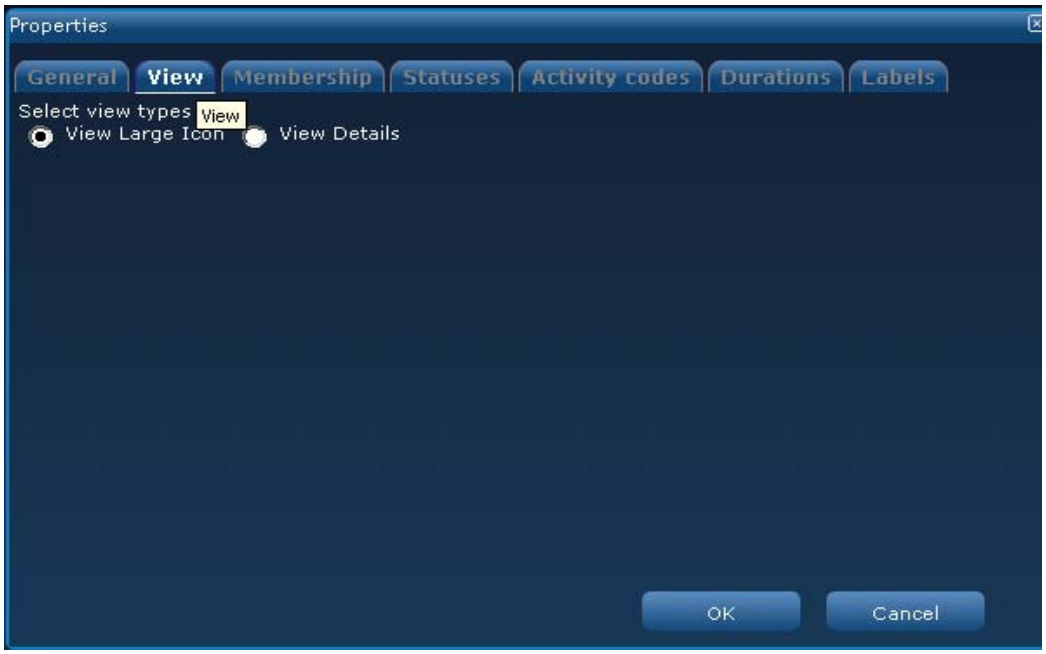
Click the {Display} tab.

(4) Select the type of agent display:

-Selecting ***[Display large icons]*** displays the agents' details with very little information (the information displayed may be selected in the last **{Labels}** tab)

-Selecting ***[Display detail]*** displays the agents' details on a table with the following fields: ***{Identifier}, {Name}, {Telephone}, {Extensions}, {Service}, {Mixed status},{ Status duration}, {Activity}, {Activity code}, {Activity duration}, {Extension status}, {Extension status duration}, {Connection status},*** and ***{Connection status duration}***.

Figure 10.108 "DISPLAY" TAB IN THE PROPERTIES WINDOW



Click the {Membership} tab.

(5) Select the services/teams you want (you can tick several boxes).

-If you tick ***[Select all]***, the system will select all the services on the list, but not all the teams.

-If you tick ***[All agents]*** of a service, all the agents assigned to this service will be included.

-If you select a team in a service, the ***[All agents]*** tab of the corresponding service will be automatically unticked.

Figure 10.109 “MEMBERSHIP” TAB OF THE PROPERTIES WINDOW

Click the {Statuses} tab.

(6) Select the statuses you want. You can tick several statuses or also ***[Select all]*** to tick all the statuses. The list of statuses includes different statuses ranging from “Disconnected”, “Not ready”, “PCP” to “Break”.

Figure 10.110 “STATUS” TAB OF THE PROPERTIES WINDOW

Click the {Activities code} tab.

(7) Select the activity code The list of activity codes comprises different “Not ready” and “PCP statuses”. This list displays only the activity codes for which a label has been created (see Sheet U-312): {Activity

codes} tab:. You can tick several activity codes or also tick “Select all” to tick all the activity codes.

Note: if you have just created the labels in the administrator, you must close and reopen the properties window so they can be taken into account.

Figure 10.111 “ACTIVITY CODE” TAB IN THE PROPERTIES WINDOW

Click the {Durations} tab.

(8) Configure the required durations (this phase is optional). You can select the boxes ***[Minimum duration of activity status]***, ***[Minimum duration of extension status]*** and ***[Minimum duration of connection status]***. If any of these boxes is ticked, you must also enter the corresponding durations (in seconds). These parameters will have an impact on display: agents will only be visible if the different statuses reach the minimum value entered.

Configuring the ***[Alarm threshold]***: do not forget to enter a duration (in seconds) if you activate this function. This parameter will have an impact on display. The agent’s icon will have an exclamation mark “!” indicating that an alarm has been set off for this agent.

Figure 10.112 "DURATION" TAB IN THE PROPERTIES WINDOW

Click the {Labels} tab.

(9) Configure the different labels required. By default, the application will tick the ***[Agent identifier]*** box. You can tick several boxes, but at least one of the following two boxes must be ticked: ***[Agent identifier], [Extension].***

Figure 10.113 "LABELS" TAB OF THE PROPERTIES WINDOW

(10) Click ***[Validate]*** to add the display window. This action will automatically close the **"Properties"** window.

Figure 10.114 "AGENT DETAILS" IN "LARGE ICONS" MODE

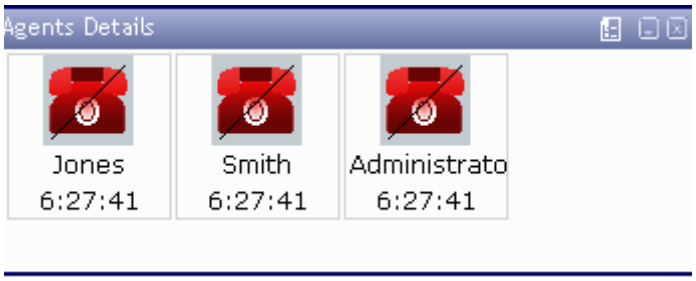
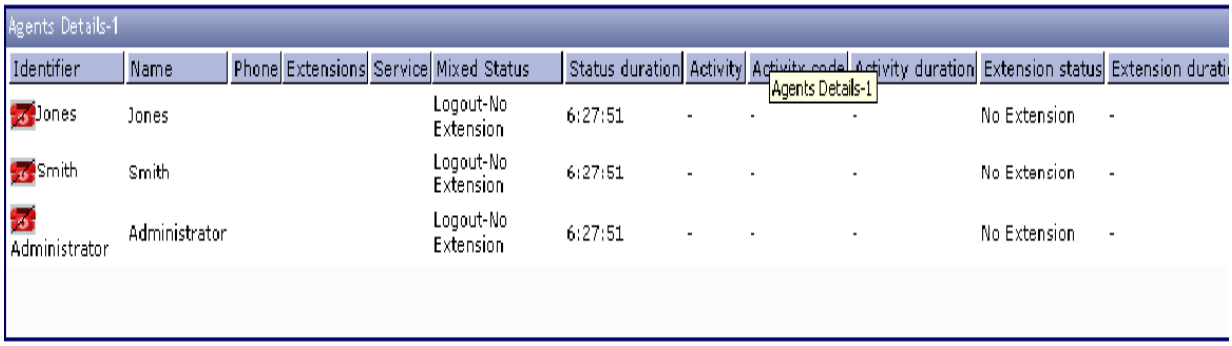


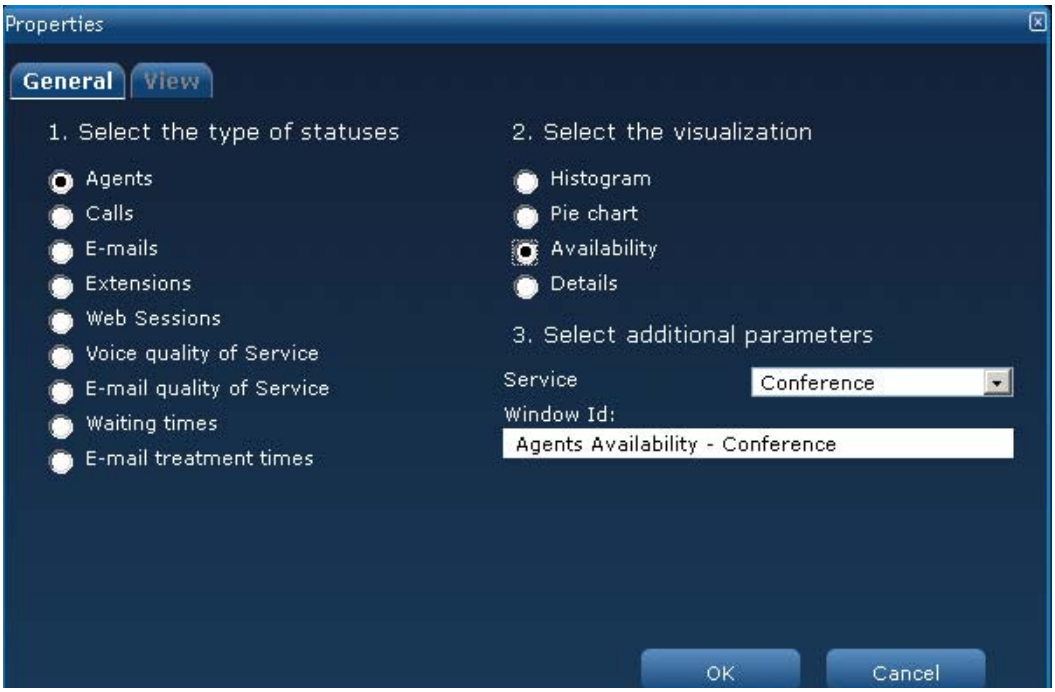
Figure 10.115 "AGENT DETAILS" IN "DETAILS" MODE



C : <u>"Agent supervision": agent availability</u>

Click the ***[Add a status display window]***  button, located in the **"Agent supervision"** window / frame toolbar, to create a new supervision window. The **"Properties"** window appears.

Figure 10.116 PROPERTIES WINDOW FOR DISPLAYING AGENT AVAILABILITY



The **"Agent availability"** display window is configured in 5 steps (spread over 2 tabs):

Click the {General} tab.

(1) Select the ***[Agent]*** option in Section 1 {Select status type}.

(2) Select the ***[Availability]*** option in Section 2 **{Select display type}**.

(3) In Section 3 **{Display additional parameters}**:

-Select a **"Service"** from the drop-down list.

-The ***{Window identifier}*** parameter is provided automatically, but it can be changed freely. The only constraint is that it cannot be duplicated (or else you will receive a warning, and you must then change it to be able to continue creating the display window).

Note: *Remark: the {Window identifier} parameter is also the name that will be displayed in the title bar of the new display window.*

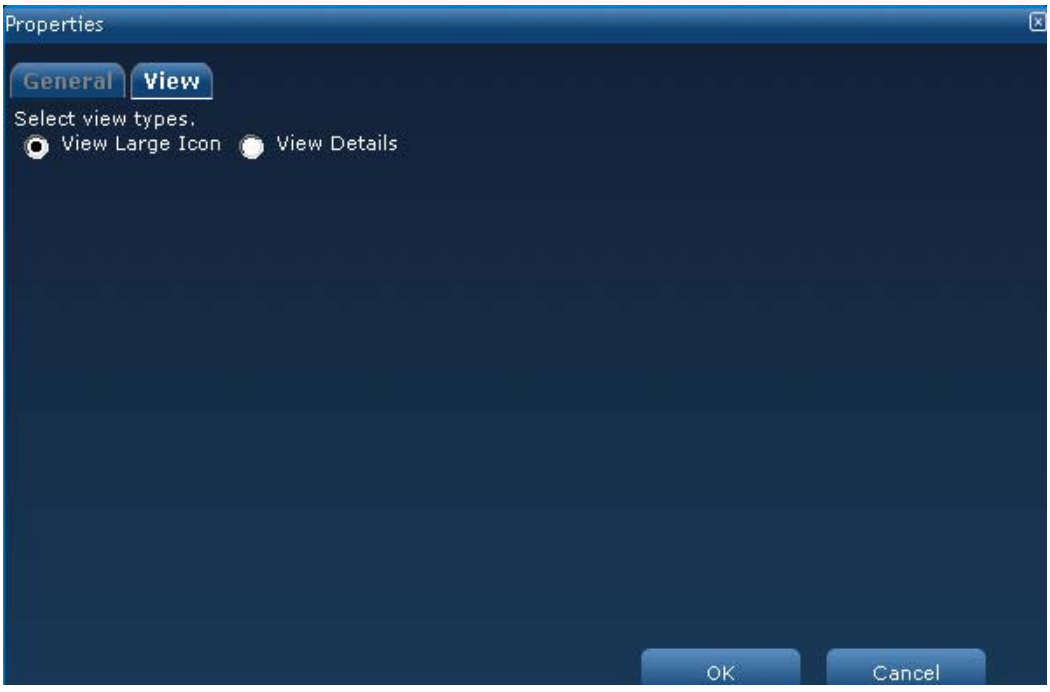
Click the {Display} tab.

(4) Select the desired display mode:

-If you select ***[Display large icons]***, the agents will be represented by an icon with their name.

-If you select ***[Display details],*** the agents' details will be displayed on a table with the fields ***{Identifier}, {Agent name} and {Availability}***.

Figure 10.117 "DISPLAY" TAB OF THE PROPERTIES WINDOW



(5) Click ***[Validate]*** to add the display window. This action will automatically close the **"Properties"** window.

Note: *Otherwise, click **[Cancel]** if you do not wish to back up anything, and close the **"Properties"** window.*

Figure 10.118 "AGENT AVAILABILITY" IN "LARGE ICONS" MODE

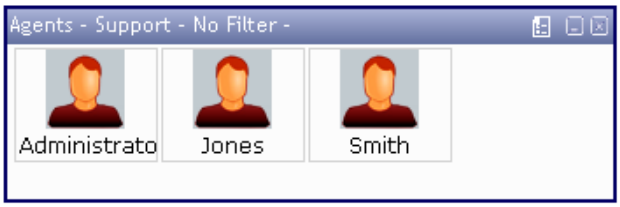
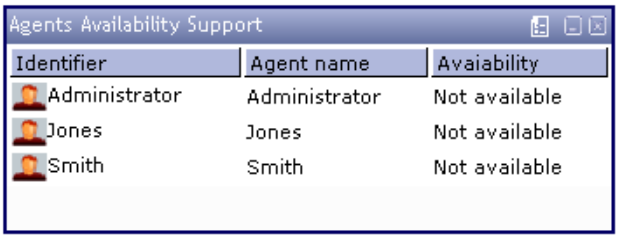


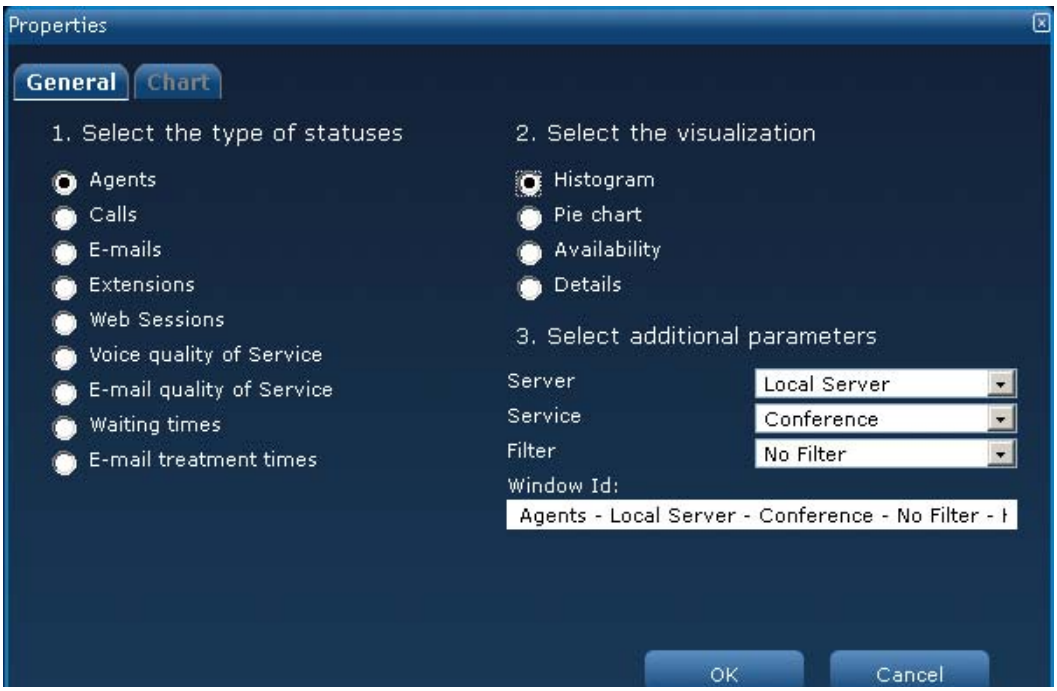
Figure 10.119 "AGENT AVAILABILITY" IN "DETAILS" MODE



D : <u>"Agent supervision": Agent histogram and pie chart</u>

Click the ***[Add a status display window]***  button, located in the **"Agent supervision"** application toolbar, to create a new supervision window. The **"Properties"** window appears.

Figure 10.120 "PROPERTIES" WINDOW, GENERAL TAB



A new **"Agent status"** display window is configured in a histogram or pie chart in 5 steps (spread over 2 tabs):

Click the {General} tab.

(1) Select the ***[Agent]*** option in Section 1 **{Select status type}**.

(2) 2.Select the ***[Histogram]*** or ***[Pie chart]*** option in Section 2 **{Select display type}**.

(3) 3.In Section 3 **{Display additional parameters}**:

- Select a service and a filter on the corresponding drop-down lists.
- The ***{Window identifier}*** parameter is provided automatically, but it can be changed freely. The only constraint is that it cannot be duplicated (or else you will receive a warning, and you must then change it to be able to continue creating the display window).

Note: *the* **{Window identifier}** *parameter is also the name that will be displayed in the title bar of the new display window.*

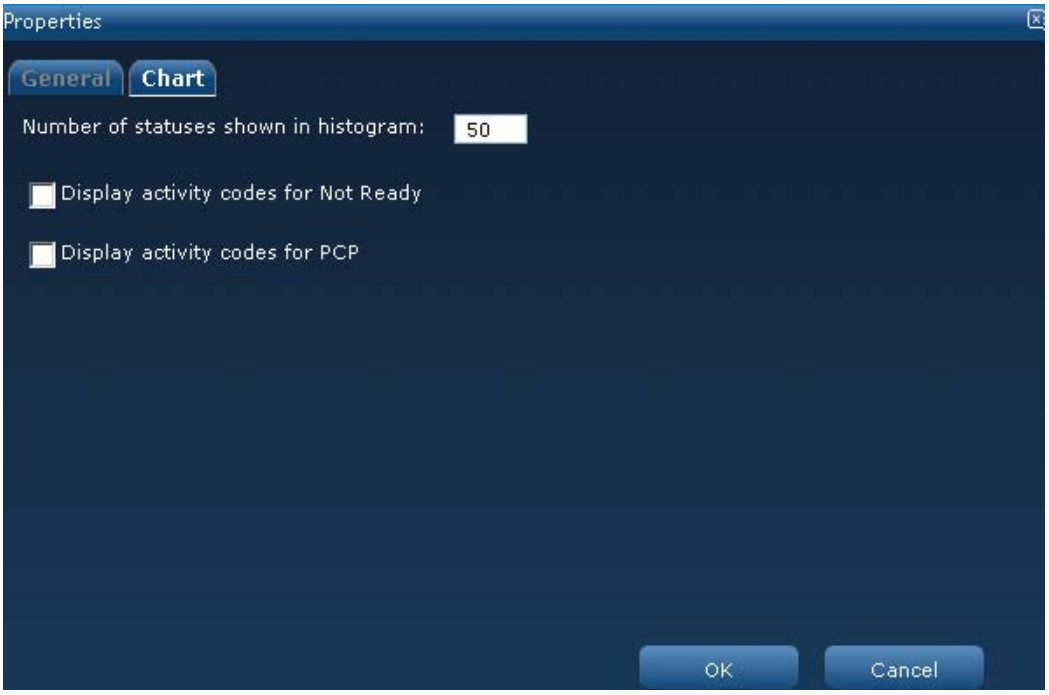
Click the {Graph} tab.

(4) The default value of the parameter ***{Number of statuses seen in the histogram}*** is 50, but you can change this value (this function is only available for histograms). You can choose to see only the activity codes for "Not ready" or "PCP", by ticking the corresponding boxes (these parameters are optional).

(5) Click ***[Validate]*** to add the display window. This action will automatically close the **"Properties"** window and open the new display window showing the histogram or pie chart based on the choice made in step 2.

Note: *Otherwise, click* ***[Cancel]*** *if you do not wish to back up anything, and close the* ***"Properties"*** *window.*

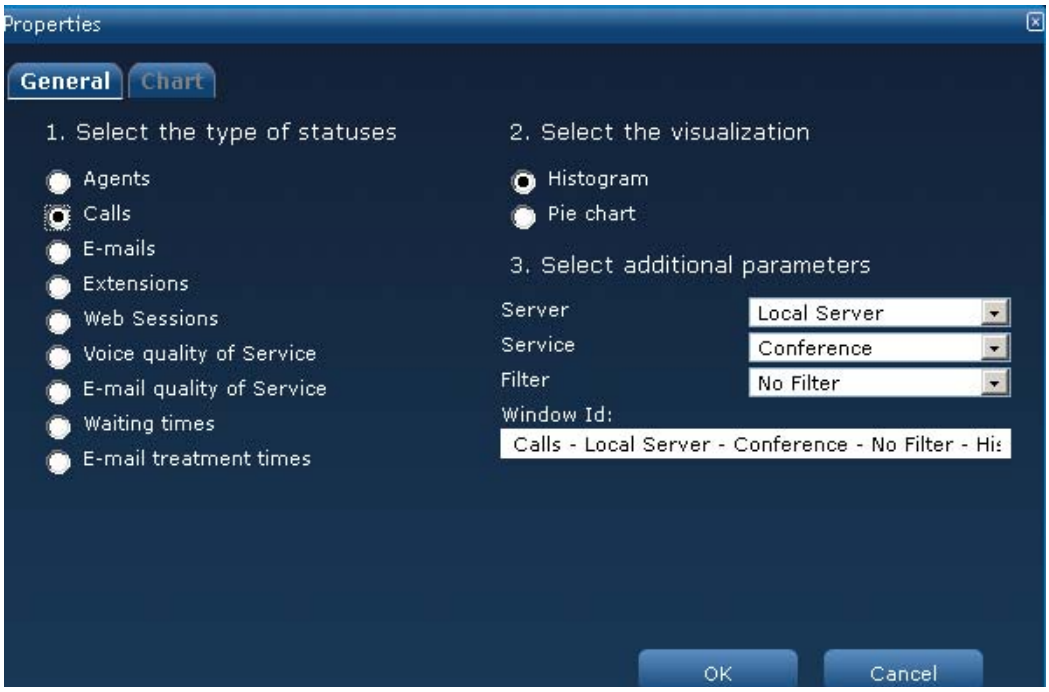
Figure 10.121 GRAPH TAB



E : <u>"Agent supervision": Call histogram and pie chart</u>

Click the ***[Add a status display window]***  button, located in the **"Agent supervision"** application toolbar, to create a new supervision window. The **"Properties"** window appears.

Figure 10.122 "PROPERTIES" WINDOW



A new "Call status" display window is configured in a histogram or pie chart in 5 steps (spread over 2 tabs):

Click the {General} tab.

(1) Select the ***[Calls]*** option in Section 1 {Select status type}.

(2) 2.Select the ***[Histogram]*** or ***[Pie chart]*** option in Section 2 **{Select display type}**.

(3) In Section 3 **{Display additional parameters}**:

-Select a service and a filter on the corresponding drop-down lists.

-The ***{Window identifier}*** parameter is provided automatically, but it can be changed freely. The only constraint is that it cannot be duplicated (or else you will receive a warning, and you must then change it to be able to continue creating the display window).

Note: *the **{Window identifier}** parameter is also the name that will be displayed in the title bar of the new display window.*

Click the {Graph} tab.

Note: the {Graph} tab and step 4 are only available if you have chosen the [Histogram] option in step 2.

(4) The default value of the parameter ***{Number of statuses seen in the histogram}*** is 50, but you can change this value (this function is only available for histograms).

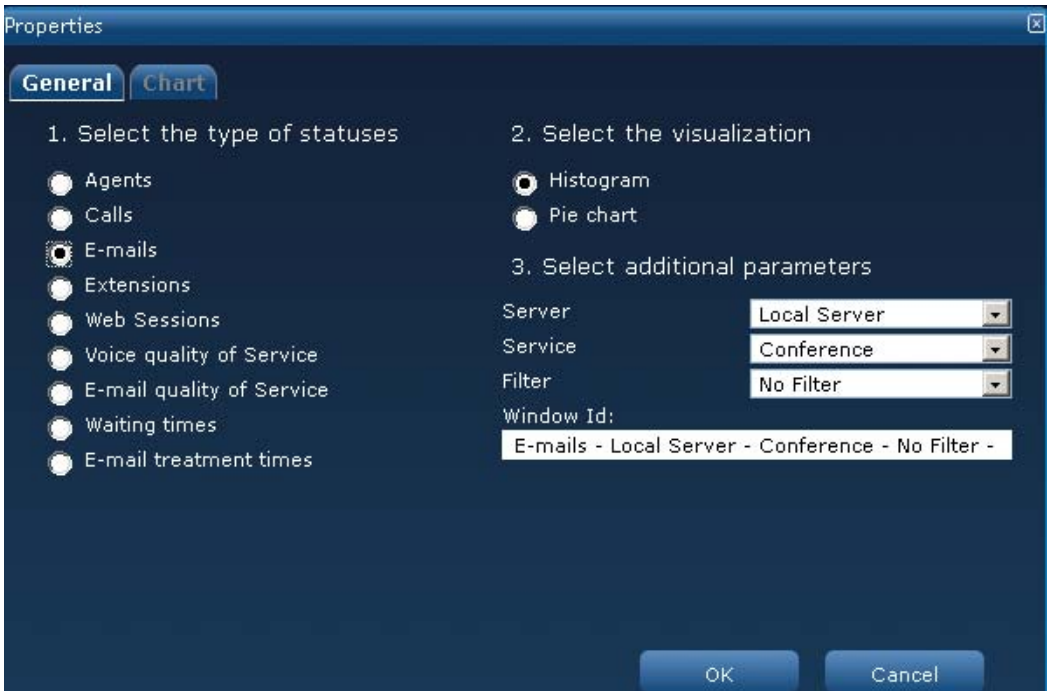
(5) Click ***[Validate]*** to add the display window. This action will automatically close the **"Properties"** window and open the new display window showing the histogram or pie chart based on the choice made in step 2.

Note: *Otherwise, click [Cancel] if you do not wish to back up anything, and close the "Properties" window.*

F : <u>"Agent supervision": E-mail histogram and pie chart</u>

Click the ***[Add a status display window]***  button, located in the "Agent supervision" application toolbar, to create a new supervision window. The "Properties" window appears.

Figure 10.123 PROPERTIES WINDOW, “GENERAL” TAB



A new **“E-mail status”** display window is configured in a histogram or pie chart in 5 steps (spread over 2 tabs):

Click the {General} tab.

(1) Select the ***[E-mails]*** option in Section 1 **{Select status type}**.

(2) Select the ***[Histogram]*** or ***[Pie chart]*** option in Section 2 **{Select display type}**.

(3) In Section 3 **{Display additional parameters}**:

-Select a service and a filter on the corresponding drop-down lists.

-The ***{Window identifier}*** parameter is provided automatically, but it can be changed freely. The only constraint is that it cannot be duplicated (or else you will receive a warning, and you must then change it to be able to continue creating the display window).

Note: *the **{Window identifier}** parameter is also the name that will be displayed in the title bar of the new display window.*

Click the {Graph} tab.

Note: the {Graph} tab and step 4 are only available if you have chosen the [Histogram] option in step 2.

(4) The default value of the parameter ***{Number of statuses seen in the histogram}*** is 50, but you can change this value (this function is only available for histograms).

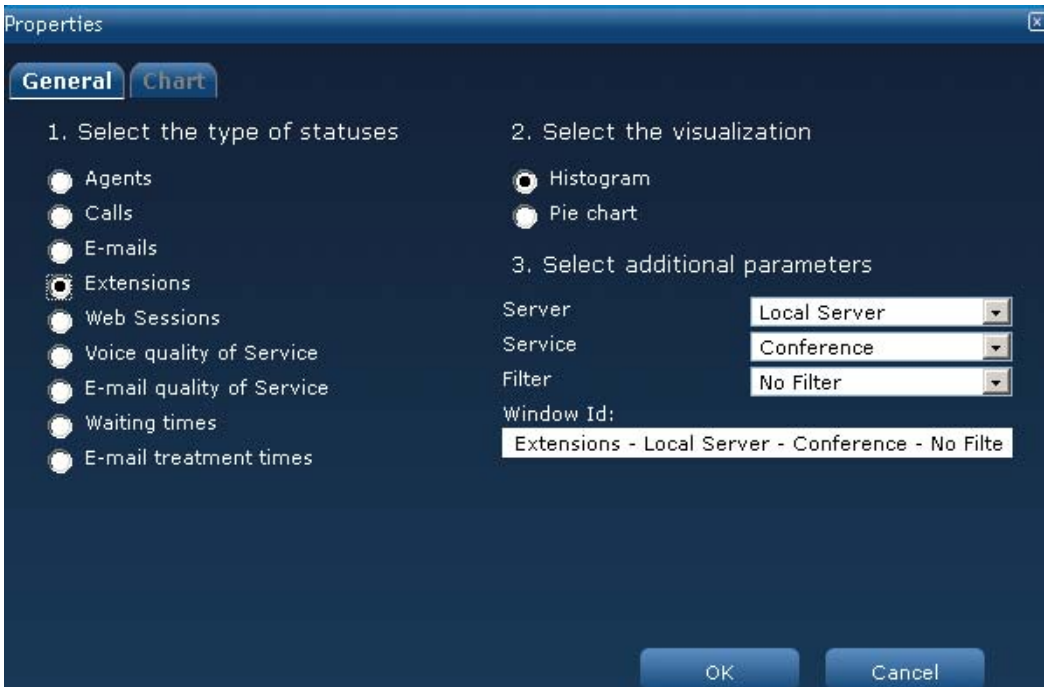
(5) Click ***[Validate]*** to add the display window. This action will automatically close the **“Properties”** window and open the new display window showing the histogram or pie chart based on the choice made in step 2.

Note: *Otherwise, click **[Cancel]** if you do not wish to back up anything, and close the **“Properties”** window.*

G : “Agent supervision”: Extension histogram and pie chart

Click the ***[Add a status display window]***  button, located in the **“Agent supervision”** application toolbar, to create a new supervision window. The Properties window appears.

Figure 10.124 "PROPERTIES" WINDOW, "GENERAL" TAB



A new "Extension status" display window is configured in a histogram or pie chart in 5 steps (spread over 2 tabs):

Click the {General} tab.

(1) Select the ***[Extensions]*** option in Section 1 **{Select status type}**.

(2) Select the ***[Histogram]*** or ***[Pie chart]*** option in Section 2 **{Select display type}**.

(3) In Section 3 **{Display additional parameters}**:

-Select a service and a filter on the corresponding drop-down lists.

-The ***{Window identifier}*** parameter is provided automatically, but it can be changed freely. The only constraint is that it cannot be duplicated (or else you will receive a warning, and you must then change it to be able to continue creating the display window).

Note: *the **{Window identifier}** parameter is also the name that will be displayed in the title bar of the new display window.*

Click the {Graph} tab.

Note: the {Graph} tab and step 4 are only available if you have chosen the [Histogram] option in step 2.

(4) The default value of the parameter ***{Number of statuses seen in the histogram}*** is 50, but you can change this value (this function is only available for histograms).

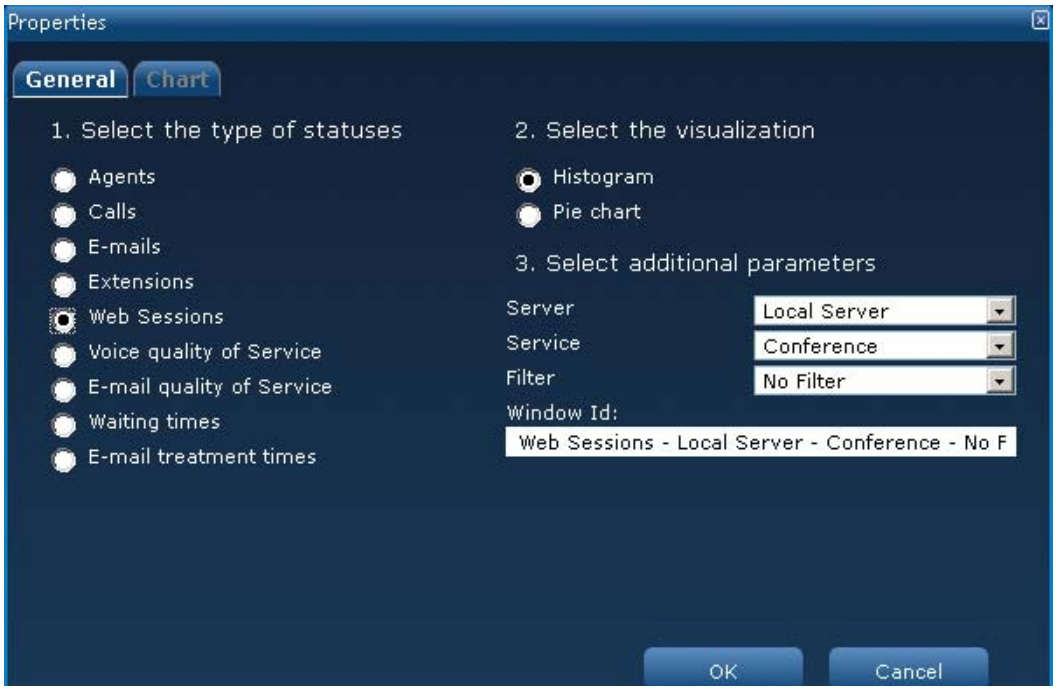
(5) Click ***[Validate]*** to add the display window. This action will automatically close the **"Properties"** window and open the new display window showing the histogram or pie chart based on the choice made in step 2.

Note: *Otherwise, click **[Cancel]** if you do not wish to back up anything, and close the "Properties" window.*

H : <u>"Agent supervision": Web Sessions histogram and pie chart</u>

Click the ***[Add a status display window]***  button, located in the **"Agent supervision"** application toolbar, to create a new supervision window. The Properties window appears.

Figure 10.125 PROPERTIES WINDOW: GENERAL TAB



A new **"Web sessions"** status display window is configured in a histogram or pie chart in 5 steps (spread over 2 tabs):

Click the {General} tab.

(1) Select the ***[Web session]*** option in Section 1 **{Select status type}**.

(2) Select the ***[Histogram]*** or ***[Pie chart]*** option in Section 2 **{Select display type}**.

(3) In Section 3 **{Display additional parameters}**:

-Select a service and a filter on the corresponding drop-down lists.

-The ***{Window identifier}*** parameter is provided automatically, but it can be changed freely. The only constraint is that it cannot be duplicated (or else you will receive a warning, and you must then change it to be able to continue creating the display window).

Note: *the **{Window identifier}** parameter is also the name that will be displayed in the title bar of the new display window.*

Click the {Graph} tab.

Note: the {Graph} tab and step 4 are only available if you have chosen the [Histogram] option in step 2.

(4) The default value of the parameter ***{Number of statuses seen in the histogram}*** is 50, but you can change this value (this function is only available for histograms).

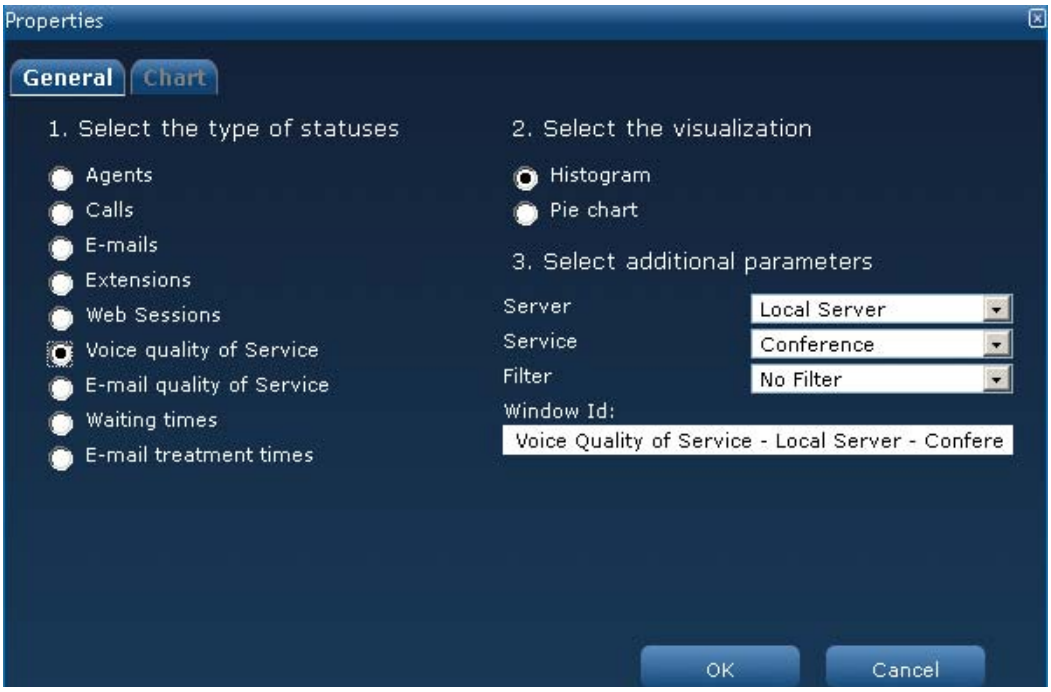
(5) Click ***[Validate]*** to add the display window. This action will automatically close the **"Properties"** window and open the new display window showing the histogram or pie chart based on the choice made in step 2.

(6) Otherwise, click **[Cancel]** if you do not wish to back up anything, and close the **"Properties"** window.

I : "Agent supervision": Quality of service histogram or pie chart

Click the ***[Add a status display window]***  button, located in the **"Agent supervision"** application toolbar, to create a new supervision window. The Properties window appears.

Figure 10.126 “PROPERTIES” WINDOW



A new **“Quality of service status”** display window is configured in a histogram or pie chart in 5 steps (spread over 2 tabs):

Click the {General} tab.

(1) Select the ***[Quality of service]*** option in Section 1 **{Select status type}**.

(2) Select the ***[Histogram]*** or ***[Pie chart]*** option in Section 2 **{Select display type}**.

(3) In Section 3 **{Display additional parameters}**:

-Select a service and a filter on the corresponding drop-down lists.

-The **{Window identifier}** parameter is provided automatically, but it can be changed freely. The only constraint is that it cannot be duplicated (or else you will receive a warning, and you must then change it to be able to continue creating the display window).

Note: *the **{Window identifier}** parameter is also the name that will be displayed in the title bar of the new display window.*

Click the {Graph} tab.

Note: the {Graph} tab and step 4 are only available if you have chosen the [Histogram] option in step 2.

(4) The default value of the parameter ***{Number of statuses seen in the histogram}*** is 50, but you can change this value (this function is only available for histograms).

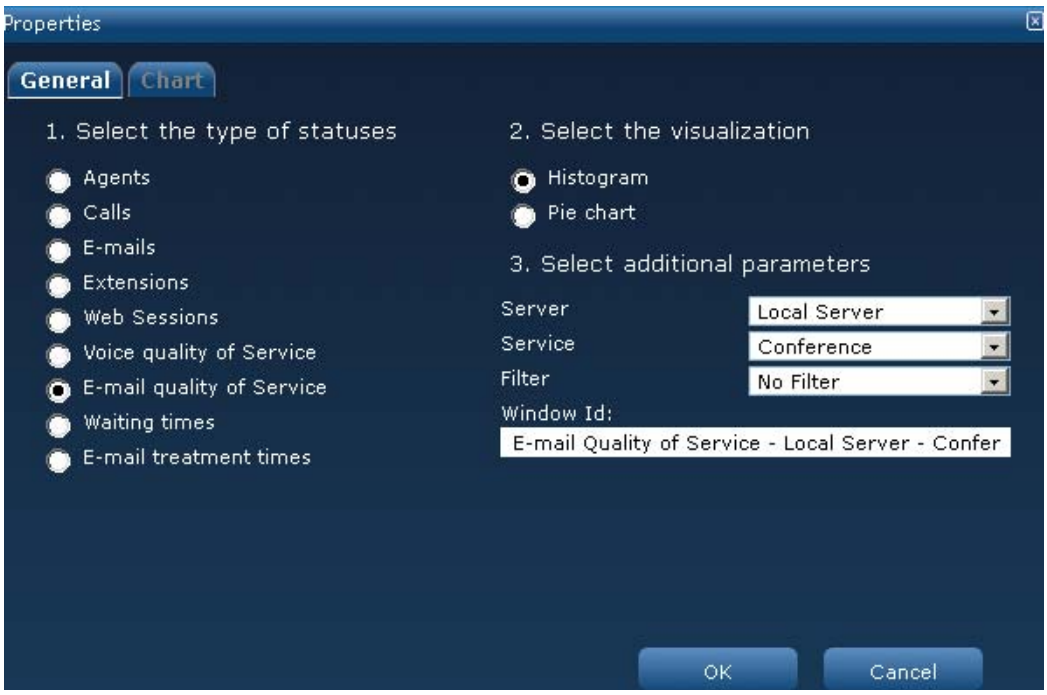
(5) Click ***[Validate]*** to add the display window. This action will automatically close the “Properties” window and open the new display window showing the histogram or pie chart based on the choice made in step 2.

Note: *Otherwise, click **[Cancel]** if you do not wish to back up anything, and close the “Properties” window.*

J : “Agent supervision”: Quality of service histogram and pie chart for e-mails

Click the ***[Add a status display window]***  button, located in the “Agent supervision” window / frame toolbar, to create a new supervision window. The Properties window appears.

Figure 10.127 "PROPERTIES" WINDOW



A new **"Quality of service for e-mails"** status display window is configured in a histogram or pie chart in 5 steps (spread over 2 tabs):

Click the {General} tab.

(1) Select the ***[Quality of service for e-mails]*** option in Section 1 **{Select status type}**.

(2) Select the ***[Histogram]*** or ***[Pie chart]*** option in Section 2 **{Select display type}**.

(3) In Section 3 **{Display additional parameters}**:

-Select a service and a filter on the corresponding drop-down lists.

-The ***{Window identifier}*** parameter is provided automatically, but it can be changed freely. The only constraint is that it cannot be duplicated (or else you will receive a warning, and you must then change it to be able to continue creating the display window).

Note: *the **{Window identifier}** parameter is also the name that will be displayed in the title bar of the new display window.*

Click the {Graph} tab.

Note: the {Graph} tab and step 4 are only available if you have chosen the [Histogram] option in step 2.

(4) The default value of the parameter ***{Number of statuses seen in the histogram}*** is 50, but you can change this value (this function is only available for histograms).

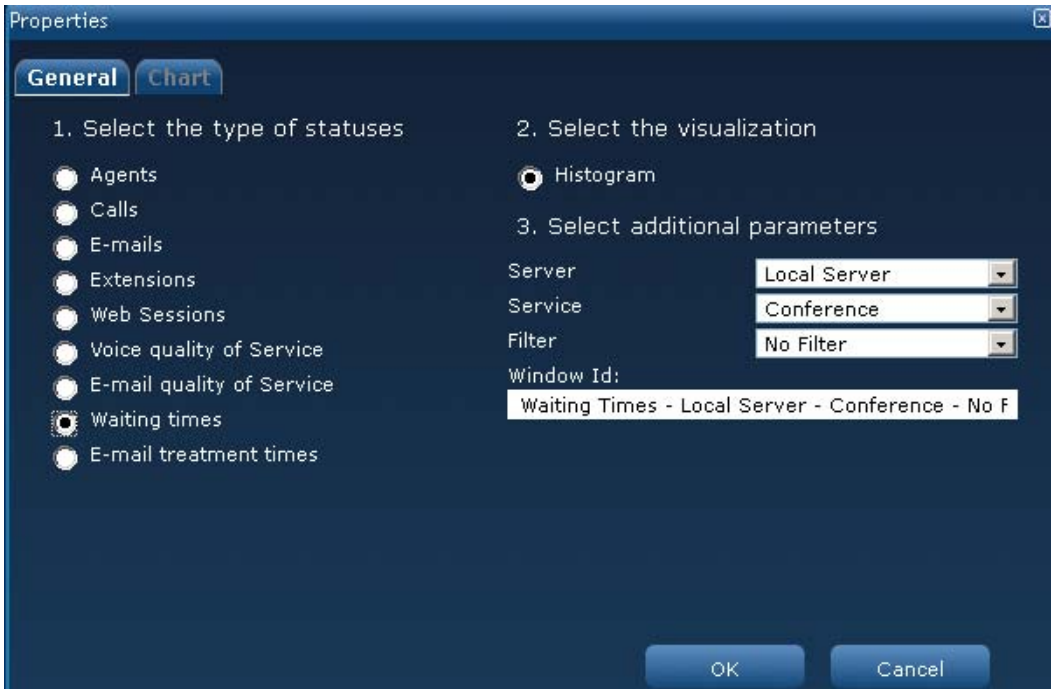
(5) Click ***[Validate]*** to add the display window. This action will automatically close the "Properties" window and open the new display window showing the histogram or pie chart based on the choice made in step 2.

Note: *Otherwise, click **[Cancel]** if you do not wish to back up anything, and close the "Properties" window.*

K : "Agent supervision": Waiting time histogram

Click the ***[Add a status display window]***  button, located in the "Agent supervision" application toolbar, to create a new supervision window. The Properties window appears.

Figure 10.128 "PROPERTIES" WINDOW



A new **"Waiting time status"** display window is configured in a histogram or pie chart in 5 steps (spread over 2 tabs):

Click the {General} tab.

(1) Select the ***[Waiting time]*** option in Section 1 **{Select status type}**.

(2) Select the ***[Histogram]*** option in Section 2 **{Select display type}**.

(3) In Section 3 **{Display additional parameters}**:

-Select a service and a filter on the corresponding drop-down lists.

-The ***{Window identifier}*** parameter is provided automatically, but it can be changed freely. The only constraint is that it cannot be duplicated (or else you will receive a warning, and you must then change it to be able to continue creating the display window).

Note: *the **{Window identifier}** parameter is also the name that will be displayed in the title bar of the new display window.*

Click the {Graph} tab.

(4) The default value of the parameter ***{Number of statuses seen in the histogram}*** is 50, but you can change this value (this function is only available for histograms).

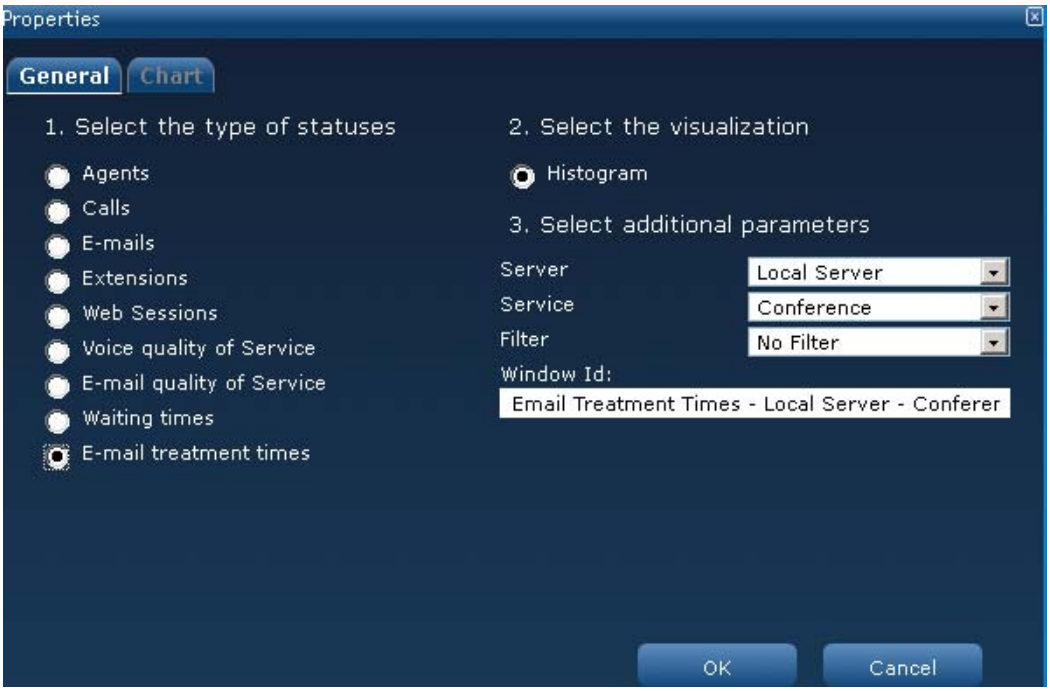
(5) Click ***[Validate]*** to add the display window. This action will automatically close the **"Properties"** window and open the new histogram display window.

Note: *Otherwise, click **[Cancel]** if you do not wish to back up anything, and close the "Properties" window.*

L : "Agent supervision": E-mail processing time histogram

Click the ***[Add a status display window]***  button, located in the **"Agent supervision"** application toolbar, to create a new supervision window. The Properties window appears.

Figure 10.129 “PROPERTIES” WINDOW, “GENERAL” TAB



A new **“E-mail processing time status”** display window is configured in a histogram or pie chart in 5 steps (spread over 2 tabs):

Click the {General} tab.

(1) Select the ***[E-mail processing time]*** option in Section 1 **{Select status type}**.

(2) Select the ***[Histogram]*** option in Section 2 **{Select display type}**.

(3) In Section 3 **{Display additional parameters}**:

-Select a service and a filter on the corresponding drop-down lists.

-The ***{Window identifier}*** parameter is provided automatically, but it can be changed freely. The only constraint is that it cannot be duplicated (or else you will receive a warning, and you must then change it to be able to continue creating the display window).

Note: *the {Window identifier} parameter is also the name that will be displayed in the title bar of the new display window.*

Click the {Graph} tab.

(4) The default value of the parameter ***{Number of statuses seen in the histogram}*** is 50, but you can change this value (this function is only available for histograms).

(5) Click ***[Validate]*** to add the display window. This action will automatically close the “Properties” window and open the new histogram display window.

Note: *Otherwise, click **[Cancel]** if you do not wish to back up anything, and close the “Properties” window.*

U-970 : USING THE WEB APPLICATION “CRM RECORD”

OBJECTIVE

- Using CRM records for professional calls and e-mails.

OPERATOR LEVEL

- Agent

TOOL(S)

- PC running with Internet Explorer 6.0, for access to the M5000 CC Portal site.

PRELIMINARY OPERATION(S)

- Start the M5000 CC Portal (see Sheet C-900).

PROCEDURE

- The purpose of the **CRM record** function is to display the CRM record for an (incoming/outgoing) phone call or professional e-mail. This function may be configured to be launched in the portal window or from external windows. (see Sheet U-900).

The detailed procedures for this function are explained in Sheet U-920, in the section **CRM record**.

U-980USING THE USER PROFILES WEB APPLICATION

OBJECTIVE

- Selecting for every services, its user profile

OPERATOR LEVEL

- Agent

TOOL(S)

- PC running with Internet Explorer, for access to the M5000 CC Portal site.

PRELIMINARY OPERATION(S)

- Start the M5000 CC Portal (see Sheet C-900).

PROCEDURE

The "User Profiles" application starts in one of the configurable frames (see Sheet U-900) on the portal or in a new window. This application appears in portal only if agent receives the right to use it.

Figure 10.130 "USER PROFILES APPLICATION

This application allows agent to select for every service he is a member, its user profile for the service. The user profile defines the skill level, the languages knowledge and the tema membership of the agent for the service. Therefore, it determines the incoming and outgoing call and the mails that the agent will handle. By modifying its user profiles, the agent can decide the calls and mails category it will handle.

To select its user profile, the agent must select a user profile in the drop down list box and it must then click on Set button..

The drop down list box contain an empty entry that corresponds to a special user profiles: the agent has the skill levels, the languages knowledge and the team membership as personnaly defined by the service manager.

The refresh button allows to refresh the services and user profiles available. it is usefull when service manager disable user profile

U-990USING THE SERVICE MANAGER WEB APPLICATION

OBJECTIVE

The web application "**Service Manager**" allows a user with rights to manage services or teams to perform administrative operations on the production version of services which it is responsible.

This application provides access to the following features:

- **Operations on agent profiles:**
  - Change the skill levels, language levels and the belonging to the teams of a profile
  - Change "Selectable" state of a profile

- **Operations on agents**
  - Change the skill levels, language levels and the belonging to the teams of one or more agents
  - Change assignment status of one or more agents
  - Change the default profile to one or more agents
  - Change the selected profile to one or more agents
  - Enable / disable recording of one or more agents
  - Add / Remove a user in the service
  - Add / Remove in the service an existing agent from another service

- **Operations on teams**
  - Add / Remove a team

- **Operations on personal messages**
  - Send a personal message immediately
  - Add / edit / delete a scheduled message

OPERATOR LEVEL

- Service Manager, Team Manager or Team Supervisor.

TOOL(S)

- PC running with Internet Explorer, for access to the M5000 CC Portal site.

PRELIMINARY OPERATION(S)

- Start the M5000 CC Portal (see Sheet C-900).

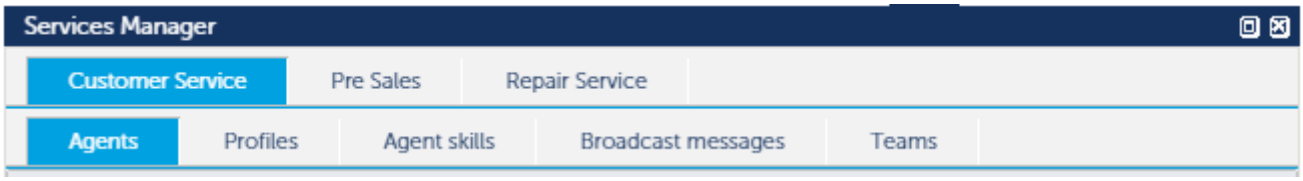
PROCEDURE

.Overview of the user interface

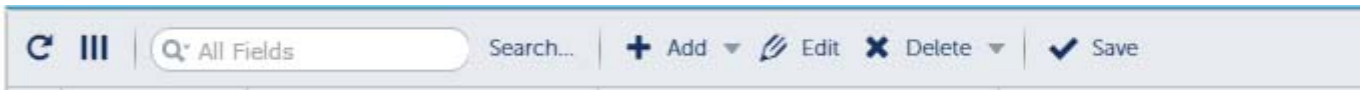
The user interface of the "**Service Manager**" application is composed of two bars of tabs above an interactive grid.

The first tabs bar allows selecting a service among the services which the user is a manager or which contains at least one team of which the user is a manager:

The second tabs bar allows selecting the kind of data to display in the interactive grid. For each service, you can display one of the following kinds of data: "**Agents**", "**Profiles**", "**Agent skills**" "**Broadcast messages**" and "**Teams**".



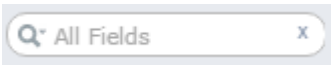
8 The tools bar



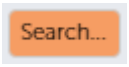
The data grid is topped with a toolbar that contains, according to the authorized features, interactive controls from the following:


Reload data from the server


Set Visible Columns



Performs filtering records: only those in which at least one field contains the input character string are displayed

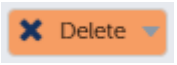


Performs a multi-criteria filtering of records


Cancels the current filtering

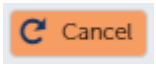
Adds a record

Opens a dialog box that lets you change the properties of the selected record

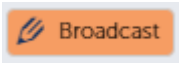


Calls for the removal of the selected records

Validates changes done in the cells of the grid



Cancels changes in the cells of the grid

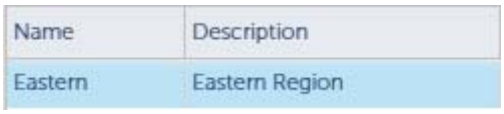


Sends an immediate personal message

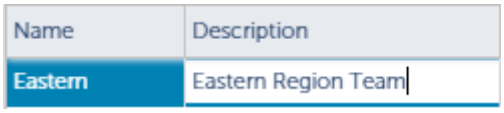
9 Direct editing in the grid cells

You can change the value of the editable fields of a record directly from the corresponding cell of the table.

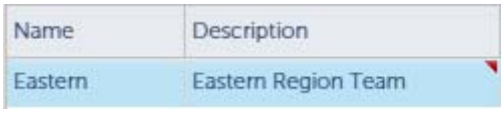
Alphanumeric field:



- Perform a double-click on the relevant field

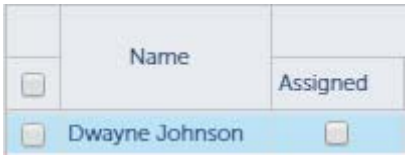


- Change the value

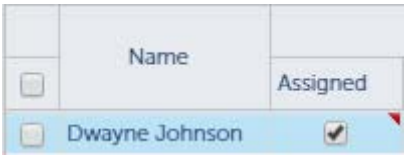


- The modified field is marked by red indicator in the top right

Boolean field:



- Click the check box to change the value



- The modified field is marked by a red indicator in the top right

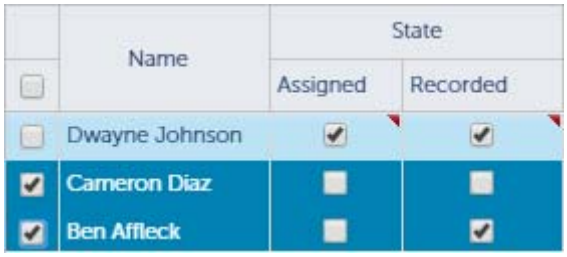
Similarly, we can access the modification of the value of a field whose type is "**List of Choice**" (Profiles), "**Multiple Choice**" (wall displays), "**Date**" and "**Time**" (messages programmed) by double clicking on the relevant cell.

One can thus carry out several modifications in different records. As long as the cells are marked by a red indicator in the top right corner, the changes are only temporary and can be reversed using the "**Cancel**" button in the toolbar. You must click the "**Save**" button in the toolbar to confirm the changes.

4 Bulk changes

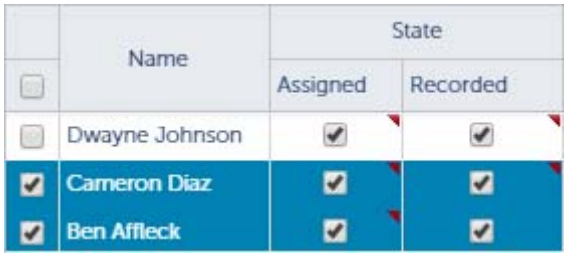
After modifying one or more fields of an entry, you can propagate these modifications to a set of other entries in the same table as follows:

- Perform one or more modifications to a record



- Select one or more other records

- Click the "**Name**" field of the modified record in order to display a popup menu.



- Click on the item "**Apply changes made on ...**" from the drop down menu to propagate the changes on the selected records

The changes will be effective after validation using the "**Save**" button in the toolbar.

The “bulk changes” feature is available only in tables "**Agents**" and "**Agent skills**"

5 The “Agents” grid

The features available from this grid are:

- Change assignment status of one or more agents
- Change the default profile to one or more agents
- Change the selected profile to one or more agents
- Enable / disable recording of one or more agents
- Add / Remove a user in the service
- Add / Remove in the service an existing agent from another service
- Change the following user properties: name, first name, password, account, recordable state.

NOTE: Skill levels, language levels and belonging to the teams displayed in this grid, result from the application of the default profile and the selected profile. They are not editable from this grid. To change skill levels, language levels and belonging to the teams, use one of the grids "**Profiles**" or "**Agent skills**".

6 The “Profiles” grid

The features available from this grid are:

- Change the skill levels, language levels and the belonging to the teams of a profile
- Change "Selectable" state of a profile

7 The “Agents skills” grid

The features available from this grid are:

- Change the skill levels, language levels and the belonging to the teams of one or more agents
- Change assignment status of one or more agents
- Enable / disable recording of one or more agents

8 The “Broadcast messages” grid

The features available from this grid are:

- Send a personal message immediately
- Add / edit / delete a programmed personal message

9 The “teams” grid

The features available from this grid are:

- Add / Remove a team
- Change the ‘Description’ attribute of an existing team

U-995USING THE SCRIPT SETTINGS WEB APPLICATION

OBJECTIVE

So to set parameters of service inside server, a new 'Scripts setting' application is included in Portal. Any users having Service Manager rights are able to change script behavior in real time with follows features linked to different profiles: Closed days, Opening Hours, PlayVoiceMessage node properties, Transfers node properties, Properties and Activities.

OPERATOR LEVEL

- Service Manager.

TOOL(S)

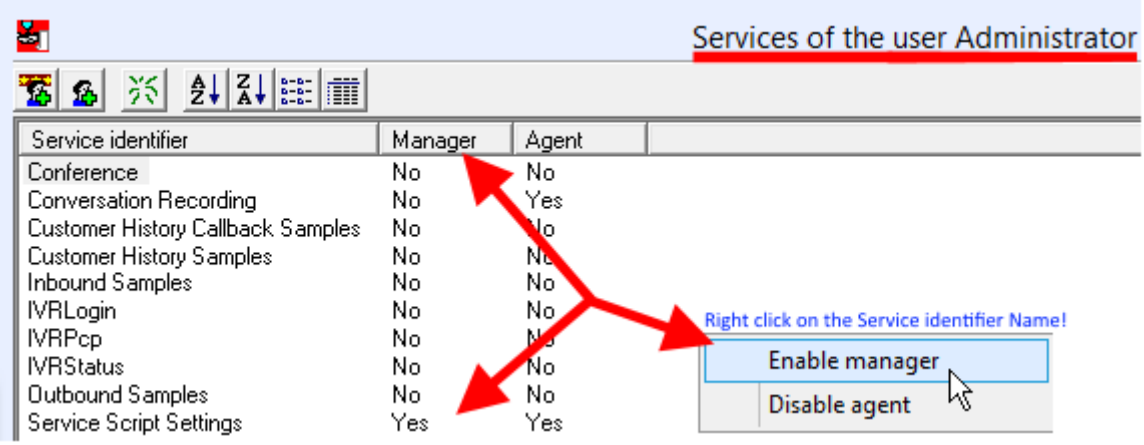
- PC running with Internet Explorer, for access to the M5000 CC Portal site.

PRELIMINARY OPERATION(S)

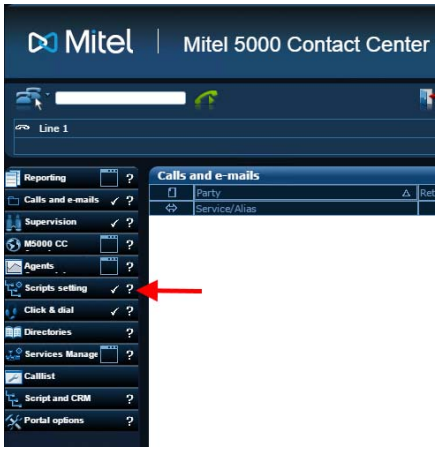
- Start the M5000 CC Portal (see Sheet C-900).

PROCEDURE

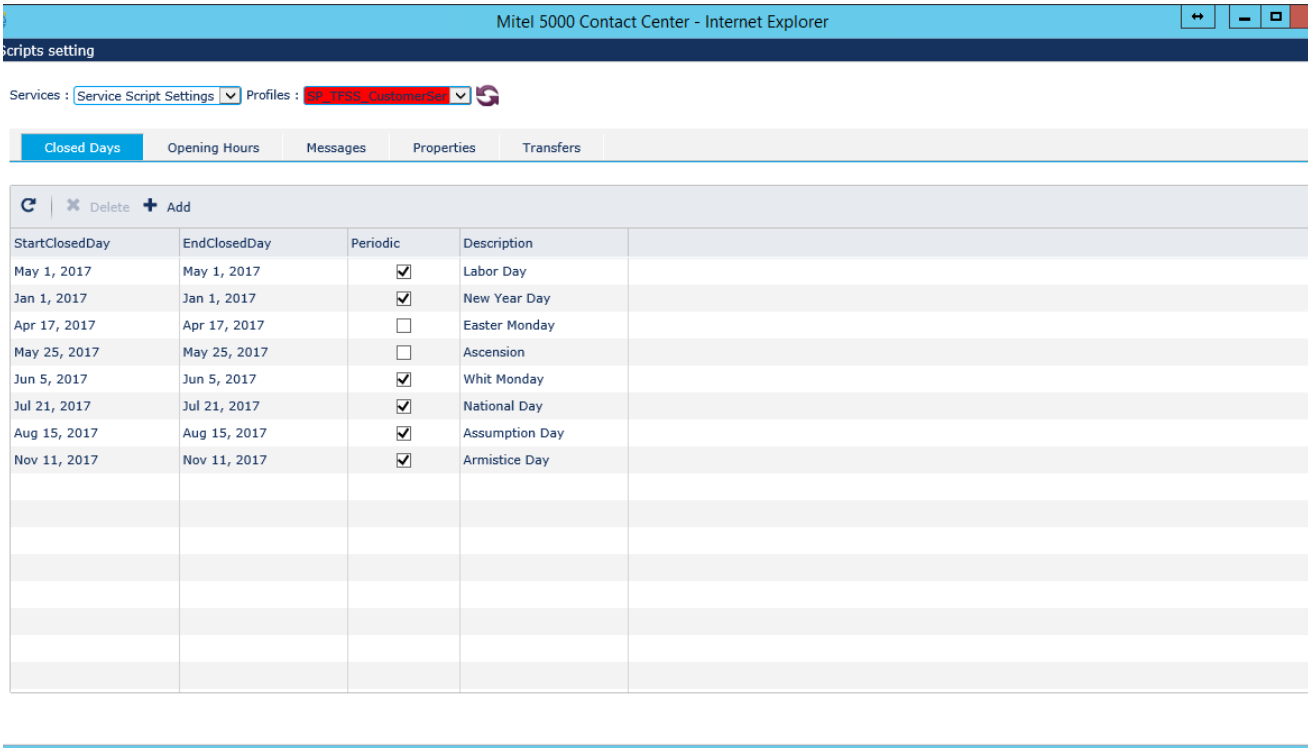
1° In the M5000 CC Administrator, menu "View\Users" select the user(s) which would manage the scripts settings and assign it the right "Manager"



2° The "Scripts setting" link in the application list (on the left frame) allows to launch the "Scripts setting" application inside the Portal  or in a single window  .



Start page in a single window

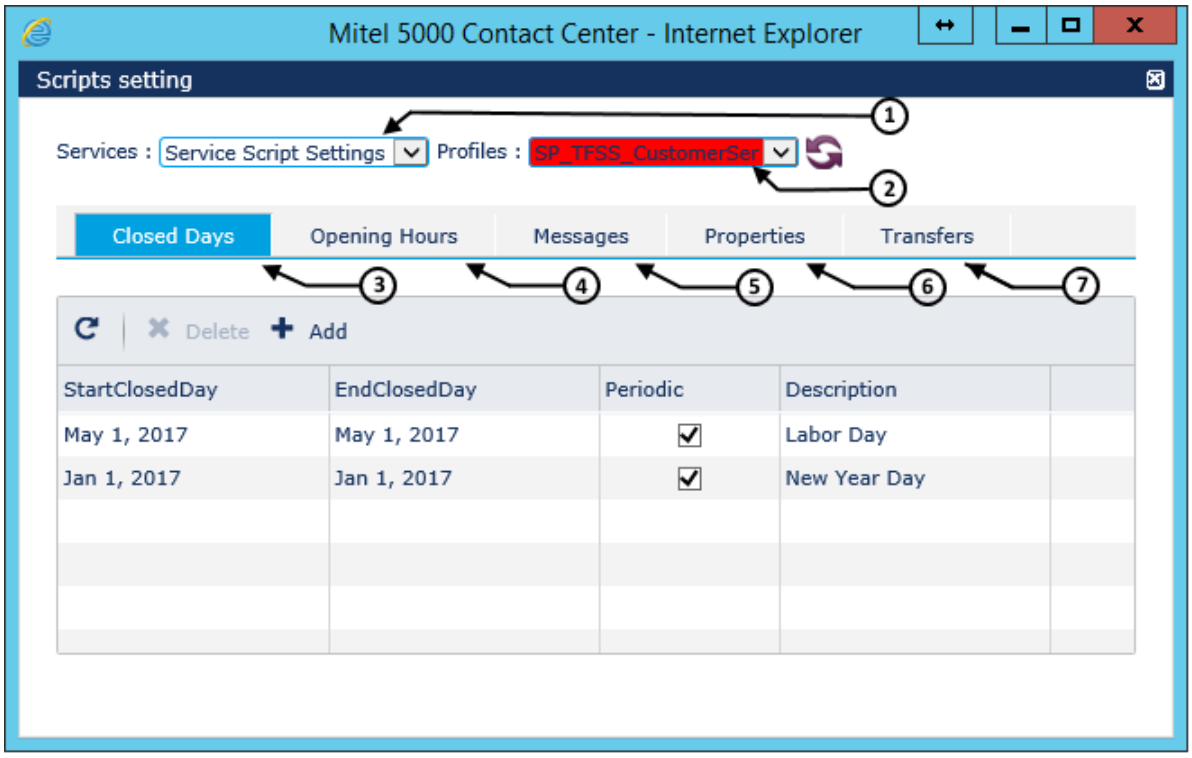


1 Mean features of “Scripts Settings” application

It allows to configure different features linked to a service/profile.

All script customization is associated to a Service / Profile pair, except the “Activities”.

The service manager chooses a service and profile through the ”Services” and “Profiles” list box.



3.1 LIST BOX

Allow to select the services that you want to manage.

3.2 LIST BOX

Allow to select the Profiles associated to the service you want manage.

Rem. To draw your attention, When the Default Profile is selected, its background is colored in RED.

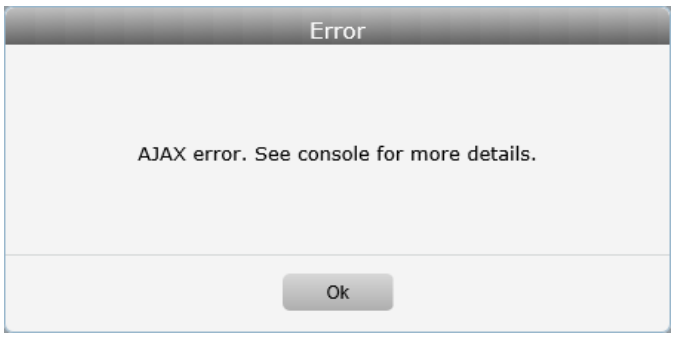
When a Services / Profiles pair is selected, it is possible to configure for this pair:

- Closed Days ➔ **3**
- Opening Hours ➔ **4**
- Messages ➔ **5**
- Properties ➔ **6**
- Transfers ➔ **7**

“Activities” are linked only to a “Services”, to be able to configure “Activities” you must select a service in the list box "Services" and set the “Profiles” list box to “no profile”.

 This button allows you to refresh the contents of the choice in the "Services" and "Profiles" list (consequent to the addition of a service through the "M5000 CC Administrator" application or a profile through the "M5000 CC Service Manager".

If the following window appears when editing or adding a record:

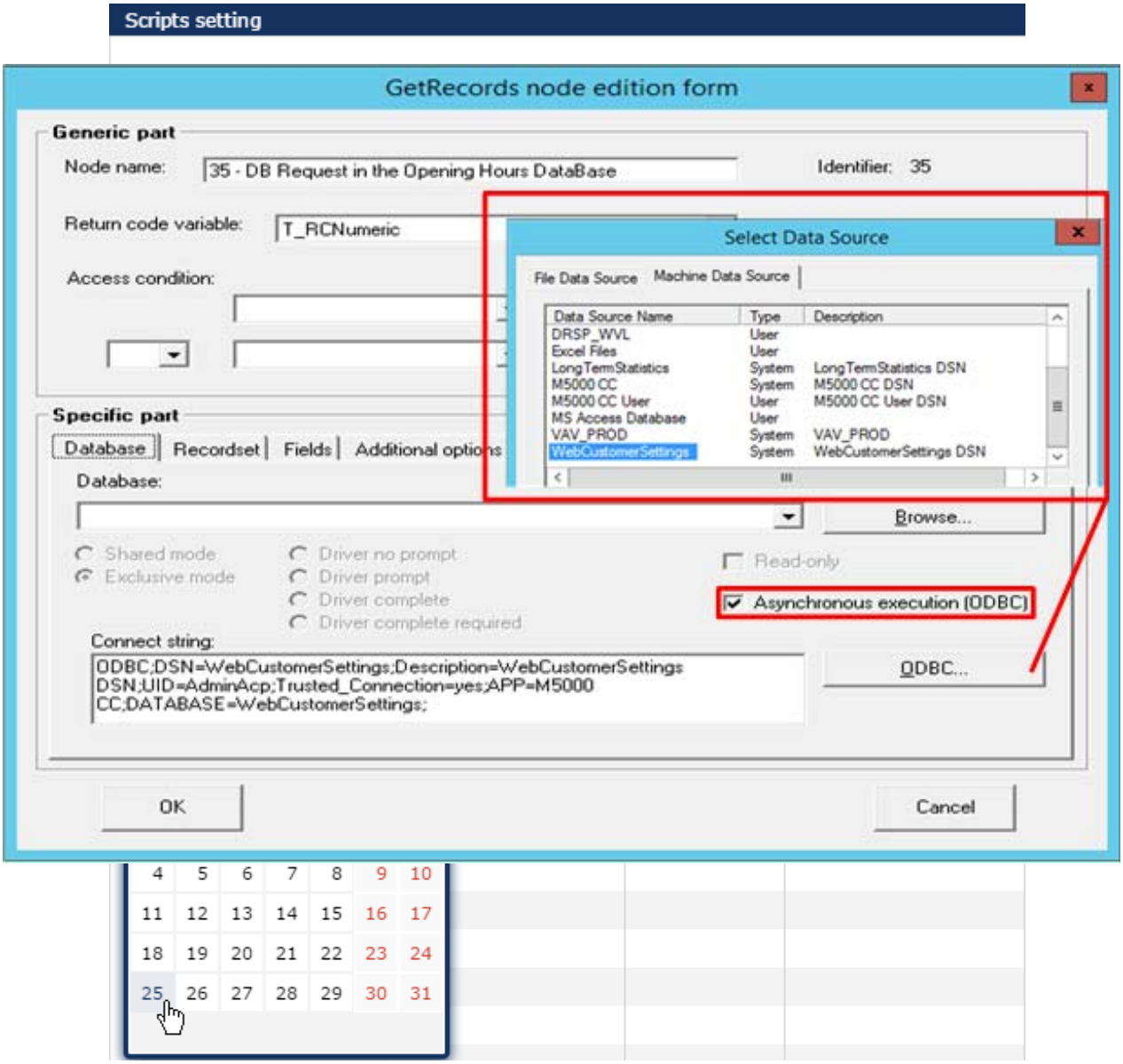


This means that the page has remained open without interaction for a long time.
To be able to interact again from the page, it must be refreshed.

2 Functions details

2.1 - Function Closed Days

The purpose of the "Closed Days" is to define the usual closing days.

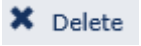


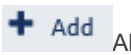
User can register new closed days ranges (from one to several days). You can do it either with calendar box or either directly by typing the date in the format “mm/dd/yyyy” (with “mm” for the month, “dd” for the day and “yyyy” for the year).

“Description” field, allow you to comment an entry.

If “Periodic” checkbox is selected, the range is repeated every year.

 Allow to reload Data in the list.

 Allow to delete a selected entry in the list.

 Allow to add a new entry in the list

 Allow to save one or more new records at a time.

 The arrow in the title bar lets you sort entries.

2.1.1 - Integration in the script

Create a ”local” or ”User variables” of type Numeric in order to save the number of records found in the DataBase. Ex. ”Number_of_holidays_found”.

An ODBC request is executed to read if the opened period is active. The stored procedure is named ”ReadClosedDaysByProfilID”

Add a ”GetRecords” node to query out the database with the following settings:

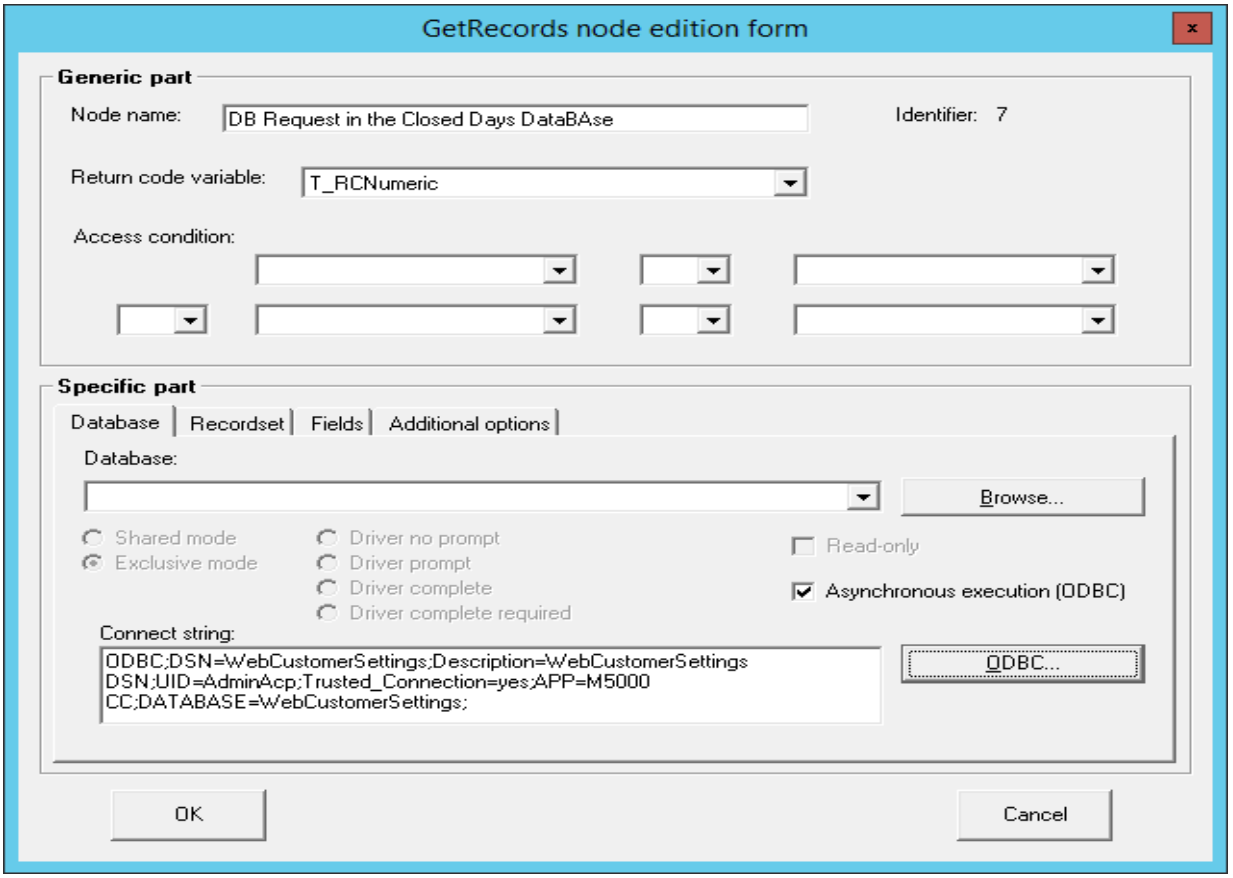
1° Specific part {Database tab}:

Check the box ”Asynchronous execution (ODBC)” in order to not hangs calls in the media server if there is no response on the request of the database.

In the {Connect string} text box, enter the connection string needed to open the database. You may also click on the [ODBC...] button and use the dialog box that opens.

Select the ”WebCustomerSettings” Data Source from the Data Source Name list that is located in: Machine Data Source, User Data Sourse or System Data Source, depending of the installation (This Data Source is installed by the M5000 CC setup).

Note: All the script nodes are run on the Media Server machine, take care if the Media Server is deported.



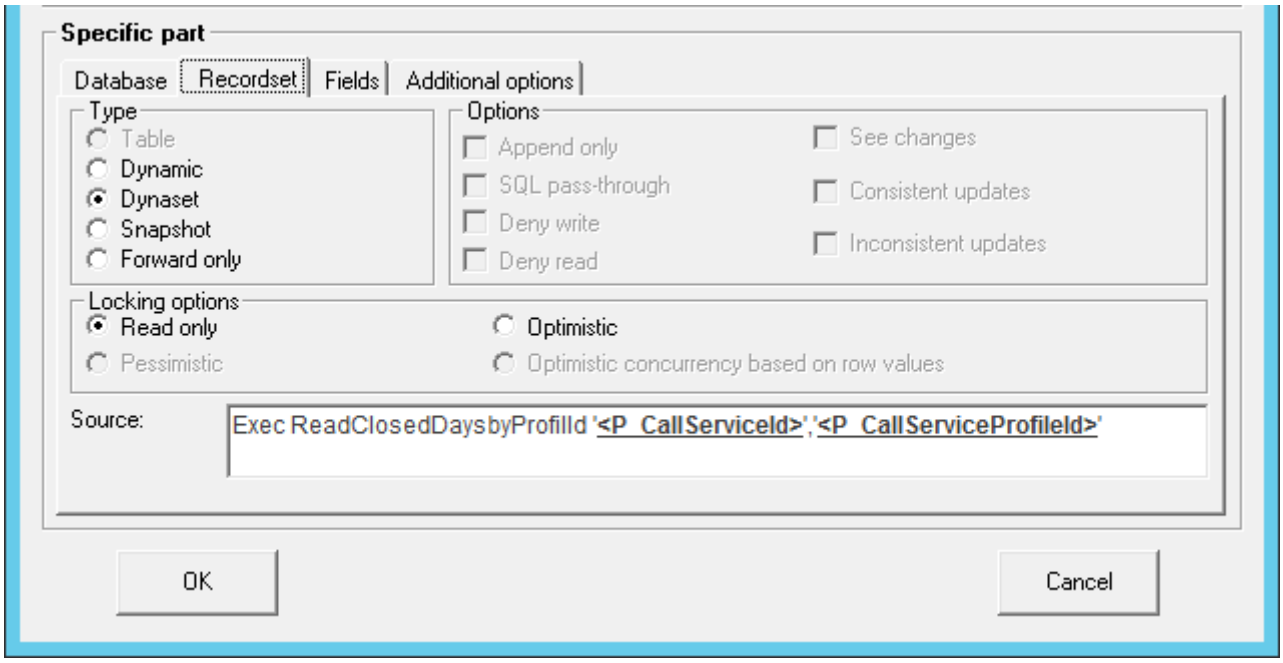
2° Specific part {Recordset}:

You must Call the stored procedure ”ReadClosedDaysByProfilId” with the following parameters:

- @ServiceId (text): Id Of the service
- @ProfilID (text): Id of the profiles
- Type “Dynaset”
- Locking options “Read only”

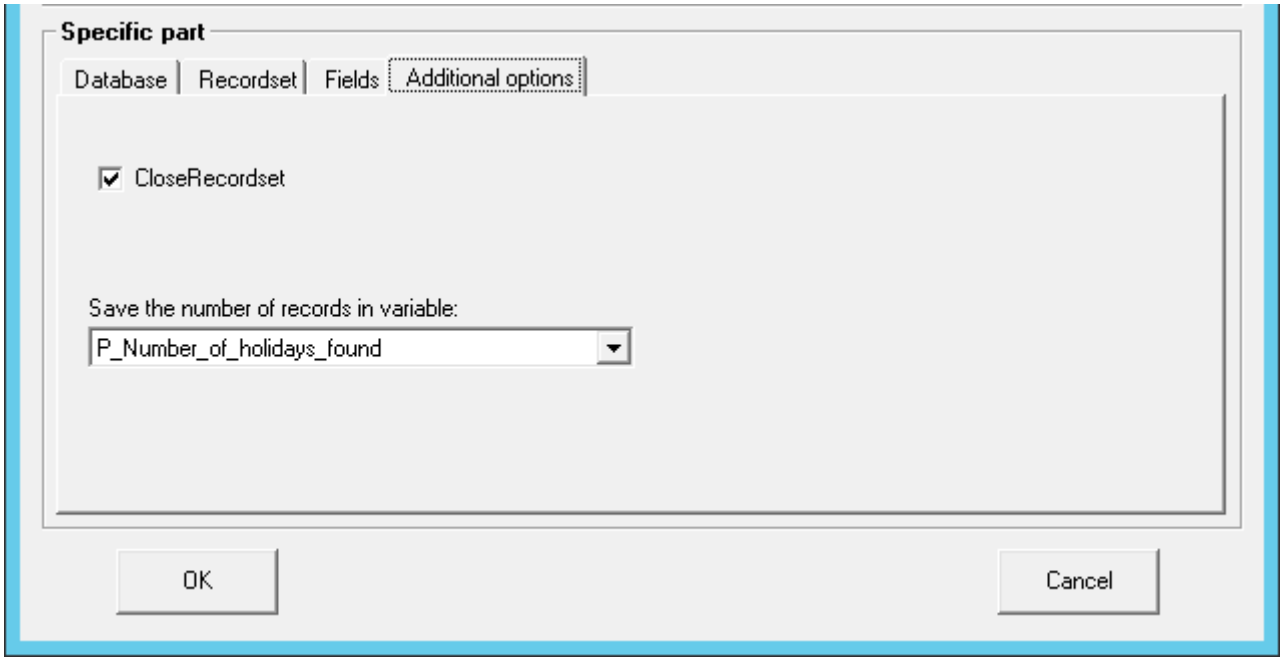
Source: Exec ReadClosedDaysbyProfilId '<P_CallServiceId>','<P_CallServiceProfileId>'

Rem. The variables must be selected by use of the function key F2=Insert variable



3° Specific part {Additional options}:

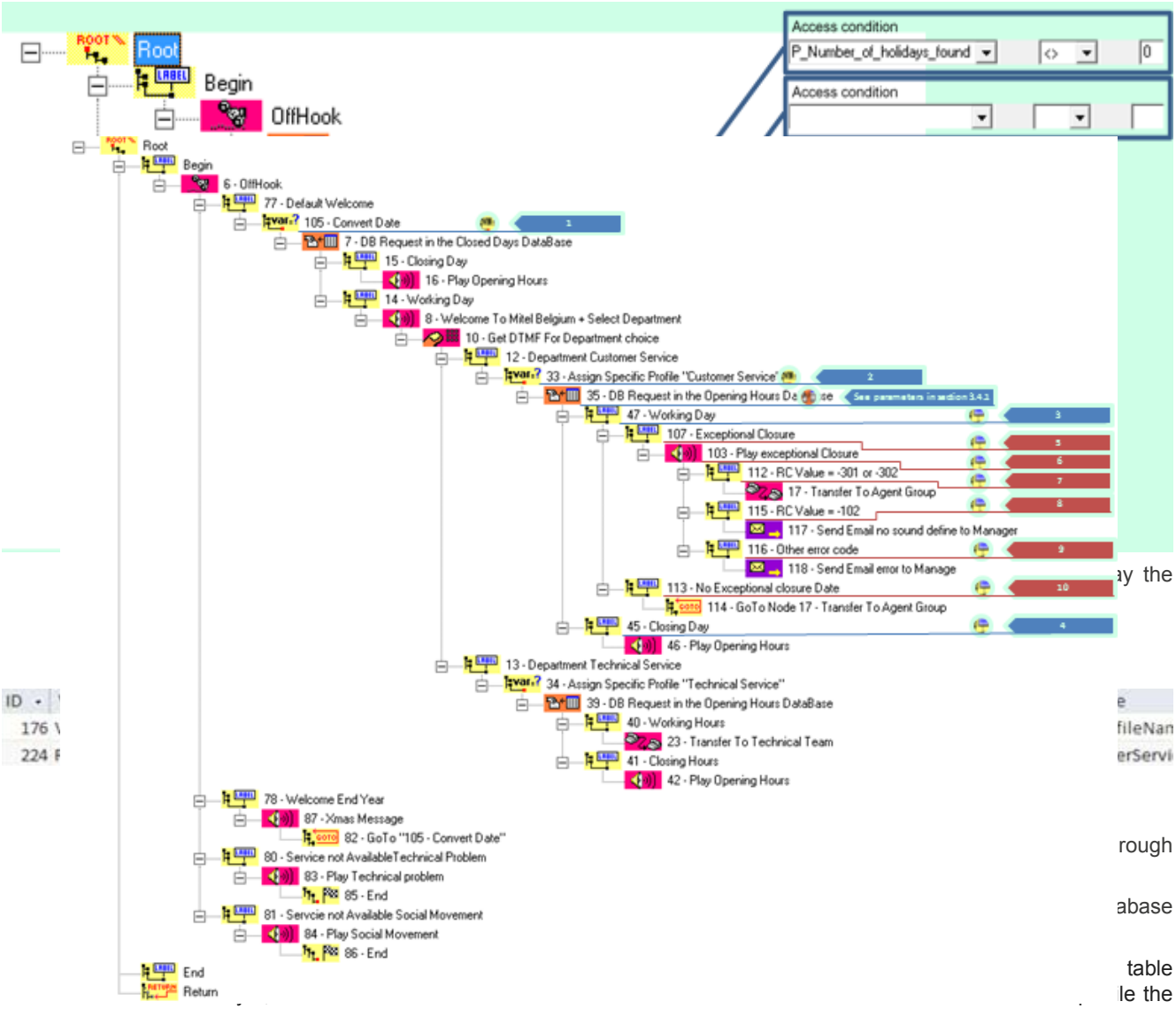
The result of the request is stored in the variable ”P_Number_of_holidays_found” previously created.



This variable is assigned to 0 if no closed day has been found; otherwise it is assigned with a value upper or equal to 1.

Rem. In this case, nothing must be filled in, in the Tab "Fields " of the “Get Records” node.

2.1.2 - Tree



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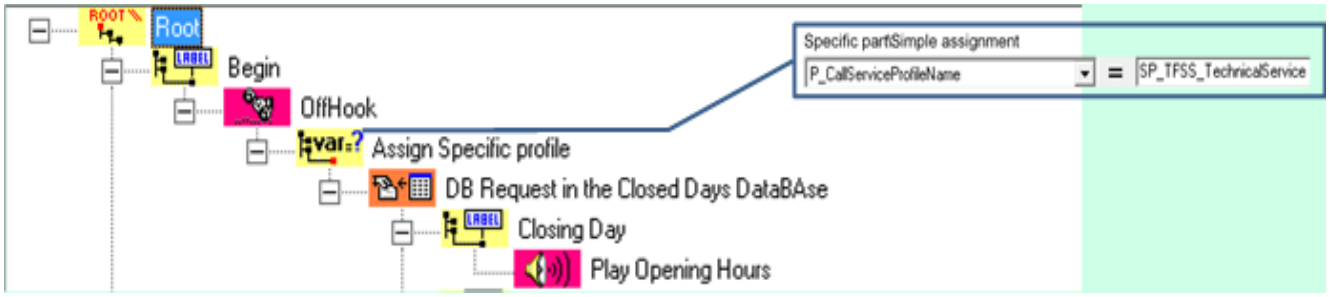


ID	VarNameSQL	ServiceId	ProfilId	RecordsInVariable	ProfilName
176	VarName5000CC	P_CallserviceId	P_CallServiceProfileId	P_Number_of_holidays_found	P_CallServiceProfileName
225	ReturnValues	Service Script Settings	b32ab2d6-ad56-4e16-b565-cb217db53736	1	SP_TFSS_TechnicalService

Example of an "Action Query" request to show some values contains in the SQL database.

Rem. The SQL tables will be more detailed later in this document.

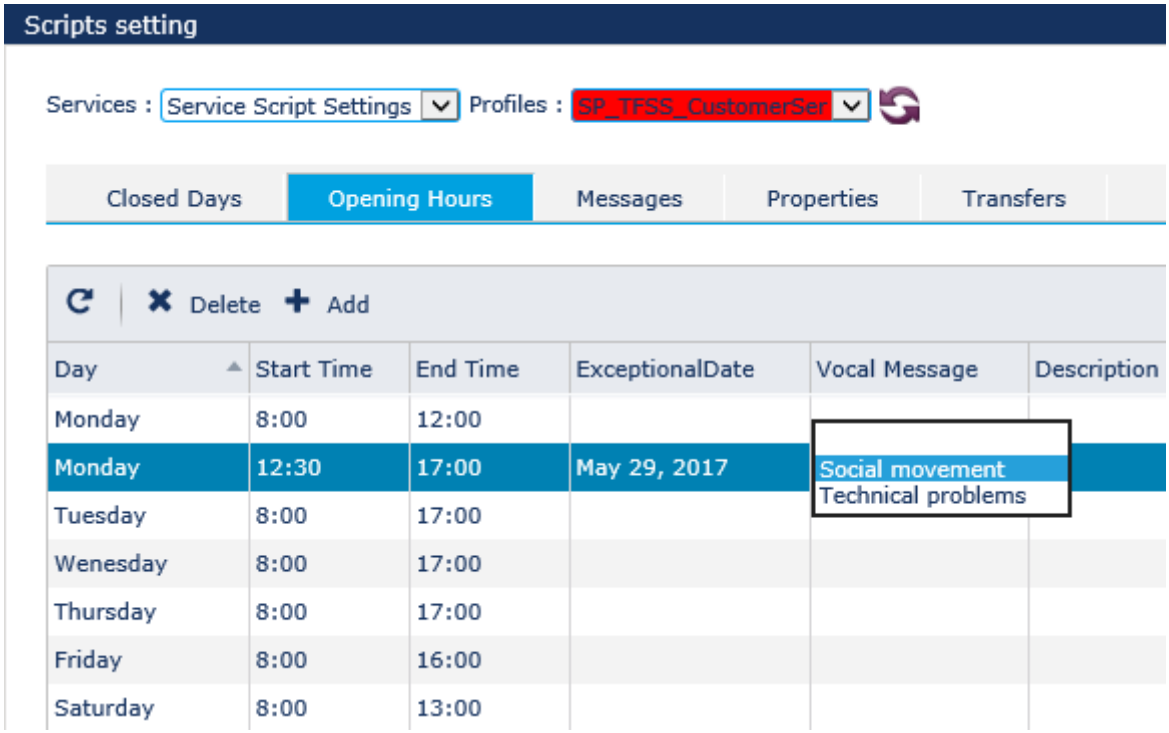
2.2 - Function opening Hours

The purpose of the "Opening Hours" is to define the usual business hours for one or several ranges for each day of the week.

The “ExceptionalDate” field, allows to limit the range only for this day or allow to broadcast an Exceptional message.

The “Vocal Message” allows to select a message “exceptional” Configured in the "Message" tab and to play it if "activated" is checked and that the due date, if specified, has not been reached (refer to step 4.3 “Messages” for configuration).

The “Description” field allows to comment an entry.



2.2.1 - Integration in the script

In this example, we will also configure the ability to broadcast a special closing message, based on predefined messages.

- Create a ”local” or ”User variables” of type Numeric in order to save the number of records found in the DataBase. Ex. ”ServiceOpen”.

- Create a "local" or "User variables" of type String in order to convert the current date from the variable ”P_CallTime” in the format "dd/mm/yy". Ex. ”DateNow”.

- Create a "local" or "User variables" of type String in order to save the value of the "DateException" from the "OpeningHour" table. Ex. ”ExceptionalClosure”.

- Create a "local" or "User variables" of type String in order to save the value of the ”VocalMessage” from the ”OpeningHour” table. Ex. ”SoundToPlay”.

An ODBC request is executed to read if the opening hour is active. The stored procedure is named ”ReadOpeningHoursByProfilID”

Add a ”GetRecords” node to query out the database with the following settings:

1° Specific part {Database tab}:

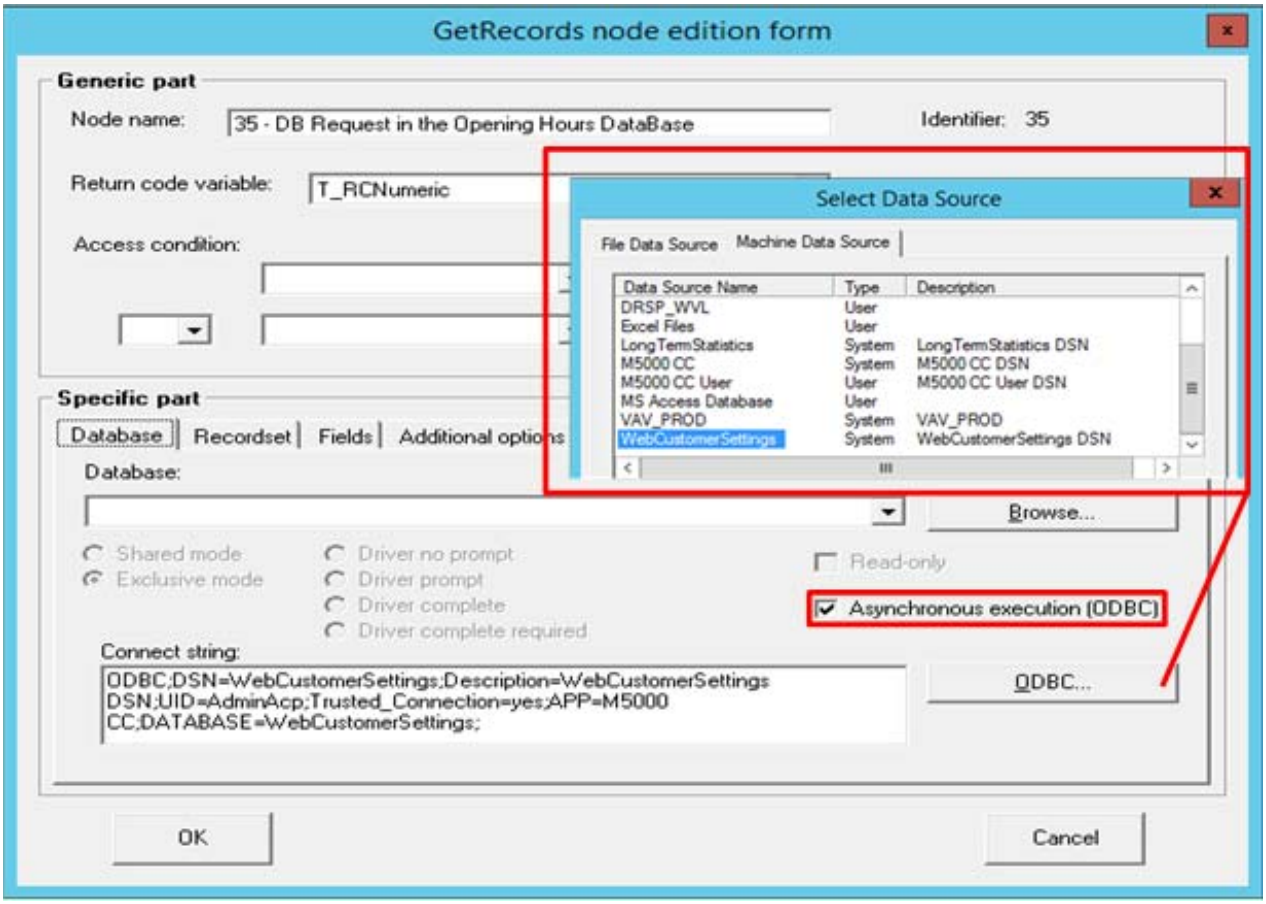
Check the box ”Asynchronous execution (ODBC)” in order to not hangs calls in the media server if there is no response on the request of the database.

In the {Connect string} text box, enter the connection string needed to open the database. You may also click

on the [ODBC...] button and use the dialog box that opens.

Select the ”WebCustomerSettings” Data Source from the Data Source Name list that is located in: Machine Data Source, User Data Sourse or System Data Source, depending of the installation (This Data Source is installed by the M5000 CC setup).

Note: All the script nodes are run on the Media Server machine, take care if the Media Server is deported.



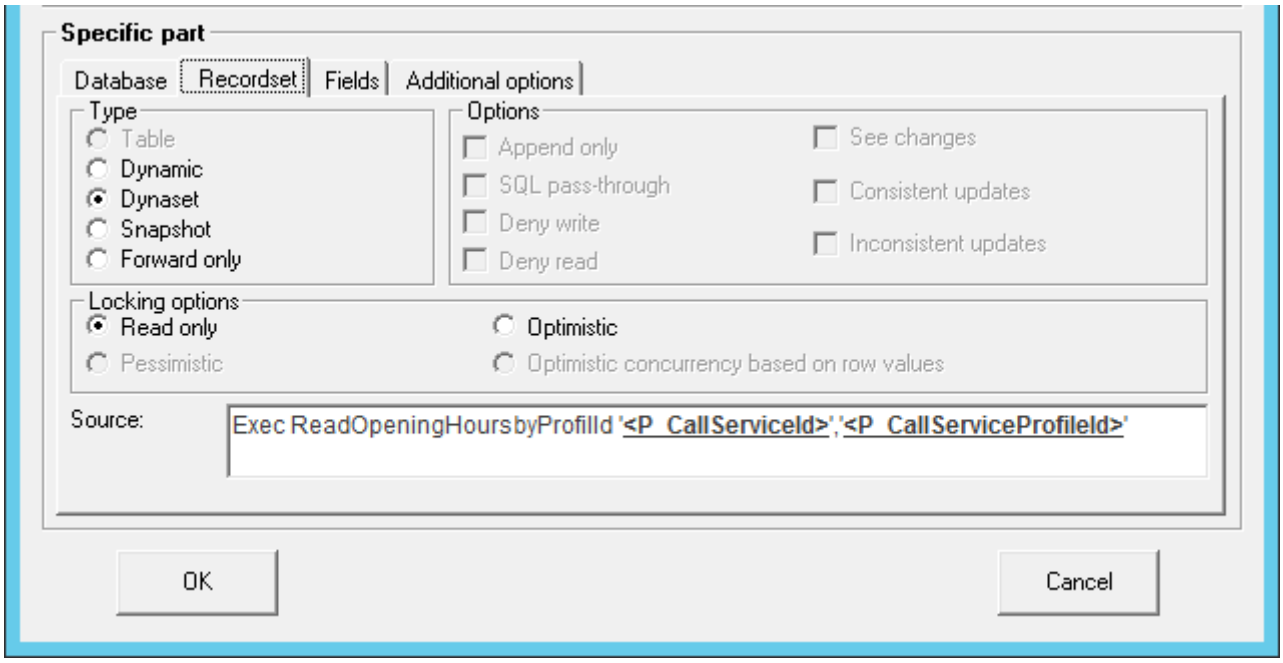
2° Specific part {Recordset}:

You must Call the stored procedure ”ReadOpeningHoursByProfilId” with the following parameters:

- @ServiceId (text): Id Of the service
- @ProfilID (text): Id of the profiles
- Type “Dynaset”
- Locking options “Read only”

Source: Exec ReadOpeningHoursbyProfilId '<P_CallServiceId>','<P_CallServiceProfileId>'

Rem. The variables must be selected by use of the function key F2=Insert variable.

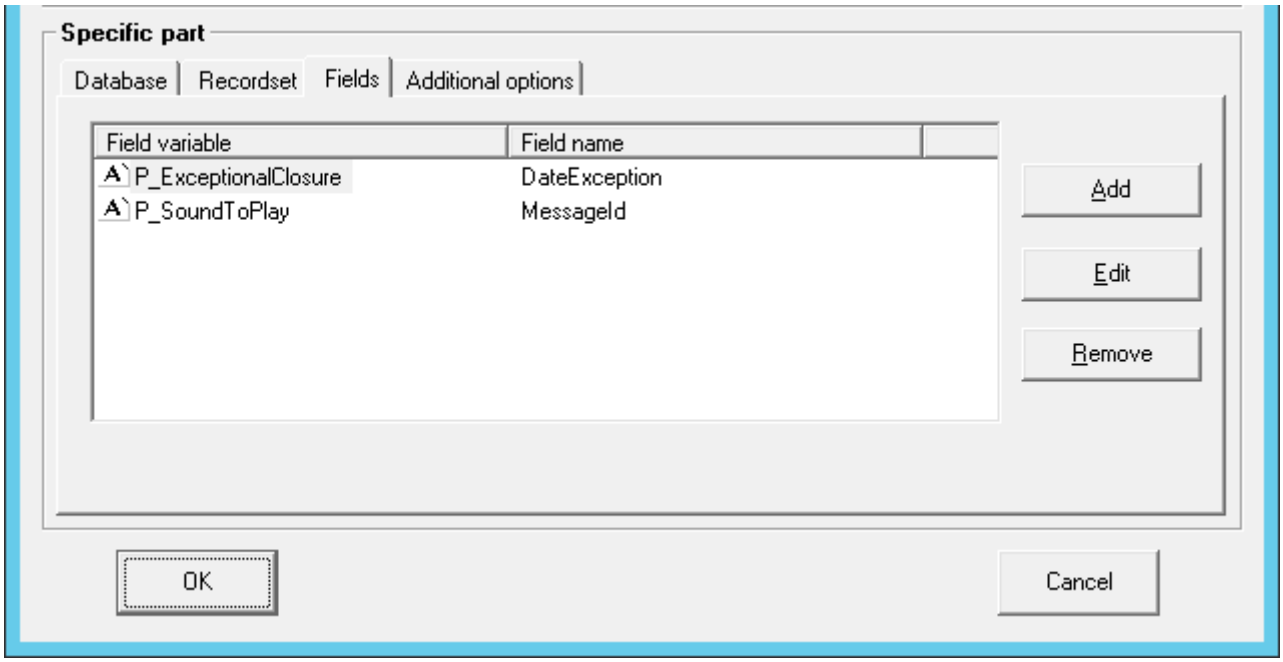


3° Specific part {Fields}:

Retrieve the following values from the table ”openingHour”:

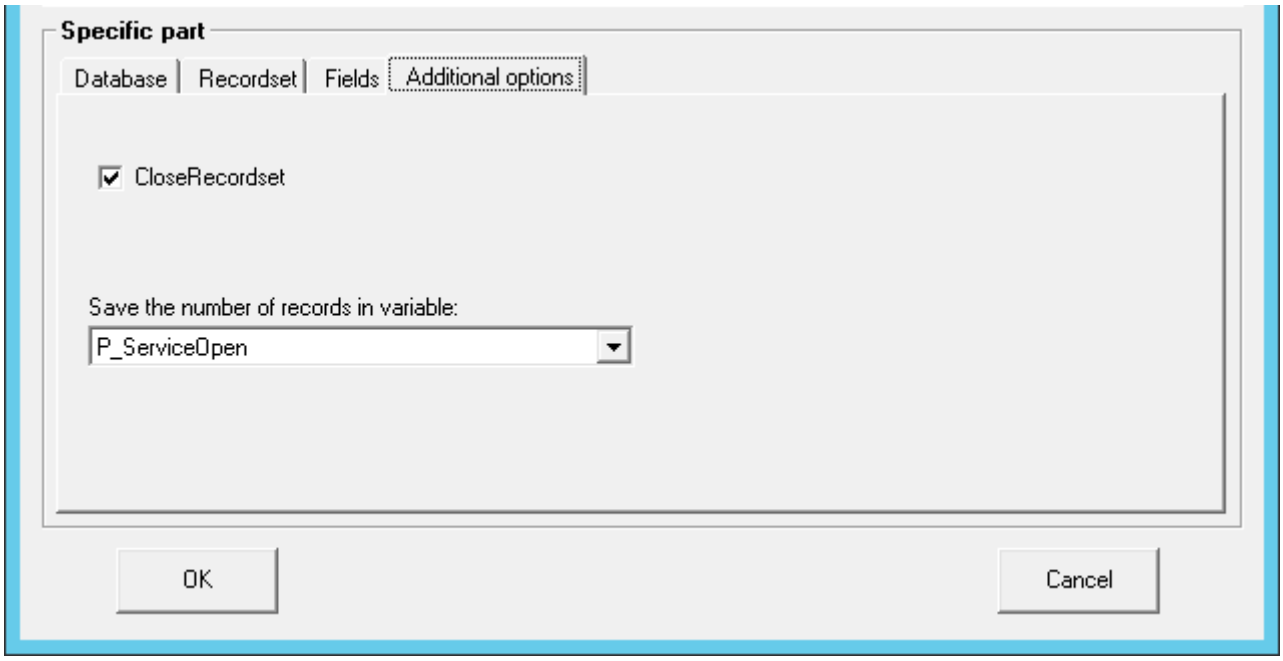
The ”DateException” into the variable ”P_ExceptionalClosure”.

The ”MessageId” into the variable ”P_SoundToPlay”.



4° Specific part {Additional options}:

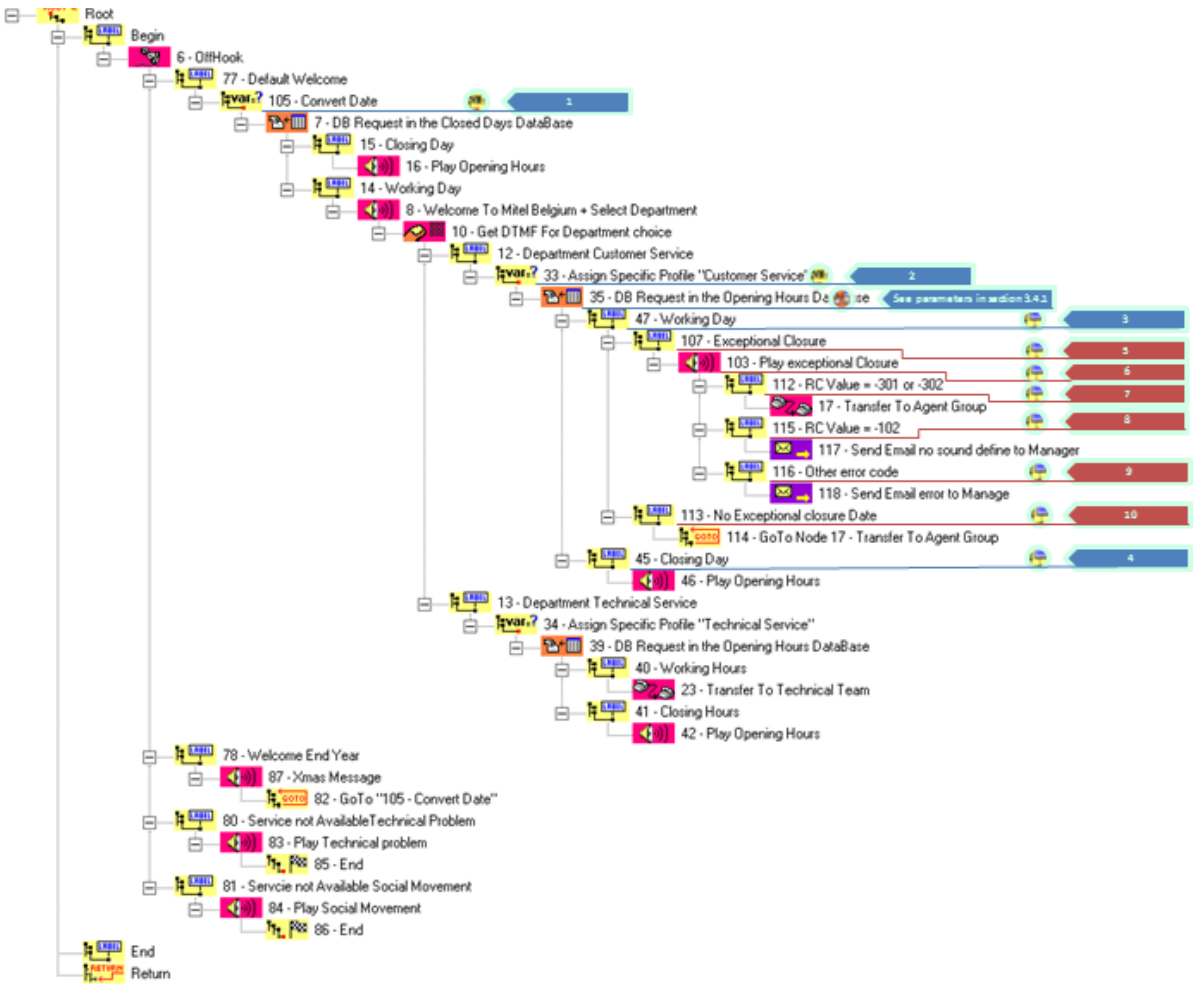
The result of the request is stored in the variable ”P_ServiceOpen” previously created.



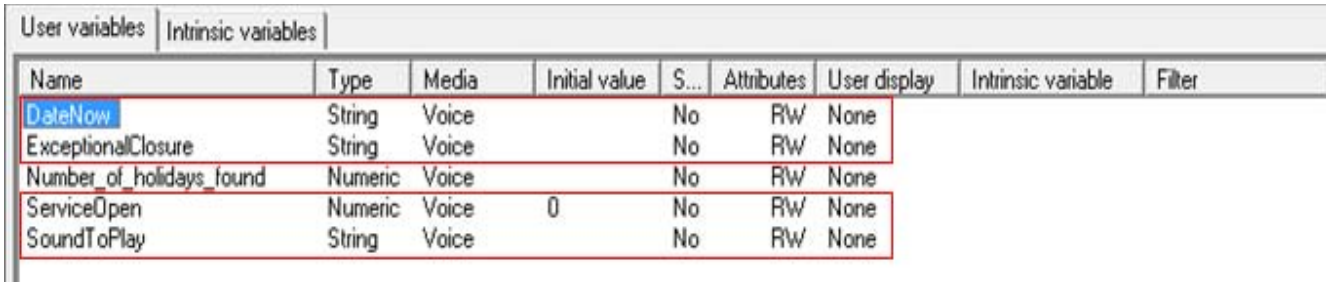
This variable is assigned to 0 if the service is closed; otherwise it is assigned with a value upper or equal to 1.

2.2.2 - Tree

To make reading easier, the nodes that comes into play in the operation are not detailed directly into the tree image, but are detailed through bookmarks.

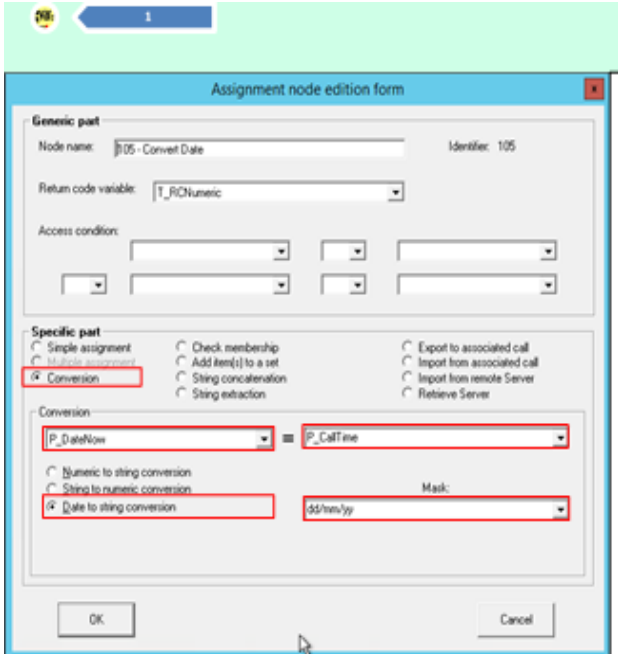


Variable created



User variables | Intrinsic variables

Name	Type	Media	Initial value	S...	Attributes	User display	Intrinsic variable	Filter
DateNow	String	Voice		No	RW	None		
ExceptionalClosure	String	Voice		No	RW	None		
Number_of_holidays_found	Numeric	Voice		No	RW	None		
ServiceOpen	Numeric	Voice	0	No	RW	None		
SoundToPlay	String	Voice		No	RW	None		



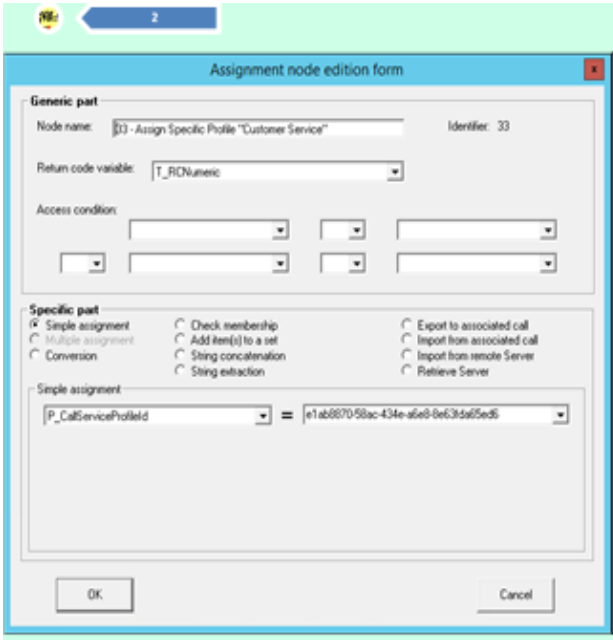
Comment:

This node is used to retrieve the current date from the variable "P_CallTime" and will be used to check if an exceptional date has been configured.

"P_DateNow" is a variable that has been created.

"P_CallTime" is a M5000CC system variable.

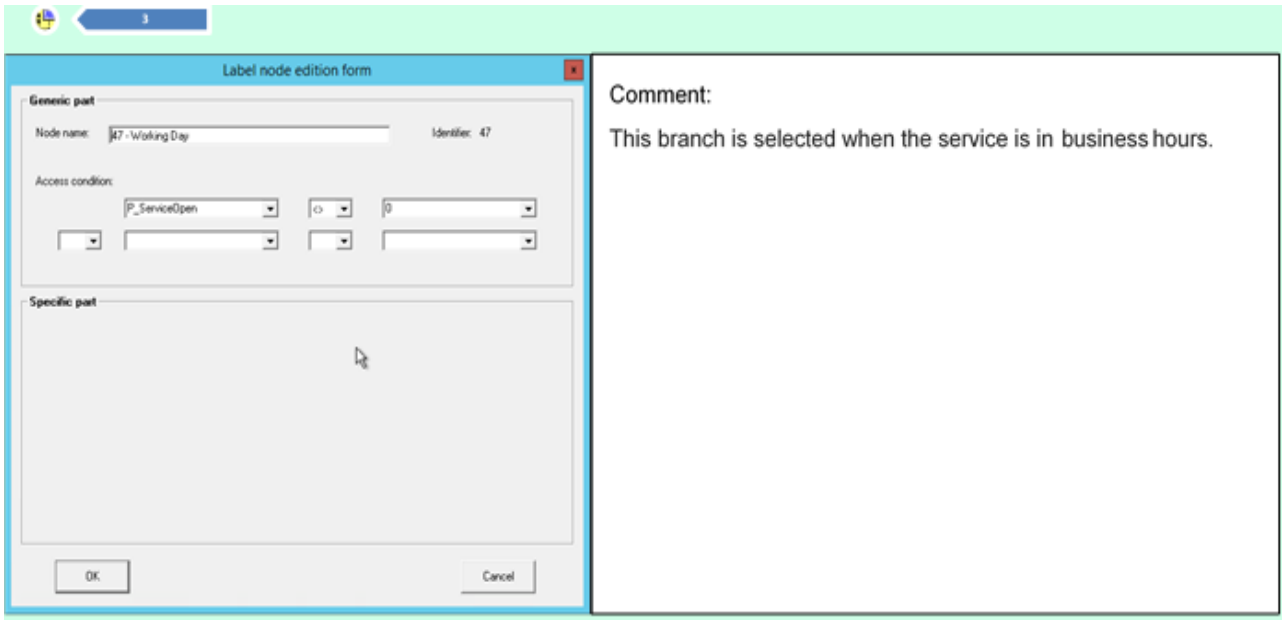
Select a conversion "Date to string" with a mask "dd/mm/yy" to match the date format contain in the SQL database.

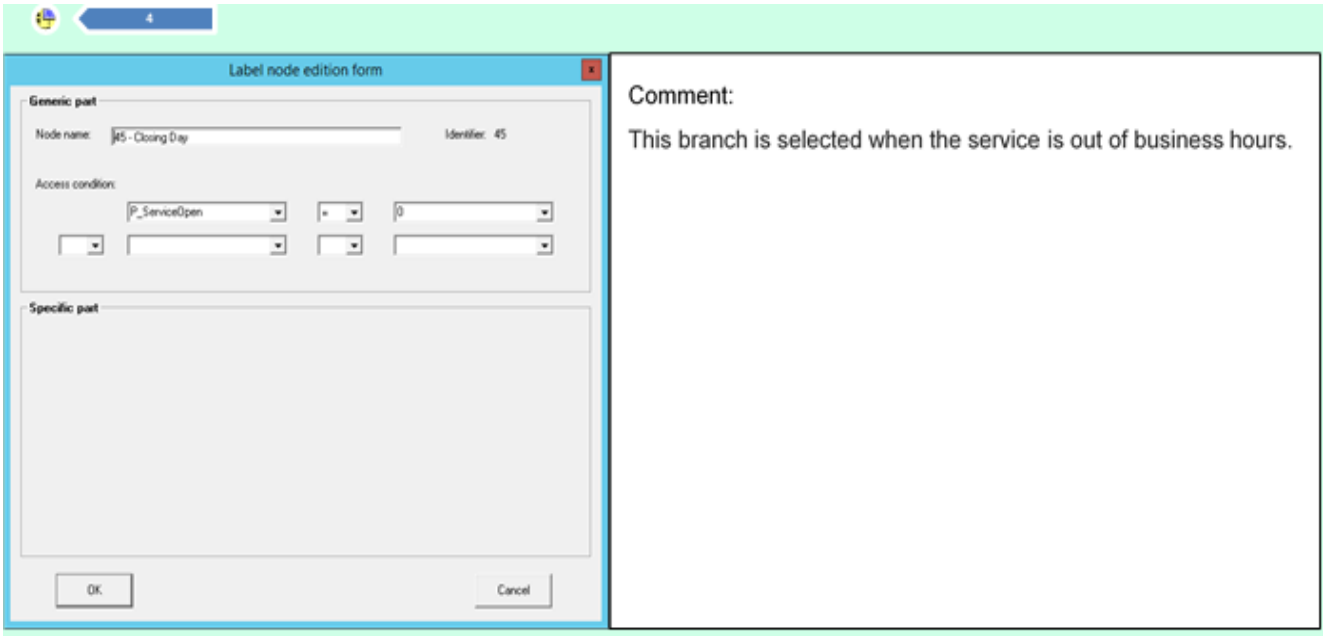


Comment:

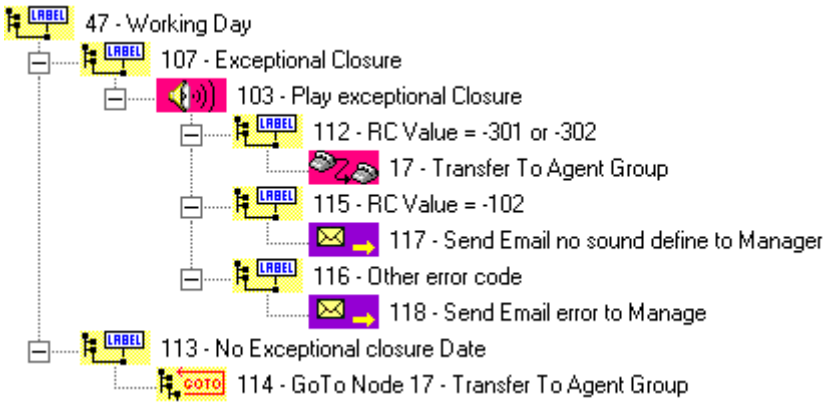
This node is used to retrieve the parameters of a specific profile.

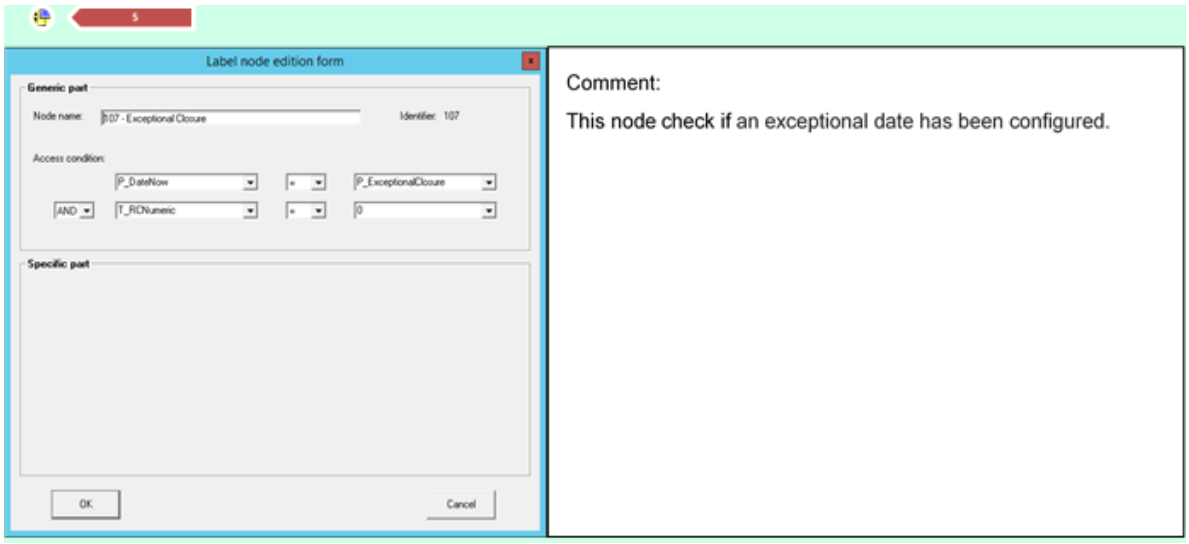
In this case the profile "e1ab8870-58ac-434e-a6e8-8e63fda65ed6" is equal to the service "SP_TFSS_CustomerService"

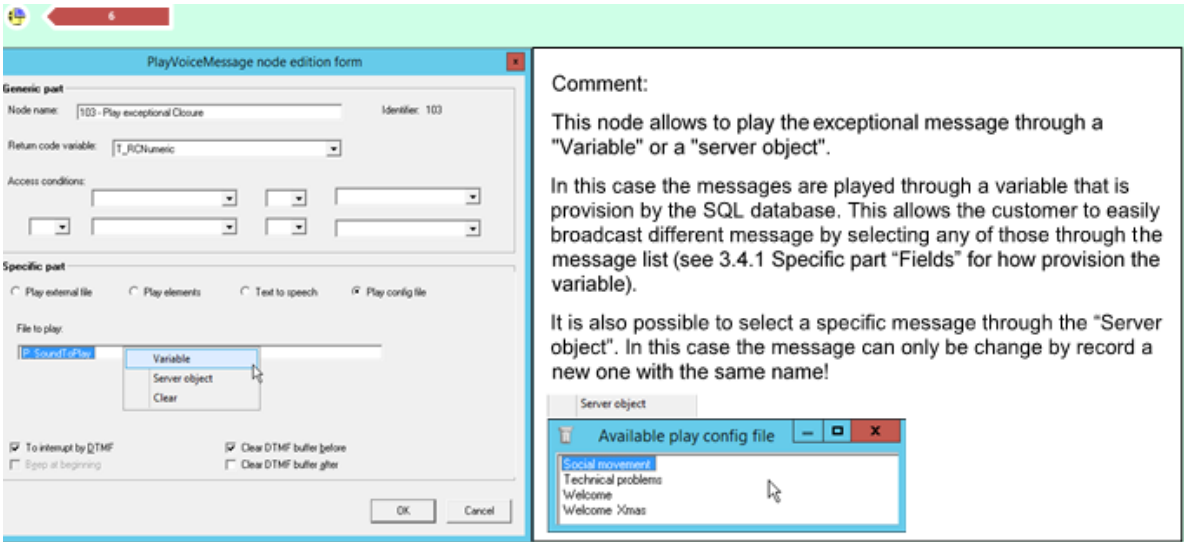


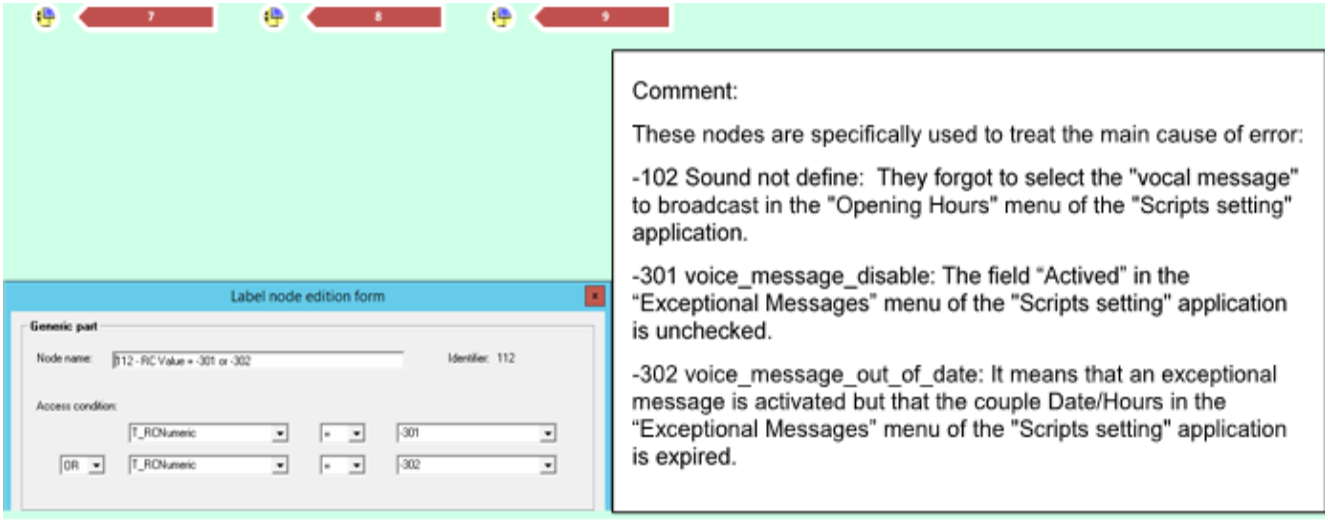


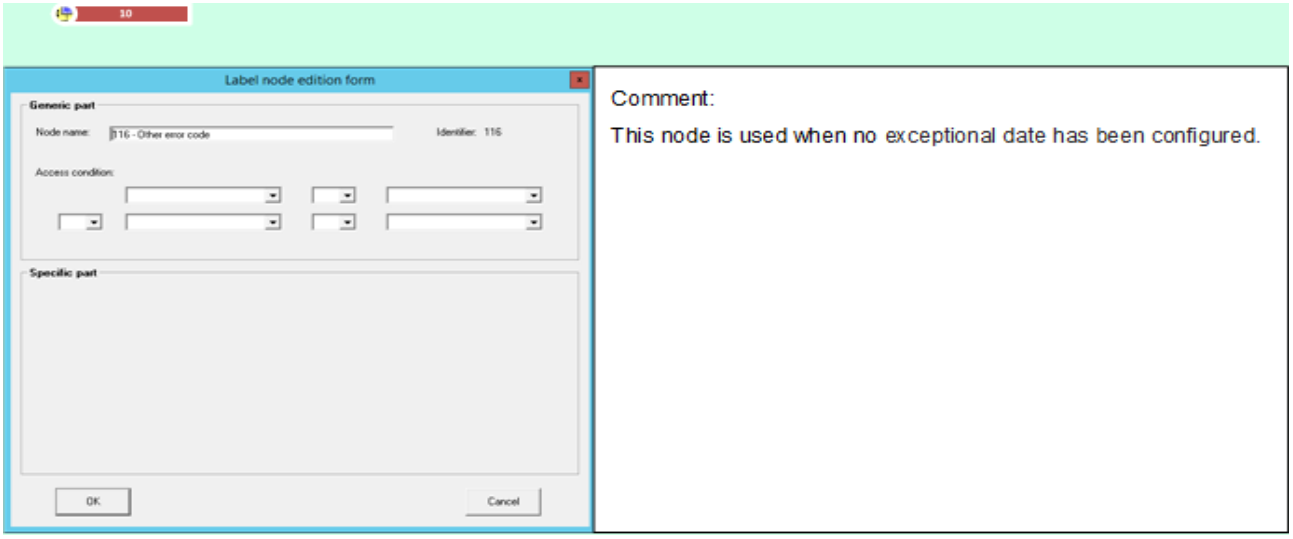
The next part explain how to configure the system to play a message in case of exceptional closure, like for a team building day, a company anniversary or something like this and that can easily managed by the customer.



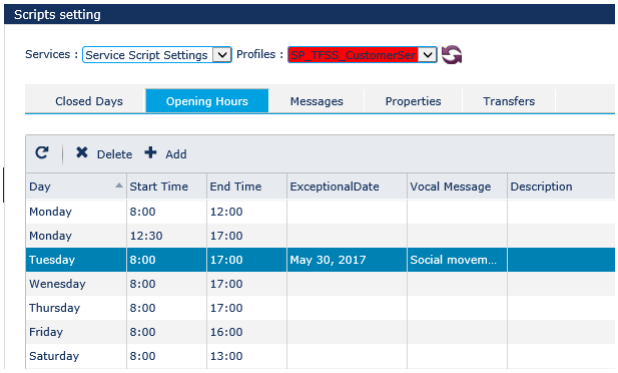

5
Label node edition form
Generic part
Node name:
107 - Exceptional Closure
Identifier: 107
Access condition:
P_DateNow
=
P_ExceptionalClosure
AND
T_RCNumeric
=
0
Specific part
OK
Cancel
Comment:
This node check if an exceptional date has been configured.


6
PlayVoiceMessage node edition form
Generic part
Node name:
103 - Play exceptional Closure
Identifier: 103
Return code variable:
T_RCNumeric
Access conditions:
Specific part
Play external file
Play elements
Text to speech
Play config file
File to play:
P_SoundToPlay
Variable
Server object
Clear
To interrupt by DTMF
Beep at beginning
Clear DTMF buffer before
Clear DTMF buffer after
OK
Cancel
Comment:
This node allows to play the exceptional message through a "Variable" or a "server object".
In this case the messages are played through a variable that is provision by the SQL database. This allows the customer to easily broadcast different message by selecting any of those through the message list (see 3.4.1 Specific part “Fields” for how provision the variable).
It is also possible to select a specific message through the “Server object”. In this case the message can only be change by record a new one with the same name!
Server object
Available play config file
Social movement
Technical problems
Welcome
Welcome Xmas


7
8
9
Label node edition form
Generic part
Node name:
112 - RC Value = -301 or -302
Identifier: 112
Access condition:
T_RCNumeric
=
301
OR
T_RCNumeric
=
302
Comment:
These nodes are specifically used to treat the main cause of error:
-102 Sound not define: They forgot to select the "vocal message" to broadcast in the "Opening Hours" menu of the "Scripts setting" application.
-301 voice_message_disable: The field “Actived” in the “Exceptional Messages” menu of the "Scripts setting" application is unchecked.
-302 voice_message_out_of_date: It means that an exceptional message is activated but that the couple Date/Hours in the “Exceptional Messages” menu of the "Scripts setting" application is expired.



The customer, through the "Opening Hours" menu of the "Scripts setting" application of is portal must select the date for exceptional closure and the message to play.



And through the “Exceptional Messages” menu of the "Scripts setting" application, he must check the field “Activated” for the corresponding message. The couple Date/Hour is optional and is used for automatically deactivate the Exceptional message.

2.3 Function Messages

Two types of messages defined by their "Name" property can be configured in each of the languages defined in the service.

• Standard Messages

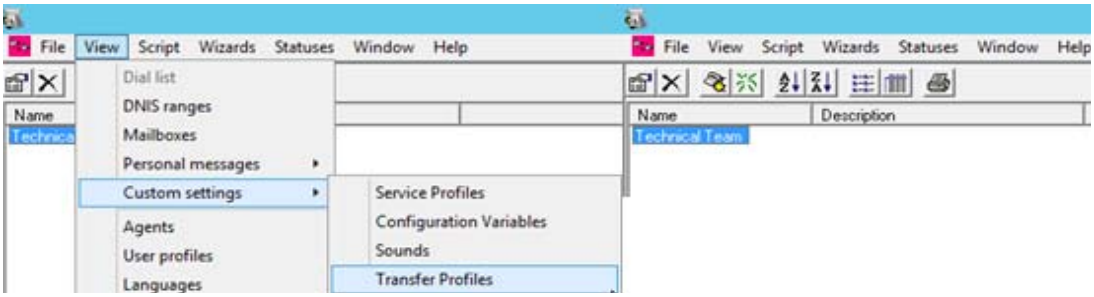
• Exceptional Messages

For each message defined in the service, the user can download a “Wav” file, which will be automatically upload to the server.

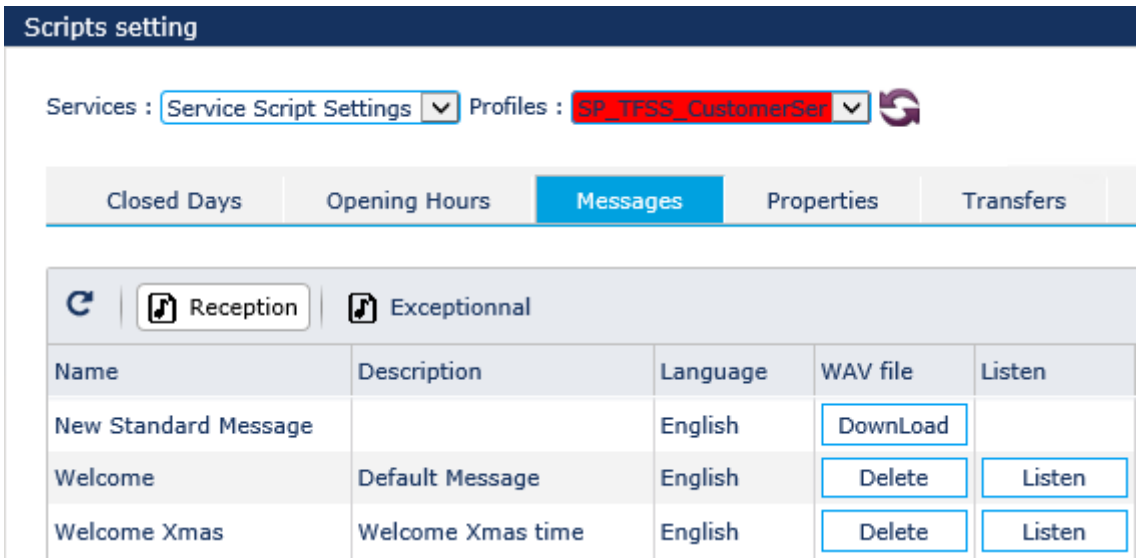
Once a file is imported the button “Download” in the column “WAV file” is replaced by the button “Delete” and this also means that a WAV file is uploaded.

When a WAV file is uploaded, the button “Listen” that appears in the column “Listen”, allow to listen this one.

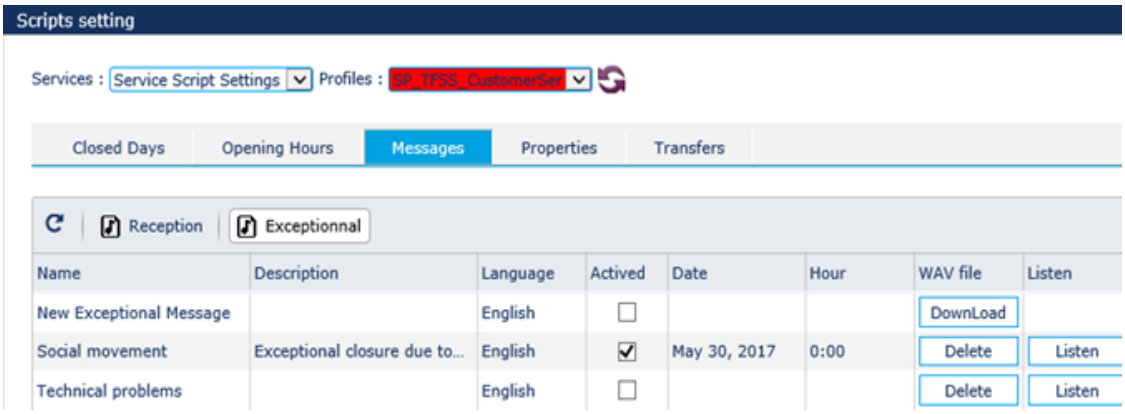
The messages must be created through the M5000 CC Service Manager.



MMI standard messages



MMI Exceptional messages



The ”Actived” checkbox, if selected allows to play the sound. This may be related to a due date/time.

The messages of type "Exceptional" must match to the voice messages that can be assigned to an opening hours. They will be broadcast on condition that the checkbox « activated » is validated and that the due date/hour is unexpired.

Tips: If you are not able to listen the message from the manager PC add the name of the M5000CC server in his hosts file. Ex. @IP_Server Computer_ServerName (C:\Windows\System32\drivers\etc\hosts | 172.28.10.162 M5000CC-V3-LAB).

2.4 Function Properties

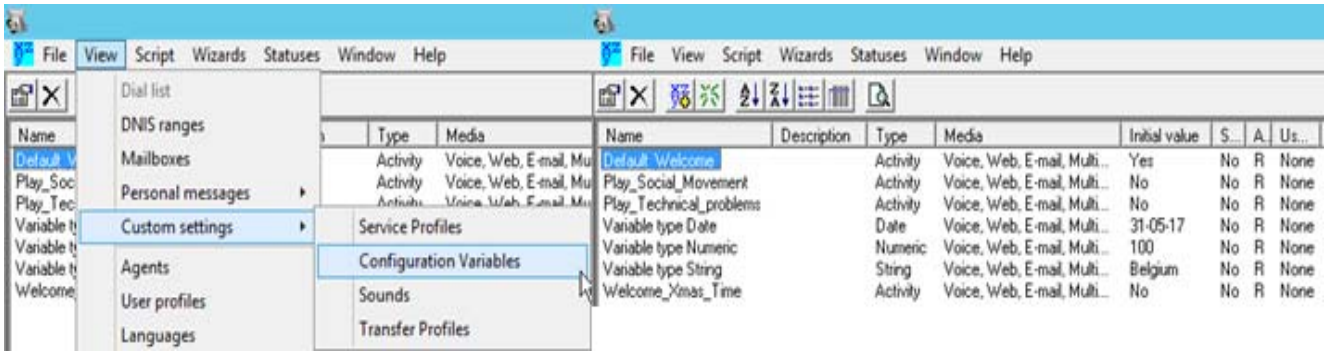
This MMI allows to assign values to the various properties related to a profile.

Three types of variable can be assigned and managed through the portal.

- Type Date/Time
- Type String
- Type Numeric

2.4.1 - Integration in the script

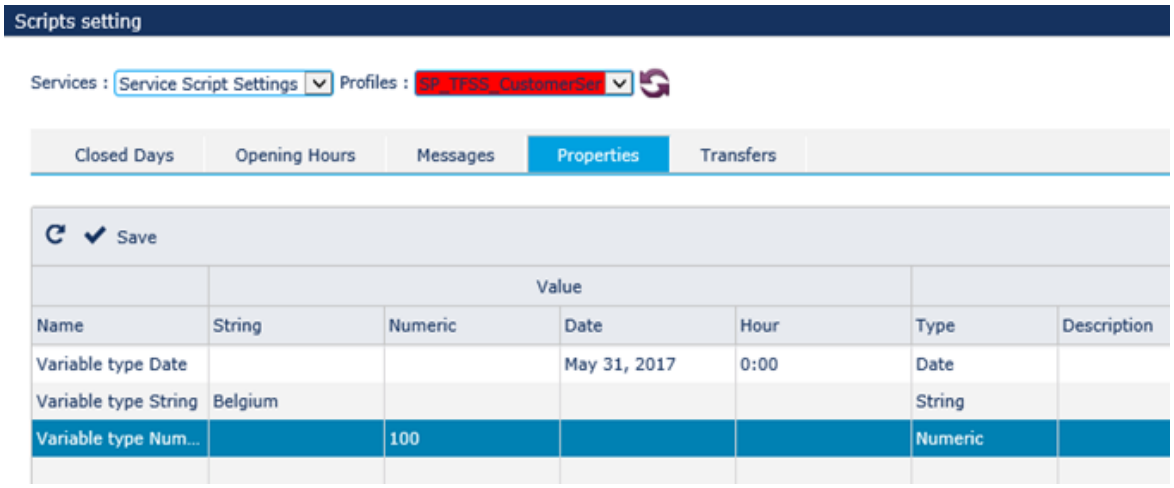
The variables must be created through the M5000 CC Service Manager.



Once the variables are created, we can use these in the ”Access condition” of the nodes, of the tree structure. These new variables are named ”C_VariableName”.

* Note: The variable type ”Activity” will be detailed later in chapter 2.6.

The ”Service Manager” can now manage the different values according his needs.



2.5 Function Transfers

This MMI allows to interact on some values of the ”Transfert” nodes associated to a profiles.

The User can change following values:

Global timeout

Min Presentation timeout

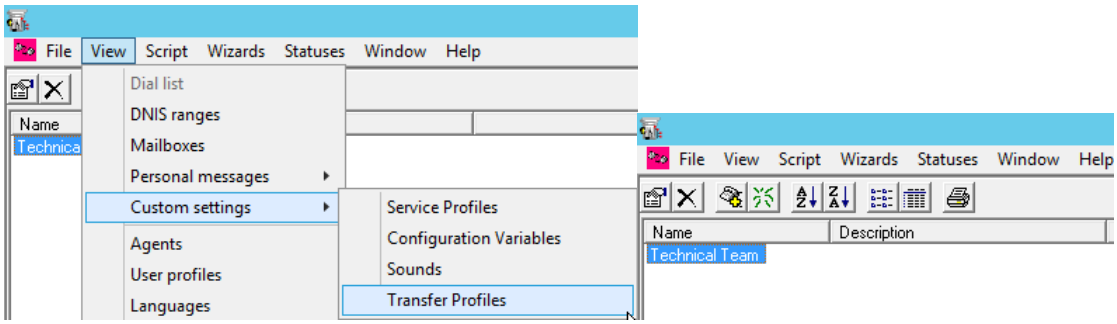
Max Presentation timeout

Call Priority up 1 to 99

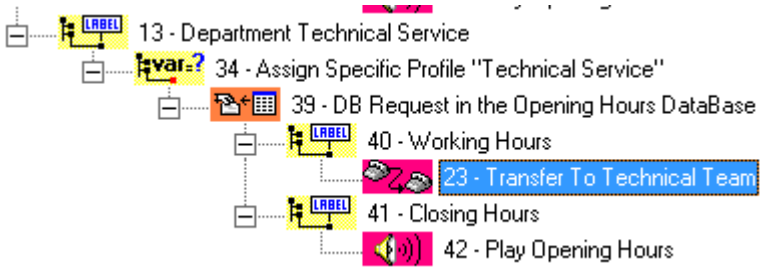
Transfer Type (Monitored, Blind, Pool)

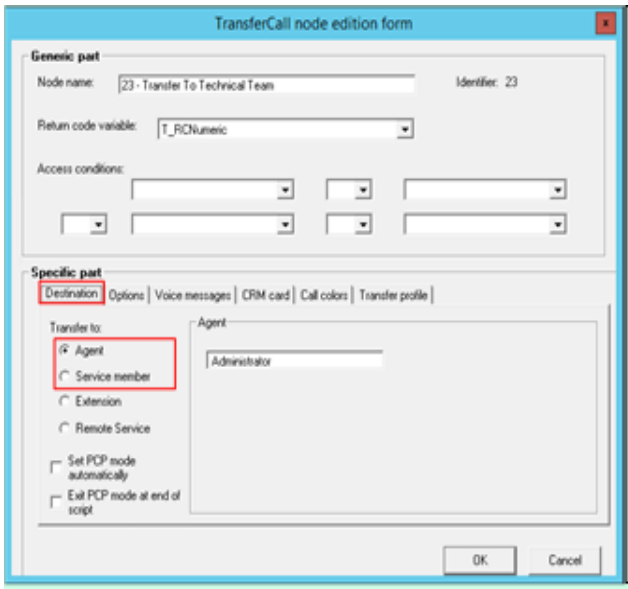
2.5.1 - Integration in the script

The Transfer Profiles must be created through the M5000 CC Service Manager.



Once the transfer Profiles are created, we can use these in the ”Transfer” nodes, of the tree structure.

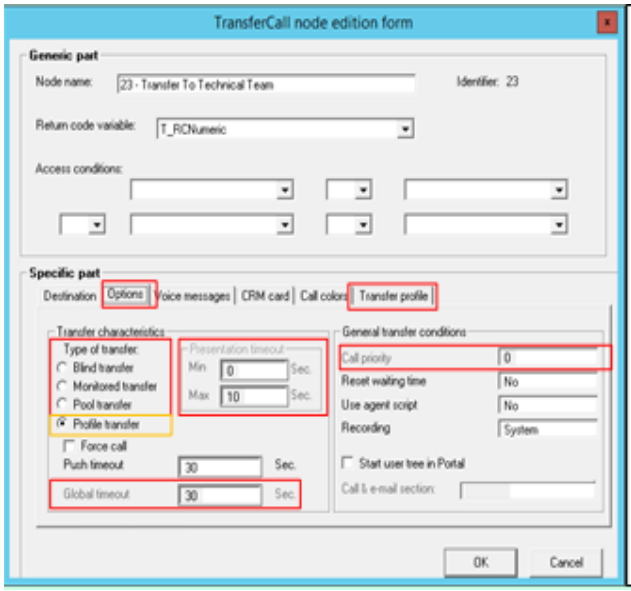




Comment :

Menu “Destination”

This function can be used with “Transfer to”: “Agent” or “Service member”



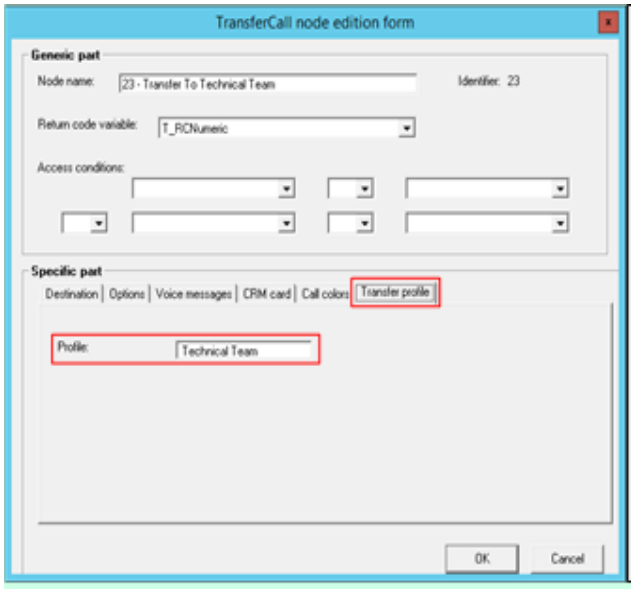
Comment :

Menu “Options”

Once the "Profile transfer" is selected as “Type of transfer", the menu “Transfer profile" appears and the following parameters are no more manageable directly in the “TransferCall" node and must managed through the "Transfers" menu of the "Scripts setting" application of the portal.

- Global timeout
- Min Presentation timeout
- Max Presentation timeout
- Call Priority up 1 to 99
- Transfer Type (Monitored, Blind, Pool)

All the other parameters remain configurable as before

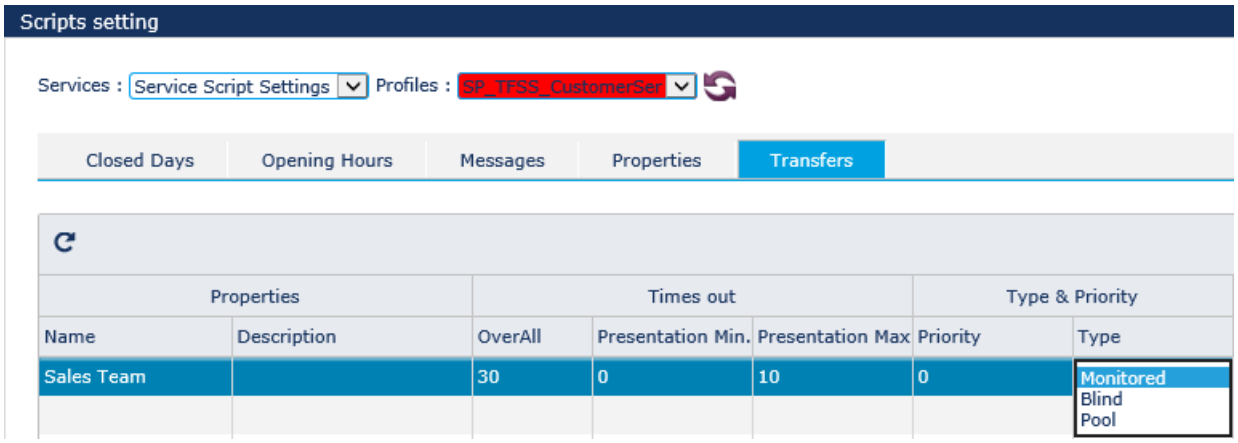


Comment :

Menu “Transfer profile”

Here you configured the profile to use for this TransferCall node.

The ”Service Manager” can now manage the different values according his needs

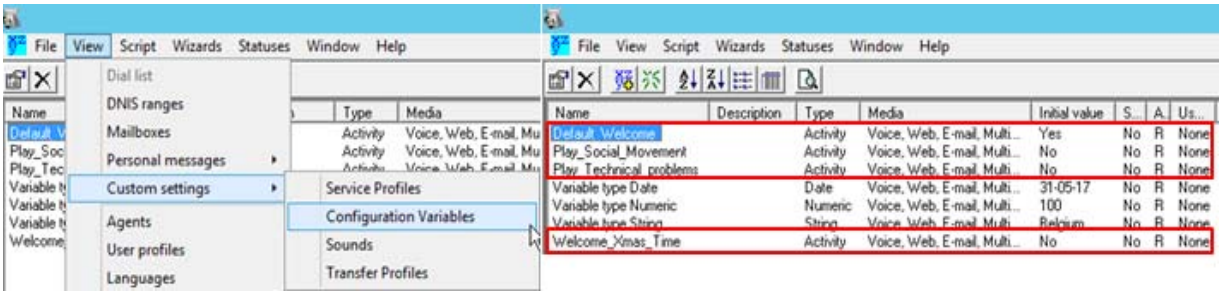


2.6 Function Activities

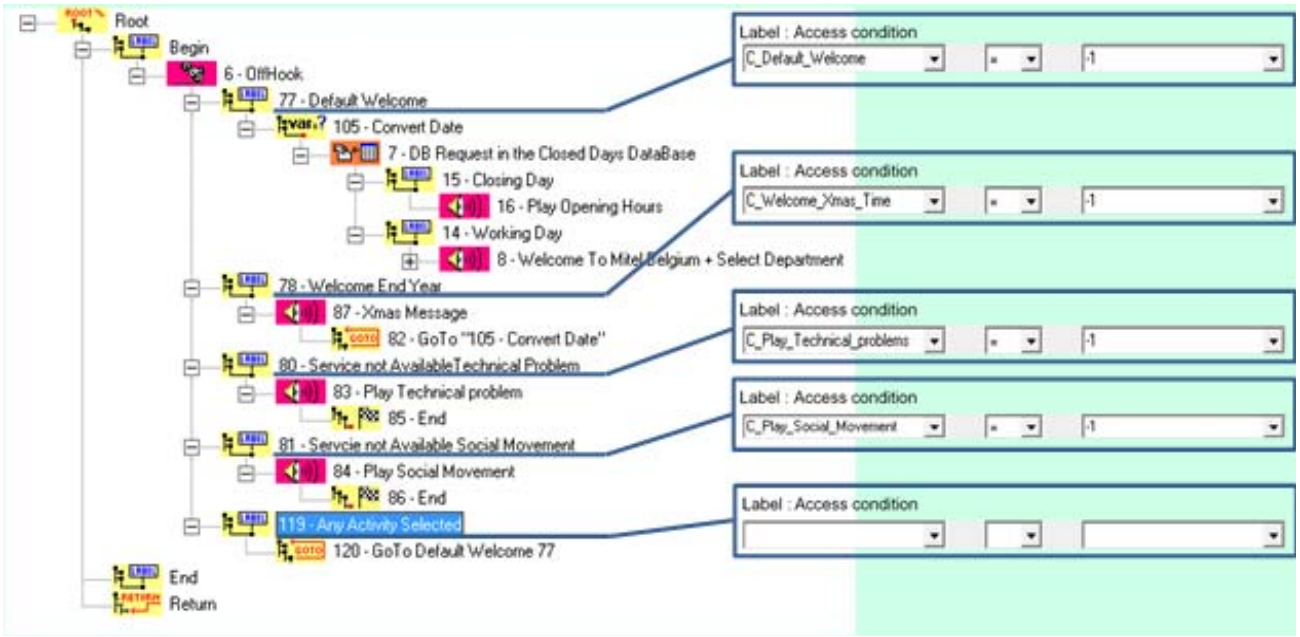
Activities are only related to services and are independently of a profile (profile set to ”no profil).
This activities properties:

- Working (Boolean: -1 Active, 0 Not active)
- Date / Time (**Do not use**)

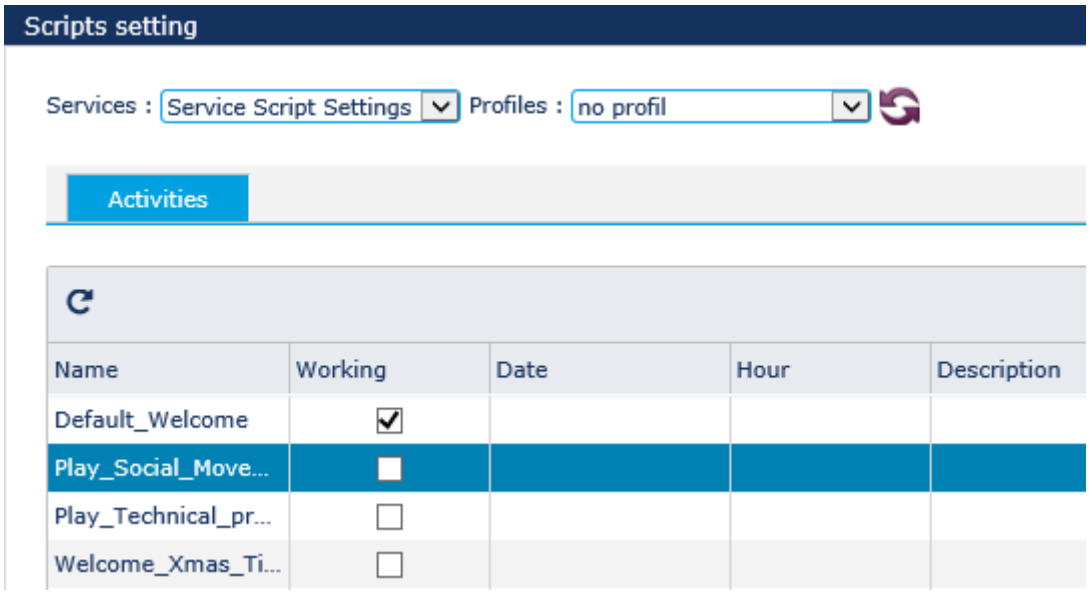
The activity assigned to a service corresponds to a variable of type "Activity". The configuration of this variable is done through the M5000 CC Service Manager (see point 4.4).



2.6.1 - Integration in the script



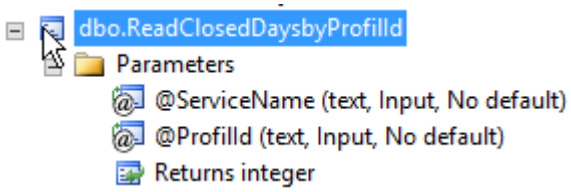
The ”Service Manager” can now activate different messages according his needs.


Scripts setting
Services : Service Script Settings
Profiles : no profil
Activities
Name
Working
Date
Hour
Description
Default_Welcome
Play_Social_Move...
Play_Technical_pr...
Welcome_Xmas_Ti...

3 SQL data base details

3.1 - Stored procedure

- 1.ReadClosedDaysbyProfilID



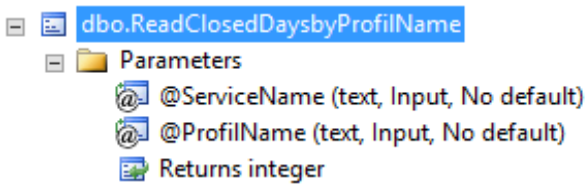
Input parameters:

- @ServiceId (String): id of the service
- @ProfilId (String): Id of the profil

➔ Exec ReadClosedDaysbyProfilId '<P_CallServiceId>','<P_CallServiceProfileId>'

The output of the procedure is set to “1” if the current date is a closed day and “0” in the otherwise.

- 2. ReadClosedDaysbyProfilName

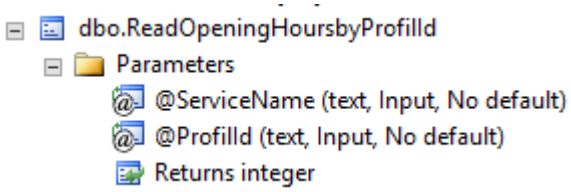


Input parameters:

- @ServiceId (String): id of the service
- @ProfilName (String): Name of the profil

➔ Exec ReadClosedDaysbyProfilName '<P_CallServiceId>','<P_CallServiceNameId>'

- 3.ReadOpeningHoursbyProfilID



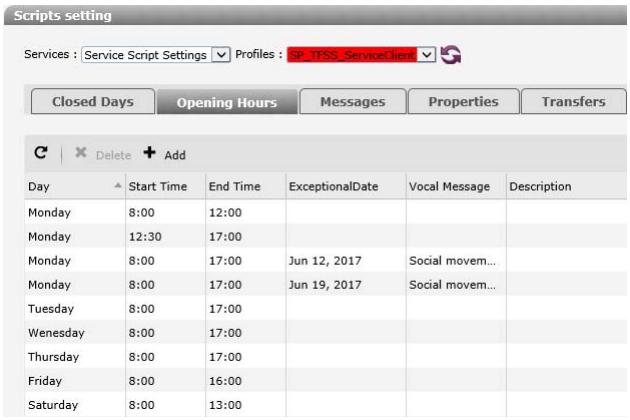
Input parameters:

- @ServiceId (String): id of the service
- @ProfilId (String): Id of the profil

➔ Exec ReadOpeningHoursbyProfilId '<P_CallServiceId>','<P_CallServiceProfileId>'

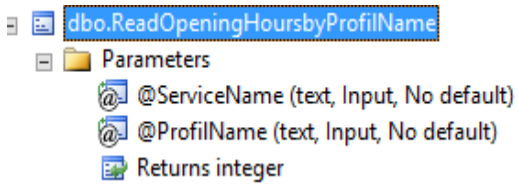
The output of the procedure is set to “1” if the current date is in the business hours and “0” in the otherwise.

When there are multiple records for the same day but configured with different exceptions days, the results of the SQL query are sorted based on the "DateException" column so that the scenario takes into account the Exceptional days programmed.



Day	Start Time	End Time	ExceptionalDate	Vocal Message	Description
Monday	8:00	12:00			
Monday	12:30	17:00			
Monday	8:00	17:00	Jun 12, 2017	Social movem...	
Monday	8:00	17:00	Jun 19, 2017	Social movem...	
Tuesday	8:00	17:00			
Wenesday	8:00	17:00			
Thursday	8:00	17:00			
Friday	8:00	16:00			
Saturday	8:00	13:00			

4. **ReadOpeningHoursbyProfilName**



Input parameters:

- @ServiceId (String) : id of the service
- @ProfilName (String) : Id of the profil

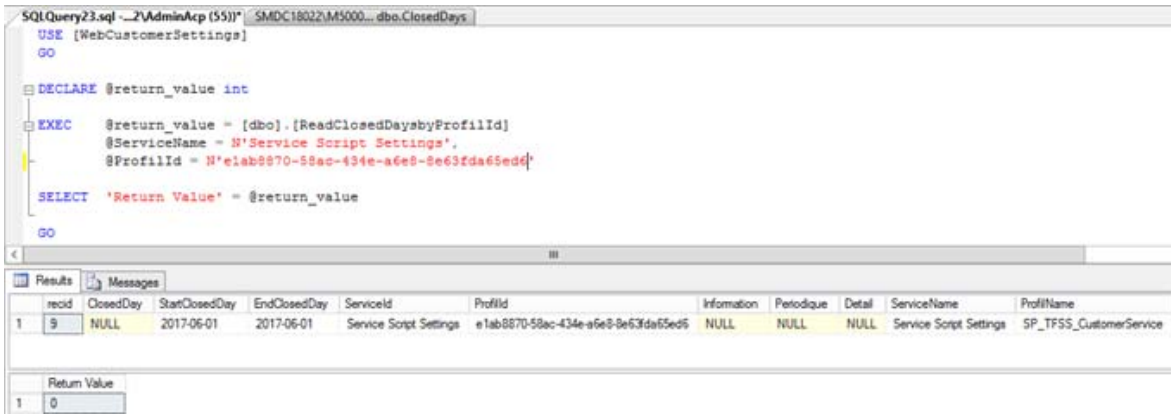
3.2 - Sql tables

· ClosedDays ➔ Table containing the data configured in the portal for the "Closed Days" tab

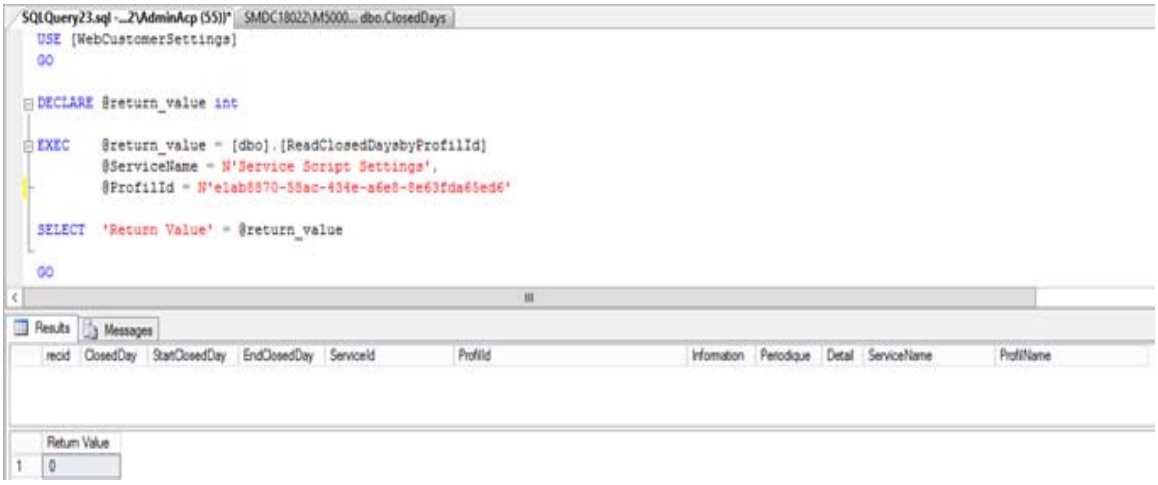
SMDC18022\M5000... dbo.ClosedDays

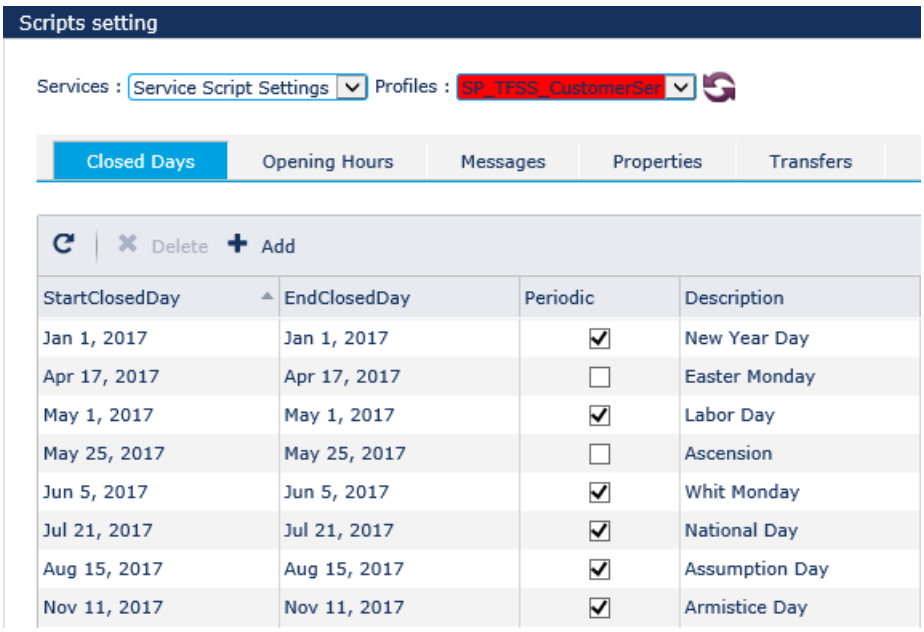
recid	ClosedDay	StartClosedDay	EndClosedDay	ServiceId	ProfilId	Information	Periodique	Detail	ServiceName	ProfilName
7	NULL	2017-06-01	2017-06-01	Service Script Se...	e1ab8870-58ac-...	NULL	NULL	NULL	Service Script Se...	SP_TFSS_Custo...
0	NULL	2017-05-01	2017-05-01	Service Script Se...	e1ab8870-58ac-...	Labor Day	True	NULL	Service Script Se...	SP_TFSS_Custo...
1	NULL	2017-01-01	2017-01-01	Service Script Se...	e1ab8870-58ac-...	New Year Day	True	NULL	Service Script Se...	SP_TFSS_Custo...
2	NULL	2017-04-17	2017-04-17	Service Script Se...	e1ab8870-58ac-...	Easter Monday	NULL	NULL	Service Script Se...	SP_TFSS_Custo...
3	NULL	2017-05-25	2017-05-25	Service Script Se...	e1ab8870-58ac-...	Ascension	NULL	NULL	Service Script Se...	SP_TFSS_Custo...
4	NULL	2017-06-05	2017-06-05	Service Script Se...	e1ab8870-58ac-...	Whit Monday	True	NULL	Service Script Se...	SP_TFSS_Custo...
5	NULL	2017-07-21	2017-07-21	Service Script Se...	e1ab8870-58ac-...	National Day	True	NULL	Service Script Se...	SP_TFSS_Custo...
6	NULL	2017-08-15	2017-08-15	Service Script Se...	e1ab8870-58ac-...	Assumption Day	True	NULL	Service Script Se...	SP_TFSS_Custo...
8	NULL	2017-11-11	2017-11-11	Service Script Se...	e1ab8870-58ac-...	Armistice Day	True	NULL	Service Script Se...	SP_TFSS_Custo...
0	NULL	2017-05-01	2017-05-01	Service Script Se...	b32ab2d6-ad56-...	NULL	True	NULL	Service Script Se...	SP_TFSS_Techni...
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

- Result of the stored procedure when we are in closed day.



- **Result of the stored procedure when there is no closed day.**





OpeningHour ➔ Table containing the data configured in the portal for the "Opening Hours" tab

SMDC18022\M500...dbo.OpeningHour

recid	StartTime	EndTime	DateException	VocalMessage	Information	OpenDay	...	MessageId	ServiceId	ProfilId	LanguageFile	SoundId
14	08:00:00	17:00:00	NULL	NULL	NULL	4	...	NULL	Service Script Se...	e1ab8870-58ac-...	NULL	NULL
15	08:00:00	16:00:00	NULL	NULL	NULL	5	...	NULL	Service Script Se...	e1ab8870-58ac-...	NULL	NULL
16	08:00:00	13:00:00	NULL	NULL	NULL	6	...	NULL	Service Script Se...	e1ab8870-58ac-...	NULL	NULL
12	08:00:00	17:00:00	NULL	NULL	NULL	2	...	NULL	Service Script Se...	e1ab8870-58ac-...	NULL	NULL
13	08:00:00	19:00:00	NULL	NULL	NULL	3	...		Service Script Se...	e1ab8870-58ac-...	NULL	NULL
17	08:00:00	17:00:00	2017-06-12	NULL	NULL	1	...	Social movement	Service Script Se...	e1ab8870-58ac-...	NULL	NULL
0	08:00:00	17:00:00	NULL	NULL	NULL	1	...	NULL	Service Script Se...	b32ab2d6-ad56-...	NULL	NULL
18	08:00:00	17:00:00	2017-06-19	NULL	NULL	1	...	Social movement	Service Script Se...	e1ab8870-58ac-...	NULL	NULL
19	08:00:00	19:00:00	2017-06-07	NULL	NULL	3	...	Technical problems	Service Script Se...	e1ab8870-58ac-...	NULL	NULL
1	08:00:00	17:00:00	NULL	NULL	NULL	2	...	NULL	Service Script Se...	b32ab2d6-ad56-...	NULL	NULL
3	08:00:00	17:00:00	NULL	NULL	NULL	1	...	NULL	Service Script Se...	b32ab2d6-ad56-...	NULL	NULL
4	08:00:00	17:00:00	NULL	NULL	NULL	5	...	NULL	Service Script Se...	b32ab2d6-ad56-...	NULL	NULL
11	12:30:00	17:00:00	NULL	NULL	NULL	1	...		Service Script Se...	e1ab8870-58ac-...	NULL	NULL
10	08:00:00	12:00:00	NULL	NULL	NULL	1	...	NULL	Service Script Se...	e1ab8870-58ac-...	NULL	NULL
NULL	NULL	NULL	NULL	NULL	NULL	NULL		NULL	NULL	NULL	NULL	NULL

- Result of the stored procedure when we are in business hours

SQLQuery6.sql - ...22\AdminAcp (56))

```
USE [WebCustomerSettings]
GO

DECLARE @return_value int

EXEC    @return_value = [dbo].[ReadOpeningHoursbyProfilId]
        @ServiceName = N'Service Script Settings',
        @ProfilId = N'e1ab8870-58ac-434e-a6e8-8e63fda65ed6'

SELECT  'Return Value' = @return_value

GO
```

Results | Messages

	recid	DateException	VocalMessage	Information	OpenDay	MessageId	ServiceId	ProfilId	LanguageFile	SoundId
1	19	2017-06-07	NULL	NULL	3	Technical problems	Service Script Settings	e1ab8870-58ac-434e-a6e8-8e63fda65ed6	NULL	NULL
2	13	NULL	NULL	NULL	3		Service Script Settings	e1ab8870-58ac-434e-a6e8-8e63fda65ed6	NULL	NULL

	Return Value
1	2

- Result of the stored procedure when we are out business hours

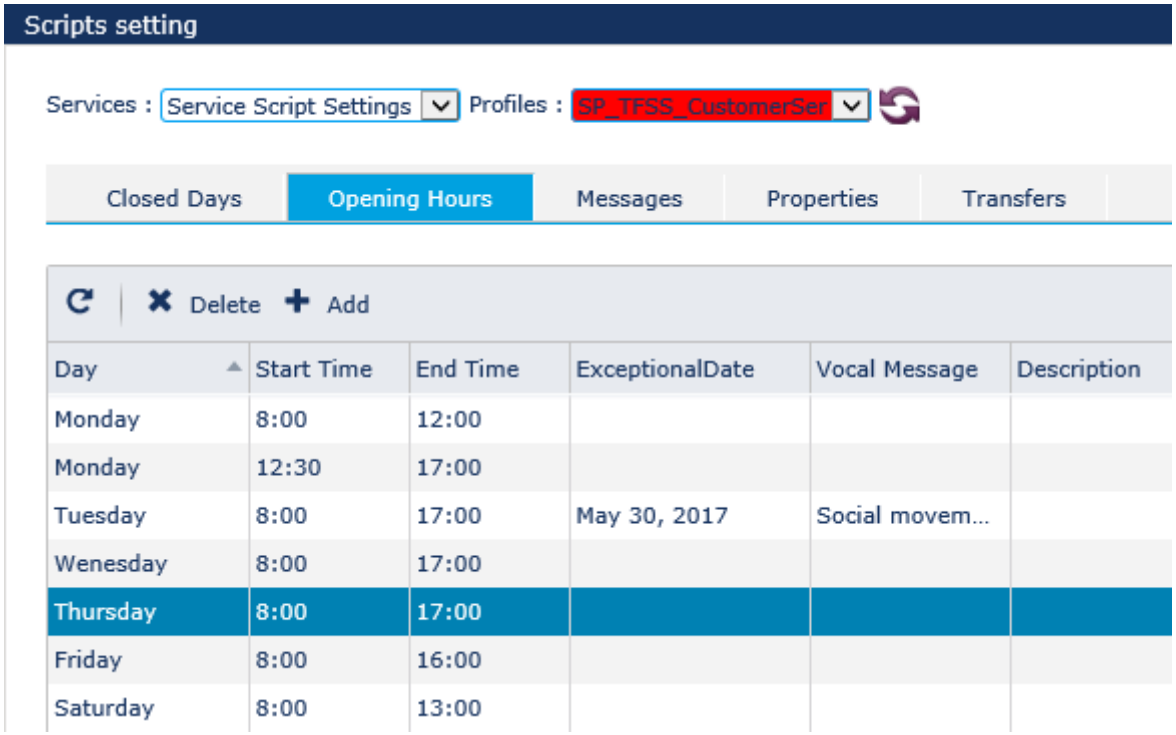
SQLQuery21.sql -...2\AdminAcp (62))*

```
USE [WebCustomerSettings]
GO

DECLARE @return_value int

EXEC    @return_value = [dbo].[ReadOpeningHoursbyProfilId]
        @ServiceName = N'Service Script Settings',
        @ProfilId = N'e1ab8870-58ac-434e-a6e8-8e63fda65ed6'

SELECT  'Return Value' = @return_value

GO
```

Results | Messages

	recid	DateException	VocalMessage	Information	OpenDay	MessageId	ServiceId	ProfilId	LanguageFile	SoundId

	Return Value
1	0



Note:

The ”Vocal Message” column is linked with the ”MessageId” field of the SQL table ”OpeningHours”.The ”Day” column is stored as an integer in the ”OpenDay” field of the SQL database. Therefore Monday correspond to the day 1 and Sunday to the day 7

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11 TROUBLESHOOTING AID

11.1 GENERAL INFORMATION

This chapter is a troubleshooting aid using events which can be encountered by the various profiles of operators.

This chapter does not describe all the potential events which can occur.

These events are grouped whenever possible by application of main feature concerned, knowing that the malfunction symptom can appear in an application (e.g. Statistics Builder) and its resolution must be part of another application (e.g.: M5000 CC Administrator).

- Problems related with **starting** (see § 11.2),
- Problems related with **installation/configuration** (see § 11.3),
- Problems related with the **M5000 CC Server** application (see § 11.4),
- Problems related with the **Statistics Builder** application (see § 11.5),
- Problems related with the **M5000 CC Media Server** application (see § 11.6),
- Problems related with the **M5000 CC Administrator** application (see § 11.7),
- Problems related with the **M5000 CC Service Manager** application (see § 11.8),
- Problems related with the **M5000 CC User** application (see § 11.9),
- Problems related with the **M5000 CC Portal** application (see § 11.10),
- Problems related with the **M5000 CC Wall Display** application (see § 11.11),
- Problems relating to **Reporting Web Service** (see Section 11.12)
- Problems related with **web media** (see Section 11.13)
- Problems relating to **Conference Bridge** (see Section 11.14)
- General problems (**FAQ**) (see § 11.15).

11.2 PROBLEMS RELATED TO STARTING

This paragraph groups the problems detected when the application is started, following the installation of other software or changing a path or untimely file deletion.

Tableau 11.1 TROUBLESHOOTING PROBLEMS DETECTED WHEN THE APPLICATION STARTS (1/3)

Symptoms	Probable cause	Resolution
System error &H80004015 (-2147467243) on server start-up: The following error appears when the server is started: System error &H80004015 (-2147467243). The class is configured to be executed as a security ID different from that of the caller.	Known cases in which this error has occurred are: • During setup, a certain Windows account is specified for DCOM configuration, then the server is started in interactive mode from another Windows account: • The Windows password was modified after: • A wrong password was entered in the setup.	Restart the setup, choose the Repair option and pay attention to the specified Windows account (with its domain name) and password. In the first case, if you restart the server in the Windows account specified during setup, you can solve the problem without choosing Repair.
Error in form load (error number 75): Message box: "Error in form load. Error number 75. Error description: Path not found". (Form loading error. Error Nr 75: path not found).	This problem occurs if Internet Explorer 4 is not installed.	Check if Internet Explorer 4 is correctly installed.
Trouble with the configuration of the applications : With the M5000 CC Server application: *"Unexpected error: Quitting"*. (Unexpected error: the application will stop) With the M5000 CC Media Server: *"Run-time '50003': Unexpected error"* (Run-time '50003': Unexpected error) With the M5000 CC Administrator application: *"Unexpected error"* With the M5000 CC Service Manager application: *"Unexpected error"* With the M5000 CC User application: *"Unexpected error: code=50003 Unexpected error"* (unexpected error: code=50003 Unexpected error (with the ***[Retry]*** and ***[Cancel]*** buttons).	The problem results from the configuration of the applications: a DLL or OCX file was probably replaced through the installation of another application after installing the product.	Check the version and the date of each '.DLL' and '.OCX' installed by the setup. The complete list of the versions and dates of installed '.DLL' and '.OCX' can be found on the installation disk, in the SETUP.LST file. (We already had this problem with an old version of Comctl32.ocx installed on an other product)

Tableau 11.1 TROUBLESHOOTING PROBLEMS DETECTED WHEN THE APPLICATION STARTS (2/3)

Symptoms	Probable cause	Resolution
Invalid path to the Server Message box: *"The Server has detected an invalid path. Check your Command line Argument (Server Root Directory:)"* (The Server has detected an invalid path. Check the arguments of the command line (Server root directory)).		Check the command line argument used for the shortcut to the M5000 CC Server and verify the path to the "M5000 CC File Structure". The M5000 CC Server application has the following command line arguments: • /Exe "*<File Structure Root Directory>"* where <Files Structure Root Directory> is the path of the root directory of the File Structure. This path must be a fully qualified network name (Two first letter must be \\). This path has to be enclosed between quotes.
Invalid path to the DBLocalization.mdb (error -2146622501) Message box: "*The M5000 CC Server is not started. Error in initializing language in the application. Error Number: -2146622501. Error description: The register 'DBLocalization Path' under 'Software\Dialog Systems\Agora\General Information' is not a database path"* (the M5000 CC Server is not started. Error in initializing current language. Error Nr -2146622501: the 'DBLocalization Path' register located in 'Software\Dialog Systems\Agora\General Information' is not a database path).	You may encounter this kind of trouble when you try to modify the path of the applications.	You cannot simply change the name of a directory or move the applications in an other directory and modify the shortcuts. You have to un-install all the applications and re-install them in the directory you want. See "Installing the product" (see § 9.2). Otherwise, check the location of the DBLocalization.mdb database (by default in the '\Program Files\M5000 CC' directory).
Path of the "DBLocalization.mdb" database not valid (error -2146622501): Message box: *"The M5000 CC Server is not started. Error in initializing language in the application. Error Number: -2146622501. Error description: The register 'DBLocalization Path' under 'Software\Dialog Systems\Agora\General Information' is not a database path"* (the M5000 CC Server is not started. Error in initializing current language. Error Nr -2146622501: the 'DBLocalization Path' register located in 'Software\Dialog Systems\Agora\General Information' is not a database path).	The problem comes from the differences between the register value and the real path of the DBLocalization.mdb database.	Check if the DBLocalization.mdb is correctly installed in the right directory (by default C:\Program Files\Dialog Systems).

Tableau 11.1 TROUBLESHOOTING PROBLEMS DETECTED WHEN THE APPLICATION STARTS (3/3)

Symptoms	Probable cause	Resolution
Invalid path to the DBLocalization.mdb (error -2146622501) *"HandlerLanguage: Unexpected Error. Error number: -2146622501. Description The register 'DBLocalization Path' under 'Software\Dialog Systems\Agora\General Information' is not a database path" (HandlerLanguage*: Unexpected error Err# -2146622501. Description: the 'DBLocalization Path' register located in 'Software\Dialog Systems\Agora\General Information' is not a database path).	The problem comes from the differences between the register value and the real path of the DBLocalization.mdb database.	Check that the DBLocalization.mdb database is correctly installed in the right directory (by default C:\Program Files\M5000 CC).
Trouble with the DBLocalization database (Run-time error 91) *"Run-time error '91': Object variable or With block not set" and a Dr Watson kills the application who was starting*. variable 'Object' or unconfigured 'With' block. Dr Watson ended the application).	The DBLocalization.mdb database may be missing.	Check the existence of the database (default directory: "C:\Program Files\M5000 CC").
Error in DBEngine (error 429): Message box: *"HandlerDBEngine: Unexpected Error in DBEngine Err#429Description: ActiveX component can't create object*: unexpected error in DBEngine Err#429. Description: an ActiveX component cannot create an object."	A DLL is probably missing.	Check all the '.DLL' in the directory '\Program Files\Common Files\Dialog Systems' (by default). You should have: • AgoraSystems.dll • AgoraTapi.dll • DMNode.dll • IVRNode.dll • Outbounds.dll • ProjectServer.dll • SharedLocalization.dll • Sysnode.dll • UINode.dll
Office installation window opens whenever the application is run: In a configuration using Microsoft Office 2000, the Office 2000 Premium SR-1 installation window opens whenever an application is run (both when an M5000 CC application is run and when an Office application is run directly).	Microsoft is aware of this problem which is due to the absence of some keys in the registers. In fact the UILanguage, HelpLanguage, InstallLanguage keys do not appear in the registers.	The problem is solved by carrying out the procedure described in the following article: Microsoft Article: **http://support.microsoft.com/default.aspx?scid=kb%3ben-us%3b265194**. The procedure described in this article must be applied on each PC concerned, under the PC's user account. Once the problem is solved, if repairs are later carried out on M5000 CC, the Office installation program is no longer run, and the applications work correctly.

11.3 PROBLEMS RELATED TO INSTALLATION/CONFIGURATION

Tableau 11.2 SOLVING INSTALLATION/CONFIGURATION PROBLEMS (1/12)

Symptoms	Probable cause	Resolution
An error which occurs while updating the drivers for Aladdin USB keys (HASP Device Driver API error) may occur during M5000 CC installation. After validating the error message, the M5000 CC installation program ends correctly.	The M5000 CC installation program tries to install or update the drivers for Aladdin USB keys. Therefore, the problem may occur if the corresponding device is being used.	In this case, the error message may be ignored without any impact on the M5000 CC installation.
Trouble with a setup that suddenly fails: The Setup seems to work properly but then fails without warning. The application is blocked (not responding with the task manager).	This kind of problem occurs if you don't have the right to install a software.	You have to be administrator of the machine to be able to install a software.
Problem supervising IVR resources and user extensions: After at least 5 minutes call, the IVR resources and user extensions are seen as being free, whereas their calls are not completed yet. A message appears regularly in the M5000 CC Server: "*A* CSTA *connection has been marked disappeared for a special reason too long ago. The connection will be cleaned (call xxxx on device yyyy, cause: resynchronization thanks to QueryDevice (agent state)*)."	If this message appears regularly, there is a configuration program between the PBX and M5000 CC. In fact, a resynchronisation mechanism is used by M5000 CC to know the status of an extension, but the PBX does not communicate this status.	Check: • That the PBX version contains the DV_02550 development, and • That this feature is actually activated in the PBX (bit 3 in DCF 397 must be set to 0) If these two points are impossible to achieve, M5000 CC's behaviour can be changed so it can interface with a non-compatible PBX. This change is made by setting the register "HKEY_LOCAL_MACHINE\Software\ Dialog Systems\CSTA\Use agent state of QueryDevice for calls resynchronization" to the value "0". Then, restart CSTA supervision to ensure it is taken into account. This change in the M5000 CC's behavior deactivates the call resychronizing mechanism. However, it reduces the robustness of M5000 CC in case of temporary failure of the PBX (e.g. restarting a cluster or a networked PBX). Therefore, we **strongly recommend** leaving the resynchronizing mechanism active and ensuring the PBX supports this feature.

Tableau 11.2 SOLVING INSTALLATION/CONFIGURATION PROBLEMS (2/12)

Symptoms	Probable cause	Resolution
DNIS problem on IVR resources: When calling a Service using IVR, the DNIS received by M5000 CC does not correspond to the number formed, but the number of the group to which IVR resources belong. Note : If you have not defined this group number as DNIS for a Service, the following message appears in the M5000 CC Media Server: "Caution ! A call not addressing the M5000 CC Media Server was received; no Service version ("Beta" or "Production") is associated with DNIS xxxx)".		M5000 CC requires the PBX to provide the DNIS in the "Redirection Device" field of the CSTA events. To this end, check: • That the PBX version contains the DV_02534 development, and • That this feature is properly activated in the PBX (the DCF 207 must be set to 1). If these two points are impossible to achieve, M5000 CC's behaviour can be changed so it can interface with a non-compatible PBX. This change is performed by setting the register "HKEY_LOCAL_MACHINE\Software\ Dialog Systems\CSTA\Read DNIS on IVR resources in Called Device field" to a value other than "0". Then, restart CSTA supervision to ensure it is taken into account. This change in M5000 CC behaviour makes it possible to obtain a correct DNIS for calls with IVR. However, in a multi-server configuration (M5000 CC networking), it is then impossible to transfer calls from a site without IVR to a site with IVR.
The Link CSTA disconnects and reconnects regularly.	Problem of X25 addresses in a multisite configuration.	If you are in multisite configuration, check that the last two digits of the CSTA server's X25 addresses defined in the PBX are not identical (PBX configuration).
Problem to shift into the "Ready" status: An agent cannot shift into the "Ready" mode whereas its extension is supervised. In the server's connection messages, the following error appears for this extension: Warning: an error has occurred. *Error code = -2146221504, Error description = A CSTA request failed: SetFeature(Device: 3523, Call: Logged out, Agent ID: 0, CSTALink: CSTA 1 server, Invoked: 0x6) Request - Error: State error, Source error=AgoraCSTA"*.		Check that the extension is properly defined in the PBX, and more particularly that it is part of a grouping.
Problem disconnecting the CSTA link: The CSTA link disconnects every minute and reconnects instantly, but no extension is supervised.		In the configuration of the PBX, check that the CSTA port used is not in the "Non delimited" mode, but actually in the "TPKT" mode.

Tableau 11.2 SOLVING INSTALLATION/CONFIGURATION PROBLEMS (3/12)

Symptoms	Probable cause	Resolution
Problem with the PlayVoiceMessage node - Solution with SVI The "PlayVoiceMessage" node plays nothing, although the Dialogic card is installed correctly.		Check if you are using the correct channel to play sounds. See how to configure this M5000 CC Media Server resource (in sheet U-341).
DCOMconfiguration for Windows 95: There is no 'DCOMcnfg' under Windows 95. We are thus unable to configure it.		The common solution is to install Internet Explorer who configure correctly DCOM for our applications.
DCOM configuration for Windows 98		• On the MSDOS command line, you have to enter the '**dcomcnfg**' command. the **"Distributed COM Configuration Properties"**window opens. • In the **Default Properties** tab: • The ***[Enable Distributed COM on this computer]*** option must be checked. • The ***{Authentication Level}*** and the ***{Impersonation Level}*** must be set to **"(None)"** and **"Impersonate"** only for the PC's not located on the M5000 CC Server domain. • In the **{Applications}**tab, double-click on**"CookiesServer"**: the **"CookiesServer.Connection Properties"** window opens. in the **"Location"** tab: the name must be that of the computer hosting the M5000 CC Server application (***[Run application on the following computer]*** option checked). • The first default protocol you are using for the application should be the same as the first default protocol used for the M5000 CC Server (usually we use the TCP/IP protocol). This can avoid a DCOM timeout problem.

Tableau 11.2 SOLVING INSTALLATION/CONFIGURATION PROBLEMS (4/12)

Symptoms	Probable cause	Resolution
DCOM configuration for Windows NT (for the PC where the M5000 CC Server application is running)		**DCOM configuration for Windows NT (for the PC where the M5000 CC Server application is running):** • On the MSDOS command line, you have to enter the '**dcomcnfg**' command. the **"Distributed COM Configuration Properties"**window opens. • In the **Default Properties** tab: • In the **'Default Security'** tab: Everyone should have Access permission and Launch permission. • In the **{Applications}**tab, double-click on**"CookiesServer"**: the **"CookiesServer.Connection Properties"** window opens. • in the **"Location"** tab: the name must be that of the computer hosting the M5000 CC Server application (***[Run application on the following computer]*** option checked). • and in the **'Identity'** tab: • Check the ***[The interactive user]*** option or • In the case of the service mode (automatic start see § 9.3.2), check the ***[This user]*** option.

Tableau 11.2 SOLVING INSTALLATION/CONFIGURATION PROBLEMS (5/12)

Symptoms	Probable cause	Resolution
DCOM configuration for Windows NT (for the PC who connects to the M5000 CC Server application)		**DCOM configuration for Windows NT (for the PC connected to the M5000 CC Server application):** • On the MSDOS command line, you have to enter the '**dcomcnfg**' command. the **"Distributed COM Configuration Properties"**window opens. • In the **Default Properties** tab: • The ***[Enable Distributed COM on this computer]*** option must be checked. • The ***[Authentication Level]*** and the ***[Impersonation Level]*** must be set to **"(None)"** and **"Impersonate"** only for the PC's not located on the M5000 CC Server domain. • In the **{Applications}**tab, select the **"CookiesServer.Connection"** application, and click ***[Properties]***. • In the **{Location}** tab, the PC name must be the name of the computer on which the M5000 CC Server is installed (***[Run application on the following computer]*** option checked). • The first default protocol you are using for the application should be the same as the first default protocol used for the M5000 CC Server (usually we use the TCP/IP protocol). This can avoid a DCOM timeout problem.
DCOM Configuration for Windows 2012 (for the PC where the M5000 CC Server application is running) **Follow the setting procedure in case the server is hosted in M5000CC in a Active directory domain and that agents want to use applications CC M5000 User Service or Remote Administrator. Example with an domain named:FR and an agent group** FR\grps2acp1	DCOM Error 70	

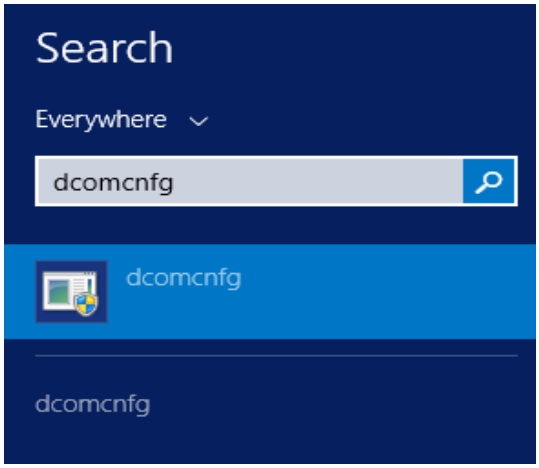
Tableau 11.2 SOLVING INSTALLATION/CONFIGURATION PROBLEMS (6/12)

Symptoms	Probable cause	Resolution

Requirement: no firewall between ACP server and Agent Machine

For example, an “Agent” group created in Domain Controller : here **grps2acp1**

1. Launch Dcomcnfg



2. Click (right) On "My Computer\properties"

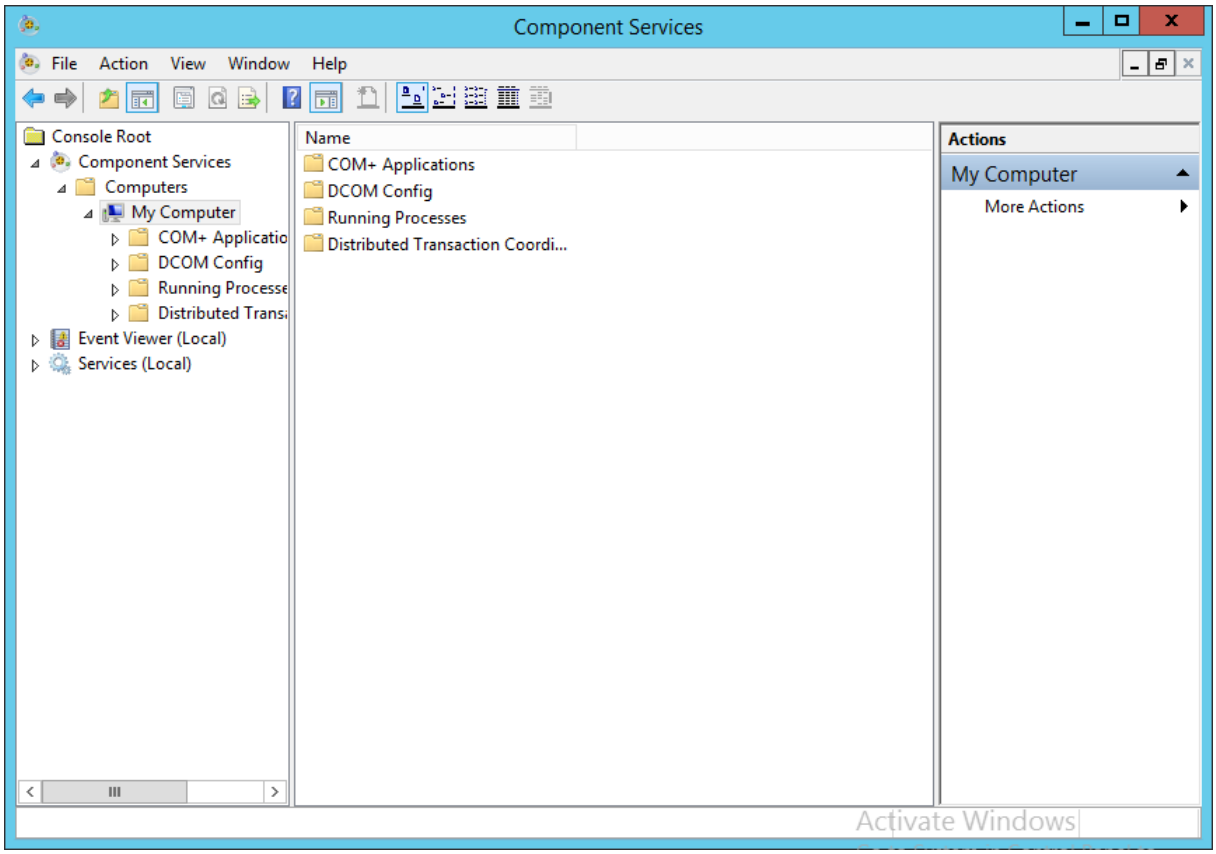
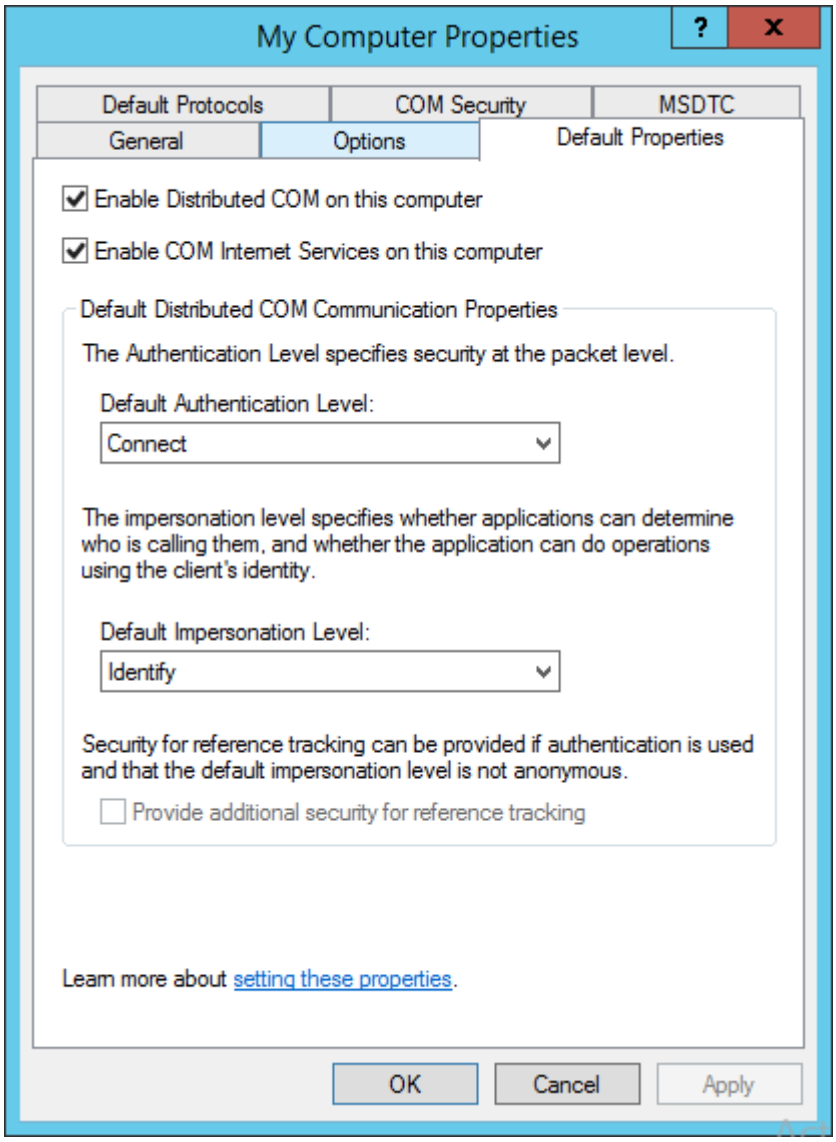


Tableau 11.2 SOLVING INSTALLATION/CONFIGURATION PROBLEMS (7/12)

Symptoms	Probable cause	Resolution

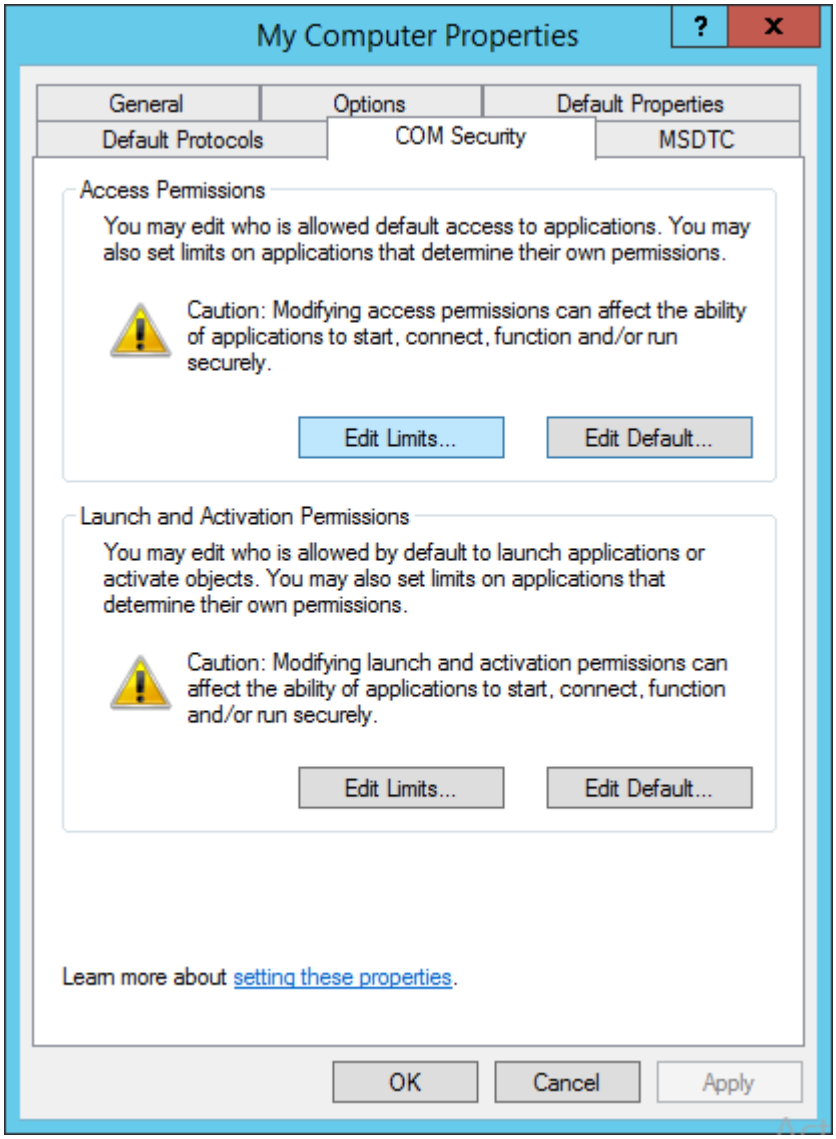
3. Check "Enable Distributed COM on this computer" and **"Enable Com Internet Services on this computer"**



4. In «COM Security» Tab, configure «Launch and Activations

Set access permissions and launch for DCOM applications for agent groups

Tableau 11.2 SOLVING INSTALLATION/CONFIGURATION PROBLEMS (8/12)

Symptoms	Probable cause	Resolution
		

Push repeatedly the four buttons "Edit Limits" and "Edit Default" buttons.

Tableau 11.2 SOLVING INSTALLATION/CONFIGURATION PROBLEMS (9/12)

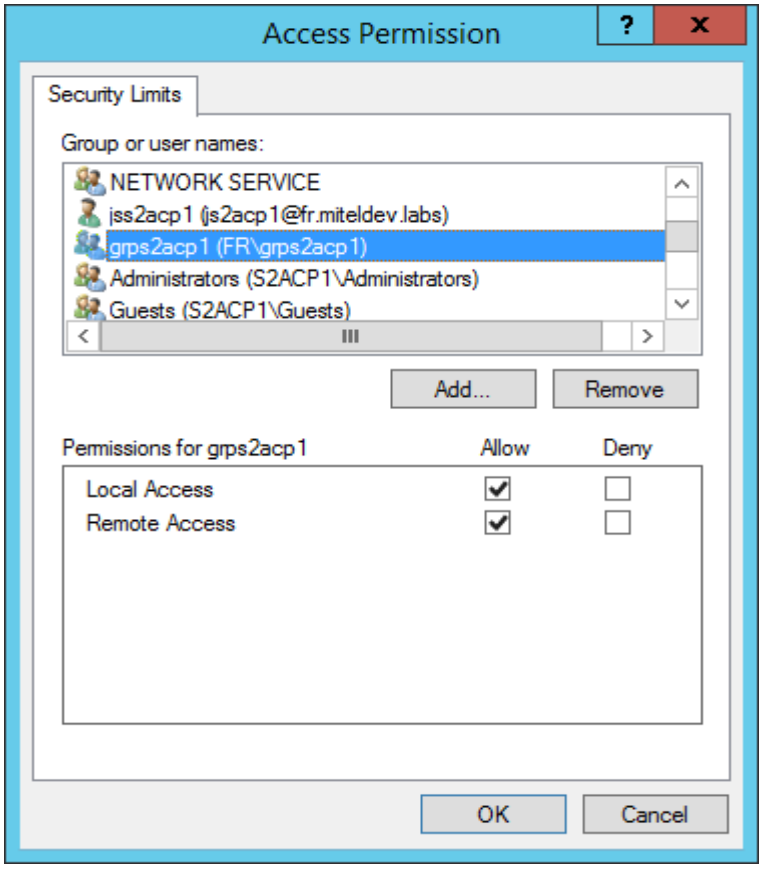
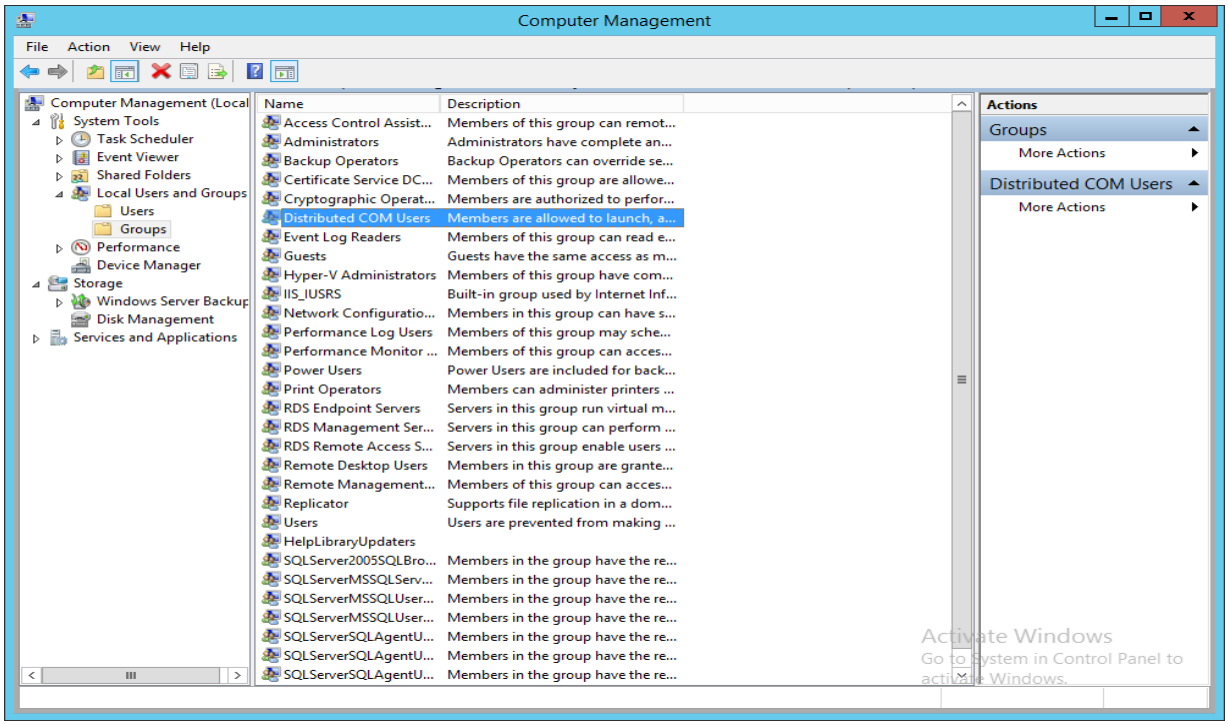
Symptoms	Probable cause	Resolution
		

Tableau 11.2 SOLVING INSTALLATION/CONFIGURATION PROBLEMS (10/12)

Symptoms	Probable cause	Resolution

5. Start Computer Management Console M5000 CC Server



6. Add "FR\gprs2acp1" agnets group in Distributed Com Users Group

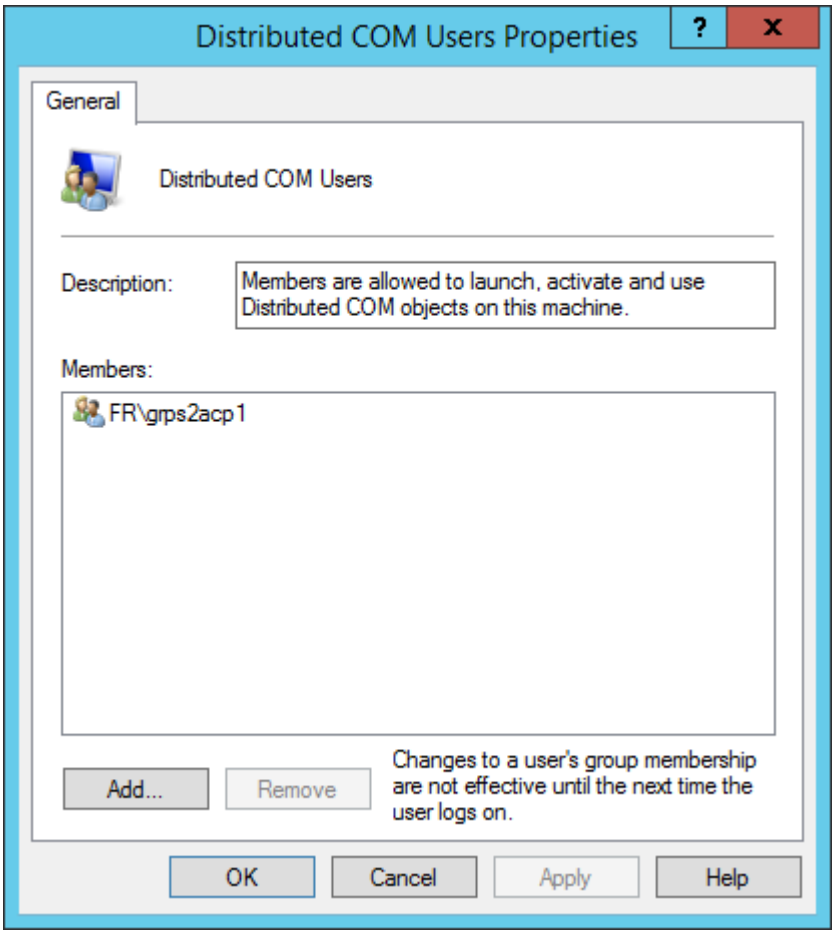


Tableau 11.2 SOLVING INSTALLATION/CONFIGURATION PROBLEMS (11/12)

Symptoms	Probable cause	Resolution
The system freezes completely (if Internet Information Server (IIS) versions 5 and 6 are used).	By default, the IIS web server backs up a log in form of text files in the hard disk system partition, that is the partition containing the operating system. Moreover, no mechanism is integrated into IIS for purging the files from the log. As these files are accumulated indefinitely, after some time there will be no space on the system partition.	• Use the IIS management console to modify the directory in which the log files are backed up. Choose a partition other than the system partition, or a network directory. • No matter the directory chosen, delete or store these files at regular intervals. For this, write a batch file which deletes files that have been stored for more than one month (for example), and use the Windows scheduled task wizard or the online AT command tool to execute this batch file regularly.
Problem opening the M5000 CC database After a directory synchronisation attempt, the following message is displayed: Cannot open database "ACP" requested by the login. The login failed. The login failed for user '...' '	The file ACP_DB is not available in the M5000 CC root directory.	• With the tool SQL Server Configuration Manager, delete the ACP database and restart the Setup.
Problem consulting or modifying a personal directory in a domain controller After an attempt to synchronise or modify a personal directory, the following error is generated: #NASWebService:ERROR: Cannot open database "ACP" requested by the login. The login failed. The login failed for user 'NT AUTHORITY\NETWORK SERVICE' ...'	Installing the M5000 CC Server and SQL server in a domain controller.	• In the SQL directory server properties window, untick the option "Use M5000 CC Server account to log on" and enter a login with administrator rights on the SQL server. To define the personal directory connector, in the Options tab, tick the option "specific user" for authentication and enter a login with administrator rights on the SQL server. • Configure the SQL server (the SQL server can be configured using the tool Microsoft SQL Server Management Studio). Add the login NT AUTHORITY\NETWORK SERVICE (Security -> Logins). In the server properties window (right-click the SQL Server M5000 CC instance and select properties), select Permissions. In the right part, select the new account NT AUTHORITY\NETWORK SERVICE and give it the authorisation to modify and see any database.

Tableau 11.2 SOLVING INSTALLATION/CONFIGURATION PROBLEMS (12/12)

Symptoms	Probable cause	Resolution
Problem of Windows authentication with a remote SQL server	Installing SQL Server on a specific PC	**Your application's service account is normally the network service account, which is the default account with ASP.NET in Windows 2003 and IIS 6.0 or any personalised service account.** To allow access to the database with the network account: • Create an SQL Server login account for the network service account. If the database is on another server, create an account with the identity **domainName\WebServerMachineName$**. You can use Enterprise Manager or the following SQL command line: **exec sp_grantlogin 'domainName\WebServerMachineName$'** • Create a user for the database, and use the login account with this user. You can also use the following SQL command line: use targetDatabase **go** **exec sp_grantdbaccess 'domainName\WebServerMachineName$'** **go** • Add the database user to the list of database users. • Give this user sufficient rights (authorise the execution of the stored procedures and do not give direct access to the tables). • **http://msdn2.microsoft.com/en-us/library/ms998292.aspx**

11.4 PROBLEMS RELATED TO THE APPLICATION M5000 CC SERVER

This is a list of problems you might encounter in the **Server logged messages**.

The purpose of this list is to provide work around possibilities for known problems; this is not an exhaustive list of logged error messages:

Tableau 11.3 TROUBLESHOOTING M5000 CC SERVER APPLICATION PROBLEMS(1/3)

Symptoms	Probable cause	Resolution
Trouble starting the Server (error 429): The Server is not started! Error in initializing current language. Error Nr 429: an ActiveX component cannot create an object."	A DLL is probably missing.	Check if all the '.DLL' are present in the directory '\Program Files\Common Files\Dialog Systems' (by default). You should have: • AgoraSystems.dll • AgoraTapi.dll • DMNode.dll • IVRNode.dll • Outbounds.dll • ProjectServer.dll • SharedLocalization.dll • Sysnode.dll • UINode.dll
Trouble initializing the Server (error 3045): Unexpected error: code = 3045 ; description = impossible to use "PC_SERVEUR\D:\DATAM5000CC\M5000CC\Versions\Agora1.cfg"; the file is currently used; Message = Fatal error during server initialisation".	Two Servers try to connect to the same M5000 CC File Structure.	Check if you don't have two instances of the Server running on your PC or on an other PC with the M5000 CC File Structure you try to use.
Trouble initializing the Server (error 3051): Unexpected error: code = 3051 ; description = Microsoft Jet database engine cannot open the file "\\PC_SERVER\DiskD\M5000CCFileStructure\Versions\Versions.cfg". It is already opened in the exclusive mode by another user, or you must be authorized to view its data; Message = Fatal error during the initialisation of the Server".	• The Versions.cfg database is blocked by an other application (for example Access). • the Versions.cfg database is read-only (this can happen when you copy directly the M5000 CC File Structure from the CD).	• Find the application which uses exclusively a database from the M5000 CC File Structure you are using and close it. • Change the read-only properties of all databases in the M5000 CC File Structure to writable.
Trouble initializing the Server (error 3265): Unexpected error: code = 3265 ; description = Element cannot be found in this collection ; message = Fatal error during Server initialisation".	The problem may come from the Versions.cfg database.	Check if no tables are missing in the Versions.cfg database (You should have two tables named 'Configuration' and 'Versions').
Trouble initializing the Server (error 3356): Unexpected error: code = 3356 ; description = You attempted to open a database already open in exclusive mode by the 'awa' user on the "PC_SERVEUR" machine. Restart when the database becomes available; Message=Fatalo error while initializing the Server".	A database is blocked by an other application (for example Access).	Find the application which uses exclusively a database from the M5000 CC File Structure you are using and close it.

Tableau 11.3 TROUBLESHOOTING M5000 CC SERVER APPLICATION PROBLEMS(2/3)

Symptoms	Probable cause	Resolution
Trouble initializing the Server (error 11010): Fatal error while initializing the Server Error code 11010 (Unexpected error while reinitializing the IVR resource (character buffer dump, code: 6))".		Enter a Dialogic channel name in the “Resources” window of the call server configuration in the Administrator application. See how to configure this M5000 CC Media Server resource (in sheet U-341).
Trouble initializing the Server (error 99160): "Unexpected M5000 CC Server error: code = 99160 ; description = Dialog Root Directory non valid: the full network path is required. The invalid argument is: D:\DATAM5000CC\M5000CC; Message = Fatal error while initializing M5000 CC Server”. Additional Information: After a few minutes, a window displays prompting you to enter the correct version of the Versions.cfg file. The correct network path is specified, but the M5000 CC Server does not run.		**1)** Modify the command line argument of the M5000 CC Server to insert the network path. The M5000 CC Server application has the following command line arguments: • /Exe "*<File Structure Root Directory>"* where <Files Structure Root Directory> is the path of the root directory of the File Structure. This path must be a fully qualified network name (Two first letter must be \\). This path has to be enclosed between quotes. **2)** In the registry, the "agorafilestructure" field must be a valid network path pointing to M5000 CC File Structure.
Trouble initializing the Server (error 99215): "Unexpected error on the Server: code = 99215 ; description = A fatal error occurred because the version of the application is older than the version of your files structure ; Message = Fatal error while initializing the Server".		In the Versions.cfg database, in the 'Configuration' table, you can try to set the 'Major', 'Minor' and 'Revision' fields to the values corresponding to the version and revision of the product you installed. Remember that this operation may cause problems (for example, you risk to lose a script when a node defined in a revision didn't exist before). The best way is to re-install the M5000 CC File Structure corresponding to the version and revision you are using.
Trouble starting the broadcast: "Caution ! The M5000 CC Server has detected the saturation of a broadcast buffer".	This is due to a mechanism which protects the system against a buffer saturation. In practice, there will never be more than two broadcasts in the datagrams to send collection. If the system attempts to add a third one, the second one is removed from this collection and the new one is sent.	To restore the situation, you must change at least one of the following parameters in the M5000 CC Administrator application: • Number of datagrams to send (see ***{Broadcast}*** tab on Sheet U-312) • Frequency of broadcast (see ***{Broadcast}***tab on Sheet U-312) • Size of the datagram (see Sheet U-347).

Tableau 11.3 TROUBLESHOOTING M5000 CC SERVER APPLICATION PROBLEMS(3/3)

Symptoms	Probable cause	Resolution
Problem with M5000 CC Server errors after copying M5000 CC structure files: I have copied M5000 CC File Structure files from a DVD and the M5000 CC Server logs some errors.		All databases used by the M5000 CC must be writable. Files copied from the DVD are write-only files. Normally, you must install a M5000 CC File Structure via the setup program, but you can copy it from the DVD and change all file attributes from read-only to writable. See "Installing the product" (see § 9.2).
Trouble for the M5000 CC Server to recognize a call: **When making calls to a Service, the M5000 CC Server can't recognize the call.**		• Check if the Service you are calling is in Production or in Beta. • Check if there is an 'OffHook' node in the script. • Check if the DNIS you are using in order to call the Server is correctly defined for the Service you want. • Check if there is at least one resource in waiting call when the call is made. • Check if no other Server refers the same DNIS.
FAQ : I cannot read the trace messages of the M5000 CC Server applications (see Sheet U-23)	The **"Debug Viewer"** application must be run before starting the trace tool.	Installing the "**dbgview.exe"** application (see Installation Manual).

11.5 PROBLEMS RELATED TO THE APPLICATION STATISTICS BUILDER

Since the Statistics Builder application doesn't have any interface, the errors that may occur are logged in the **Server logged messages** window. This is a list of problems the user may encounter.

The purpose of this list is to provide work around possibilities for known problems; this is not an exhaustive list of logged error messages:

Tableau 11.4 TROUBLESHOOTING STATISTICS BUILDER (1/5) APPLICATION PROBLEMS

Symptoms	Probable cause	Resolution
Trouble with the DSN in the external replication (error IM002) The following message is logged in the Server logged messages window: "IM002 : [Microsoft][ODBC Driver] The DSN was not found and no default driver has been specified. Number: 0" "ODBC--the call failed. Number: 3146" Butler is running in external replication mode BUT NO REPLICATION CAN BE DONE !!	The DSN defined in the M5000 CC Administrator application properties does not correspond to any existing DSN.	Modify the name of the DSN, using a name defined in the ODBC data source M5000 CC Administrator application (see ***{Statistics}*** tab on Sheet U-312).
Problem of user name in external replication (error 28000): The following message is saved in the Server connection messages window: "ODBC--the call failed. Number: 3146" Butler is running in external replication mode BUT NO REPLICATION CAN BE DONE !!	The user name defined in the M5000 CC Administrator application properties is not valid for access to the external database.	Modify the user name in the properties of the M5000 CC Administrator application (see ***{Statistics}*** tab on Sheet U-312).
Trouble with the password defined for the external replication (error 28000): The following message is logged in the Server logged messages window " 28000 : [Oracle][ODBC][Ora] Authorization specification not valid. Number: 1017" "IM006: [Microsoft][ODBC Driver] Failure of the driver's SQLSetConnectAttr attribute. Number: 0" "ODBC--The call failed. Number: 3146" Butler is running in external replication mode BUT NO REPLICATION CAN BE DONE !!	The password defined in the M5000 CC Administrator application properties is not valid for access to the external database. The external database is an oracle database.	Modify the password in the properties of the M5000 CC Administrator (see ***{Statistics}*** tab on Sheet U-312).

Tableau 11.4 TROUBLESHOOTING STATISTICS BUILDER (2/5) APPLICATION PROBLEMS

Symptoms	Probable cause	Resolution
Trouble executing a stored procedure (error S1000 - Access) The following message is logged in the **Server logged messages** window: " S1000: [Microsoft][Microsoft Access ODBC Driver] The parameter Param3 has no default value. Number: -3084 "ODBC--The call failed. Number: 3146" Stored1, this stored procedure cannot be executed testRuns_Call, this table was not completely replicated.	When Statistics Builder replicates data from the 'Statbuffer.cst' database to an external database, it uses a stored procedure from the external database (see definitions in Section 1.4). Each stored procedure has a different parameters. When Statistics Builder calls the stored procedure with less parameters than in the definition of the stored procedure, the previous message is logged in the **Server logged messages** window.	Load into the M5000 CC Administrator application the configuration database in "Production" (see definition in Section 1.4). Check the number of parameters for the stored procedure and the table given by the error message. The number must be equal to the number of parameters of the stored procedure defined in the external database.
Problem executing a stored procedure with an external Oracle database (error S1000: ORA-06550 (Oracle)) "S1000: [Oracle][ODBC][Ora]ORA-06550: line 1, column 7:PLS-00306: number or type of arguments invalid in calling "'STORED1'ORA-06550: line 1, column 7:PL/SQL: Query ignored Number: 6550" "ODBC--The call failed. Number: 3146" Stored1, this stored procedure cannot be executed testRuns_Call, this table was not completely replicated.	When Statistics Builder replicates data from the 'Statbuffer.cst' database to an external database, it uses a stored procedure from the external database (see definitions in Section 1.4). Each stored procedure has a different parameters. When Statistics Builder calls the stored procedure with less parameters than in the definition of the stored procedure, the previous message is logged in the **Server logged messages** window.	Load into the M5000 CC Administrator application the configuration database in "Production" (see definition in Section 1.4). Check the number of parameters for the stored procedure and the table given by the error message. The number must be equal to the number of parameters of the stored procedure defined in the external database.
Problem executing a stored procedure with an external Oracle database (error S1000: ORA-06502 (Oracle)): "S1000: [Oracle][ODBC][Ora]ORA-06502: PL/SQL: numerical or value error: error converting character into number "ORA-06512: on line 1 Number: 6502" "ODBC--The call failed. Number: 3146" Stored1, this stored procedure cannot be executed testRuns_Call, this table was not completely replicated.	When Statistics Builder replicates data from the 'Statbuffer.cst' database to an external database, it uses a stored procedure from the external database (see definitions in Section 1.4). Each stored procedure has a different parameters. When Statistics Builder calls the stored procedure with a parameter value that does not fit the type of parameter defined in the stored procedure, the previous message is saved in the **Server logged messages** window.	Load into the M5000 CC Administrator application the configuration database in "Production" (see definition in Section 1.4). In the "Replication Definition" window (see Sheet U-320), chose the line corresponding to the stored procedure and the table given by the error message, display the properties ("Configure Stored Procedure" window). For each parameter, check the type of the field associated with it. This type must be the same as the corresponding parameter of the stored procedure in the external database.

Tableau 11.4 TROUBLESHOOTING STATISTICS BUILDER (3/5) APPLICATION PROBLEMS

Symptoms	Probable cause	Resolution
Problem executing a stored procedure with an external Oracle database (error S1000: ORA-01401 (Oracle)): "S1000: [Oracle][ODBC][Ora]ORA-01401: value inserted to high for column ORA-06512: at "SYSTEM.STORED1", line 6" "ORA-06512: on line 1 Number: 1401" "ODBC--The call failed. Number: 3146" Stored1, this stored procedure cannot be executed test_Call, this stored procedure cannot be executed.	By calling some stored procedures, the Statistics Builder replicates data in the external database (see definition in Section 1.4). The data are saved in different fields of the external database tables. If the size of the data is longer that the size of the field where the data is saved, the previous message is logged in the **Server Logged messages** window.	The size of the field must be changed in the external database.
Trouble executing a stored procedure (error 22005): Symptoms " 22005: [Microsoft][Microsoft Access ODBC Drive] Type of data incompatible in expressing the criteria. Number: -3030 "ODBC--The call failed. Number: 3146" Stored1, this stored procedure cannot be executed testRuns_Call, this table was not completely replicated.	When Statistics Builder replicates data from the 'Statbuffer.cst' database to an external database, it uses a stored procedure from the external database (see definitions in Section 1.4). Each stored procedure has different parameters. When the Statistics Builder calls the stored procedure with a parameter value that does not fit the type of defined in the stored procedure, the previous message is saved in the **Server logged messages** window. This message appears when the external database is an Access database.	Load into the M5000 CC Administrator application the configuration database in "Production" (see definition in Section 1.4). In the "Replication Definition" window (see Sheet U-320), chose the line corresponding to the stored procedure and the table given by the error message, display the properties ("Configure Stored Procedure" window). For each parameter, check the type of the field associated to it. This type must be the same as the corresponding parameter of the stored procedure in the external database.
Trouble loading the replication model: "Butler: error when loading the replication model, database replication" \\PC_name\M5000CCFileStructure\ReplicationDB\StatConfigx.mdb" Butler is in the external replication mode BUT NO REPLICATION CAN BE PERFORMED !!!!".	The replication configuration database (see definition in§ 1.4) may be corrupted.	In the M5000 CC Administrator, load the configuration database. If loading is correct, check the following elements: • the stored procedures are present, • the replication definition exists. If loading in the M5000 CC Administrator application does not work, use another configuration database.
The replication is not done in the external database but no error messages are logged in the Server logged messages windows		Some items need to be checked: • The external database defined in the DSN is not the database where the statistics must be saved. • The ***[External]*** replication option is not ticked in the properties window (see ***{Statistics}***tab, Sheet U-312) in the M5000 CC Administrator application. • The DSN uses no driver.

Tableau 11.4 TROUBLESHOOTING STATISTICS BUILDER (4/5) APPLICATION PROBLEMS

Symptoms	Probable cause	Resolution
Trouble during the replication process: The Statistics Builder uses some stored procedures to replicate data from the "LongTermStatistics.mdb" database to the external database. The following problems may occur: • The number of parameters of a stored procedure defined by the administrator is different than the one defined for the same stored procedure in the external database. • A "LongTermStatistics.mdb" field, used as parameter, is not the right type (example: a string is put in place instead of a digital value). • The size of some strings. A string length may be bigger than the size of the corresponding field in the external database. For an external replication to Oracle, an error can occur. For all these cases, there is a message logged in M5000 CC Server to indicate which stored procedure has a problem.		Tips for the external replication process: The purpose of external replication is to back up data from the "LongTermStatistics.mdb" database to an external database. You can define different types of data in the "LongTermStatistics.mdb" database: date fields, numeric fields, Boolean fields, etc.... These fields (source fields) are copied into other fields (destination fields) of the external database. It's better to have the same type of field for the source and the destination. If not, depending of the external database, a conversion or an error can occur. For Boolean values, according to the Access convention, the 'True' value is represented by -1 and the 'False' value is represented by 0.
Trouble connecting to the external database: The database may be located on a PC other than the one on which the Statistics Builder is running. In this case, a network problem may stop the replication process.	The Statistics Builder checks whether all the replications are successful. In case of failure, the Statistics Builder always considers that the connection is lost and tries to reconnect every minute.	Check the network and the PC hosting the external database.
Managing statistics replication errors If the Statistics Builder application encounters a problem when replicating statistical records, both in the standard and external modes, it tries replicating these records every 15 seconds for a number of retries which can be set. This parameter may be modified in the registers under "HKEY_LOCALE_MACHINE/SOFTWARE/Dialog Systems/AGORA/General Information/Maximum of Attempt in replication". By default, its value is set at 60 (i.e. 1/4 hour of retries). See the following 2 cases:		

Tableau 11.4 TROUBLESHOOTING STATISTICS BUILDER (5/5) APPLICATION PROBLEMS

Symptoms	Probable cause	Resolution
1) Replication of non consolidated tables The table containing the information related with statistical records for which one (or several) new replication attempts must be performed is stored in the "StatBuffer.cst" database. As all other tables in this database, it is circular (and hence temporary). This parameter can be modified in the registers under "HKEY_LOCALE_MACHINE/SOFTWARE/Dialog Systems/AGORA/General Information/Table size for TemporyErrors". By default, its value is set to 12500.	Additional comments: If, after these successive retries, some statistical records cannot be replicated, and if external replication was chosen in the M5000 CC Administrator application, the records are moved to the "StatRecycler.cst" database. These latter contain the same tables as the StatBuffer.cst database, but are meant to be viewed when replication is impossible, even after retries. During the night procedure, the Statistics Builder application removes the older records and compresses the "StatRecycler.cst" database using the same parameters as those defined for the "LongTermStatistics.mdb" database if, and only if, standard replication was chosen.	To modify the register values **"Maximum of Attempt in replication"** or **"Table size for TemporyErrors"**, apply the following rule to prevent loosing any record in case of a problem during replication: Table size for TemporaryErrors = 2.5 x Maximum of Attempt in replication x number of calls handled by your M5000 CC per minute Example: 12500 = 2.5 x 60 x 5000/60
2) Replication of consolidated tables: The external replication process of the consolidated tables applies to the consolidated tables of the "LongTermStatistics.mdb" database.	Additional comments: If, after these successive retries, statistical records have still not been replicated, the records are edited, and the value -1 is set in the "updated" field.	• You can also modify the value of the "Maximum of Attempt in replication" registers. • When a record is being replicated (retry process), it is not cleared during archiving.

11.6 PROBLEMS RELATED TO THE APPLICATION M5000 CC MEDIA SERVER

This is a list of troubles you might encounter in the M5000 CC Media Server logged messages.

The purpose of this list is to provide work around possibilities for known problems; this is not an exhaustive list of logged error messages:

Tableau 11.5 TROUBLESHOOTING M5000 CC MEDIA SERVER APPLICATION PROBLEMS(1/3)

Symptoms	Probable cause	Resolution
Trouble with a dialed number not recognized by the Server "Caution ! A call not addressing the M5000 CC Media Server was received; no Service version ("Beta" or "Production") is associated with DNIS xxxx)".	When somebody dials a number reserved for the M5000 CC Server (a number of the DNIS range reserved for a Service), if no Service is in Beta or Production, the M5000 CC Server can't recognize the dialed number.	When a Service is no longer in Beta or Production, don't keep the DNIS ranges associated to this Service. Note: a PBX configuration problem can also trigger this message (see "DNIS problem on IVR resources" in Section 11.3).
Trouble initializing the Server (error 5): Fatal error while initializing the Server Object error code = 5 (argument or procedure call invalid)."	Incorrect call server configuration.	See how to configure the M5000 CC Media Server (in sheet U-341).
Trouble with the Dialogic board (error 9) Symptoms "Unexpected error when managing an event not associated with a run (code: 9 ; description = cannot set the Dialogic channel in hang up."	The Dialogic board is not correctly configured (Dialogic test programs can be used to know if the problem comes from the Dialogic configuration).	Configure the Dialogic card properly. See "Installing the Dialogic hardware and software" in the Installation Manual).
Trouble initializing the Server (error 94): Fatal error while initializing the Server. Error code: 94 (Invalid use of null value).	Incorrect call server configuration.	See how to configure the M5000 CC Media Server (in sheet U-341).
Trouble connecting to the Server (error 429): Cannot connect to the Server. Check that the Server is running and that the network connections are operating normally error 429: an ActiveX component cannot create an object."	Incorrect call server configuration.	See how to configure the M5000 CC Media Server (in sheet U-341).
	The application you are using is an other version than the version of the M5000 CC Server.	Check the versions number in the About windows. If they are different, reinstall the latest version.
	You might have a problem of DCOM security.	Modify the DCOM configuration with the Dcomcnfg program on the MSDOS command line.
DCOM error: Call Server stop (error 462): "Error 462 – Remote server PC does not exist or is unavailable." The call server application has been forced to stop to prevent it from being damaged.	This problem may occur when Call Server and the server are running on two different PCs. This error may occur after a recurrent problem on the LAN, involving both PCs.	Check the DCOM configuration, as well as the LAN configuration to ensure that you have a reliable connection between the two PCs.

Tableau 11.5 TROUBLESHOOTING M5000 CC MEDIA SERVER APPLICATION PROBLEMS(2/3)

Symptoms	Probable cause	Resolution
Trouble initializing the Server (error 11010) (codes 0 to 3): • Fatal error while initializing the Server Object error code = 11010 (Failure when initializing the Dialogic (when opening the dxxxB1 card) ; code = 0." • Fatal error while initializing the Server Object error code = 11010 (Failure when initializing the Dialogic (when setting the calibrated opening time, code: 3."	There is no Dialogic board on the computer or the Dialogic board is not correctly configured (Dialogic test programs can be used to know if the problem comes from the Dialogic configuration).	Configure the Dialogic card properly. See "Installing the Dialogic hardware and software" in the Installation Manual).
	The Streams Environment for Dialogic is missing.	Install the Streams Environment for Dialogic.
	The Dialogic card is not correctly configured in the Administrator application's "Resources" window.	See how to configure this M5000 CC Media Server resource (in sheet U-341).
Trouble initializing the Server (error 11010) (code 6) Fatal error while initializing the Server Error code 11010 (Unexpected error while reinitializing the IVR resource (character buffer dump, code = 6)).	The IVR resource is not correctly configured in the Administrator application's "Resources" window.	See how to configure this M5000 CC Media Server resource (in sheet U-341).
Trouble initializing the Server (error 11010): Fatal error while initializing the Server Error code 11010 ('\\PC_M5000 CC\D\M5000CC FilesStructure\versions\versions.cfg' is not a valid access path). Check that the access path is correct and...).		In the registry, the "agorafilestructure" field must be a valid network path pointing to the file structure.
Trouble initializing the Server (error 11012): Fatal error while initializing the Server Object error code = 11012 (Failure in TCP/IP initialization: cannot access socket (error 10049))".		• In the administrator, media server menu, correct the IP address in "Ipaddress". This address can be found with the command line "IPconfig" in the MS-DOS prompt. • The TCP/IP configuration is incorrect: the IP address may be invalid.
Trouble creating Mail Session (error 32003) "Failure to create Mail Session (code is 32003, description is Error in loading DLLMAPI DLL)".	This problem occurs when the e-mail connection is not properly configured or doesn't exist.	You have to configure the e mail connection:- • The "Email Session" field in the administrator, media server menu, must be filled in with the right name. • Otherwise, there is no consequence for the M5000 CC Server but you will not be able to send e-mails with M5000 CC.
Trouble while initializing run for automatic inbound resource (error -2147023174): Fatal error while initializing run for automatic inbound resource (code = -2147023174 ; description = Automation error).	The problem may come from the shut down of the M5000 CC Server.	Restart the M5000 CC Server, then the M5000 CC Media Server.

Tableau 11.5 TROUBLESHOOTING M5000 CC MEDIA SERVER APPLICATION PROBLEMS(3/3)

Symptoms	Probable cause	Resolution
Problem with the M5000 CC Media Server and the "DSN name": The M5000 CC Media Server is blocked and a window appears, asking the 'DSN Name' (the IVR script uses a DLL in a FunctionCall node).		It is necessary to ensure that there is no 'Opendatabase' method called with an empty string. The problem can come from an unloaded DLL in overload case. The result is that some variables are not reset. This can trigger a call with an empty string for a database name. It is dangerous to create a DLL, with the hypothesis that the DLL is always unloaded after a call.
Problem with the "RequestAction" node: Symptoms The return code value for a "RequstAction" is 3078 if the synchronous option is ticked, and there is no error if the asynchronous option is ticked (ODBC).	This error occurs when only one table name is provided, when duplicated tables exist or when synonyms with different properties exist. In this case, the Microsoft Access database engine resolves the ambiguous reference by choosing one of the properties of the duplicated table, in alphabetical order.	This problem can be avoided by using the SQLPASSTROUGTH option, available in the node definition (see Section 13.2.1.3).
FAQ : I cannot read the trace messages of the applications. M5000 CC Media Server	The **"Debug Viewer"** application must be run before starting the trace tool.	Installing the **"dbgview.exe"** application (see Installation Manual).

11.7 PROBLEMS RELATED TO THE APPLICATION M5000 CC ADMINISTRATOR

Symptoms	Probable cause	Resolution
Trouble connecting a user: I want to connect a user but nothing happens when I click ***[OK]*** (the phone entry is selected) and there's no error message.		The phone you entered is not defined by the Administrator. Check if you have correctly entered the phone identificator and verify it with the Administrator (see Sheet U-324).
Trouble opening a Service: I created a Service, but I can't open it with the M5000 CC Service Manager (the Service doesn't appear in the offered choice).		Be sure the Service manager is a manager of that particular Service. After a Service is created, select (using the M5000 CC Administrator application) the person who will be the manager for this service. A Service manager can't open a Service if he's not manager of this Service. See "How to manage a Service" (see Sheet U-321).
Trouble removing an extension I can't remove an extension.		Be sure that no user is connected on the phone where this extension is defined. See "How to remove an extension" (see Sheet U-325).
Trouble removing a phone: I can't remove a phone.		Be sure that no user is connected on this phone. See "How to remove a phone" (see Sheet U-324).
Trouble with mailboxes In the M5000 CC Administrator application, when I try to add an e-mail inbox (see Sheet U-321), I cannot find all the e-mail boxes defined when I created my profile.	Such a behavior can be due to two reasons: • The e-mail boxes defined for the profile are already defined in other Services (normal operation) • The e-mail boxes of the profile were defined in different languages: check by opening the profile using Outlook; all e-mail boxes are displayed in the language used for their creation.	To manage the e-mails correctly, the e-mail boxes of the profiles used by M5000 CC must be in the same language. the language of an e-mail box is provided when the mailbox is opened for the first time in a profile, the mailbox language will be used by Outlook to open the profile in question.

Tableau 11.6 TROUBLESHOOTING M5000 CC ADMINISTRATOR APPLICATION PROBLEMS

11.8 PROBLEMS RELATED TO THE APPLICATION M5000 CC SERVICE MANAGER

Tableau 11.7 TROUBLESHOOTING M5000 CC SERVICE MANAGER APPLICATION PROBLEMS(1/2)

Symptoms	Probable cause	Resolution
Trouble with a blocked Service Manager: I am editing a report through the ***[Statuses > Reports]*** menu of the M5000 CC Service Manager application or a connection to the reporting web server and an Access connection dialogue box opens. When I press ***Cancel***, the M5000 CC Service Manager is blocked for 2 minutes. If Access is added to a Workgroup Information File (e.g. system.mdw), when you edit a report through the ***[Status > Reports]*** menu of the M5000 CC Service Manager application or a reporting web sever connection, and if you click ***[Cancel]*** in the Access connection dialogue box, the M5000 CC Service Manager remains blocked for 2 minutes. After 2 minutes, a message appears, indicating that it is unable to start MS Access.		There's **nothing** you can do for the waiting time. If you press ***Cancel***, you will wait 2 minutes.
Trouble with outbound calls: Outbound calls seem not running.		• Verify that the Service is open (in the M5000 CC Service Manager). • Check also calls that have to be made in the dial list of the M5000 CC Service Manager of this outbound Service and verify that enough are made at this moment.
Trouble using a specific database: The script doesn't work when I try to use a specific database.		• Check the validity of the network path (e.g. \\PC_SERVER\C\Database\\Database.mdb). See "EnterRecords" node (in Section 13.2.1.4) or "RequestAction" node (in Section 13.2.1.3). • Check also the properties of the database (must not be read-only).
Trouble with the GetRecords node: Symptoms The return code value of a GetRecord node is 3024 (Couldn't find file) but the path seems correct.		Check the validity of the network path (e.g. \\PC_SERVER\C\Database\\Database.mdb). See "GetRecords" node (in Section 13.2.1.4).
Trouble playing a film: During the execution of a "PlayVoiceMessage" node in a non interactive voice Server tree, the film is not played, and the following message displays in the Server connection messages: *"Cannot play a message for the "CallId": There is no monitored call pit in group "GroupeId"*.		Check there are extensions in the call pit group associated with the film selected in the node.

Tableau 11.7 TROUBLESHOOTING M5000 CC SERVICE MANAGER APPLICATION PROBLEMS(2/2)

Symptoms	Probable cause	Resolution
Trouble playing an external sound: An external .wav sound file is not played in a PlayVoiceMessage node and the path seems correct.		Check the validity of the network path (e.g. \\PC_SERVER\C\WavFiles\Sound.wav). See "PlayVoiceMessage" node (in Section 13.2.2.4). Also check that the right cards have been configured (if you specified a card that is not used, the Dialogic configuration may be correct but the lines do not return anything). See how to configure the M5000 CC Media Server (in Section 9.3.1).
Errors while selecting or checking an e-mail address An error occurs while using the ***[A...]*** and ***[Check names]*** buttons in the service properties edit window or in SaveVoiceMail and SendEmail node configuration.	Outlook is installed but another application is configured as default messaging program.	In Windows Internet Options, select Microsoft Office Outlook as e-mail transmission program.

11.9 PROBLEMS RELATED TO THE APPLICATION M5000 CC USER

Tableau 11.8 TROUBLESHOOTING M5000 CC USER APPLICATION PROBLEMS(1/2)

Symptoms	Probable cause	Resolution
Trouble connecting a user I am trying to connect a user, but a message displays: *"Invalid versions files path. Please, select a new one"*. Select another path).		If an M5000 CC Server application is running, click the ***[Browse...]*** button to open the file Versions.cfg used by the M5000 CC Server (search the Version directory in the M5000 CC File Structure on the PC where the M5000 CC Server runs).
Trouble loading the User application (error 10015): • While loading the M5000 CC User application: "Unexpected project Server error: code = 10015" (Unexpected error of the Project Server: code = 10015 (with ***[Retry]***/***[Cancel]***)). • If you click on ***[Retry]***: "Unexpected Server error: code = 99011 'PROD_SERV_xxx' is already in the IDEProject collection" (unexpected Server error: code = 99011 'PROD_SERV_xxx' is already in the "IDEProject" collection).	A DLL is probably missing.	Check all the '.DLL' in the directory '\Program Files\Common Files\Dialog Systems' (by default). You should have: • AgoraSystems.dll • AgoraTapi.dll • DMNode.dll • IVRNode.dll • Outbounds.dll • ProjectServer.dll • SharedLocalization.dll • Sysnode.dll • UINode.dll
Trouble with a blocked call: The UI script begins but the phone doesn't ring. The M5000 CC Server immediately changes the status of the extension to but the caller's phone is still ringing. After a few seconds, the status is turned to idle and the communication is stopped.		• Check the phone model (if you are using an analogue phone with a digital connection or a digital phone with an analogue connection). • Check the phone correctly works. • Check the phone's connections. • Be sure you are connected with the M5000 CC User on the right phone extension.
Trouble using monitored resources: • Agents hang up the phone but the M5000 CC User application seems sometimes to stay on-line. • Agents pick up the phone but the call is not always transferred. • When hanging up or picking up a monitored phone, the status of the extension (in the M5000 CC Server) doesn't change every time.	A monitored resource may be used as a normal resource.	Check in the administrator, Media server/Resources menu, that the supervised resources are not used.
Problem with the "RequestAction" node: Symptoms The return code value for a "RequestAction" node is 3078 if the synchronous option is ticked (ODBC).	This error occurs when only one table name is provided, when duplicated tables exist or when synonyms with different properties exist. In this case, the Microsoft Access database engine resolves the ambiguous reference by choosing one of the properties of the duplicated table, in alphabetical order.	This problem can be avoided by using the SQLPASSTROUGTH option, available in the node definition (see Section 13.2.1.3).

Tableau 11.8 TROUBLESHOOTING M5000 CC USER APPLICATION PROBLEMS(2/2)

Symptoms	Probable cause	Resolution
Activation of the tracking tool and location for the tracking file: Once the user activates the tracking tool in its M5000 CC User application, the tracking file is put by default in the Temporary directory of the PC.		By default, the traces are saved in the file structure/ statistics/log directory. This directory can be modified in the administrator, media server menu.

11.10 PROBLEMS RELATED TO THE APPLICATION M5000 CC PORTAL

Tableau 11.9 TROUBLESHOOTING M5000 CC PORTAL APPLICATION PROBLEMS

Symptoms	Probable cause	Resolution
The portal responds very slowly in Internet Explorer 7: When you use Windows Internet Explorer 7, the portal responds very slowly if the anti-phishing filter is enabled.	Internet Explorer 7 evaluates the entire web page displayed in one of the portal frames.	To solve this problem, install the latest cumulative security update for Internet Explorer 7. Microsoft Article: **http://support.microsoft.com/?scid=kb%3Bfr%3B928089&x=12&y=15**.
A new window opens when you try to display a report in Excel format in Internet Explorer 7: When you try to open a report in Excel format in Windows Internet Explorer 7, the document may not open in the same window as Internet Explorer. A new Excel 2007 window opens instead to display the document.	When you access some Microsoft Office 2007 documents from Internet Explorer 7, these documents open by default in a new window.	To avoid this problem, change the value of the BrowserFlags entry of the register key HKEY_LOCAL_MACHINE\Software\Classes\Excel.Sheet.8 to 24. Then run Internet Explorer 7 as administrator. Microsoft Article: **http://support.microsoft.com/?scid=kb%3Ben-us%3B927009&x=10&y=16**
During an M5000 CC session, the login message box reopens frequently and unexpectedly.	Configuring the network	One of the solutions may be to use another network address to reach the portal site. - PC name (PC-AZERTY) - IP address (192.168.1.1 - PC name with the DNS suffix (PC-AZERTY.DOMAINE.COM) Another solution may be to check the proxy server configuration (and if it is used, to test it by disabling it in the web client). Another solution may be to check the DNS configuration of the various PCs used.
Some extensions are not available in the portal.	Lost of monitoring or a call present on an associated set.	The availability depends on the monitoring status and also on the reachability. An extension cannot be reachable anymore if the phone is associated to others that are not having the capability to manage multi-lines. e.g.: If an agent has 4 extensions (L1, L2, L3 and L4) on a phone P1 and if extension L1 of the phone P1 is associated to another phone D1 (e.g.: a DETC). When a call is received or made by the phone D1, all extensions of the phone P1 are not available. - L1 will be available again when the call on the phone D1 will be released. - L2, L3 and L4 will be available again when the extension L1 will make or answer a call.

11.11 PROBLEMS RELATED TO THE APPLICATION M5000 CC WALL DISPLAY

Tableau 11.10 TROUBLESHOOTING M5000 CC WALL DISPLAY APPLICATION PROBLEMS

Symptoms	Probable cause	Resolution
All types of displays available are proposed when the M5000 CC Wall Display application is started: Every user can start the M5000 CC Wall Display application. If no wall display type is specified in the command line argument, the application will propose all the display types available at start-up: **Command line argument example**: /EXE "\\pc_SERVER\Disk D\M5000 CC File Structure" /TYPE "WD2"		To change or configure a specific type, the application has to be shut down. The new type has to be specified as command line argument and the application started again.

11.12 PROBLEMS RELATED TO THE "REPORTING WEB SERVICE"

Tableau 11.11 TROUBLESHOOTING "REPORTING WEB SERVICE" PROBLEMS(1/9)

Symptoms	Probable cause	Resolution
Trouble viewing reports (error 3075 / error 2426): The following errors may appear when trying to view some reports: • Unexpected error: code = 3075. Function unavailable in expressing the request... ' Format$...' " or • Unexpected error: code = 2426. The function entered cannot be used in this expression. You should use a DoEvents, LBound, UBound, Spc or Tab function. You should use an SQL aggregating function such as Count, in a design grid or a calculated command or field. Impossible to close MsAccess.		This is due to the 'Format$' which is not accepted by Access. Problem in the ocx references in Access (comctl32.ocx, comdlg32.ocx...). One solution is to use another Reporting.cst database. In the new version of Reporting.cst, the references are automatically refreshed if necessary.
Trouble opening the Reporting database (error 2763): Open the Reporting database: error 2763	If the regional parameters define the period "." as data separator (i.e. in the German configuration), the maskedit box does not initialize properly, and the following error appears: "Unexpected error code= 2763 MaskEDBox has reported the following error: Invalid property value" (Unexpected error code = 2763 MaskEDBox sent the following error: invalid property value)	Changing the regional parameters: use "/" as a date separator.
Trouble creating new reports (error 29028): Create a new report:: error 29028.		When creating new reports, it is necessary to have a default printer, otherwise the 29028 error may appear with the message "Save operation failed".
Trouble opening the Reporting database (error 7866): After selecting the **[Status > Reports]** menu in the M5000 CC Service Manager application, MS Access starts, and the following message is displayed in the M5000 CC Service Manager: *error 7866*: *"Microsoft Access cannot open the database because it is missing or opened exclusively by another user"*.	The problem was due to the existence of an "OldReporting.cst" file with a size of 0 bytes.	Rename the file.

Tableau 11.11 TROUBLESHOOTING "REPORTING WEB SERVICE" PROBLEMS(2/9)

Symptoms	Probable cause	Resolution
Beginning of the week for consolidation Inconsistency in the weekly consolidated reports between what is configured and what is indicated in the reports.	Weekly consolidation is done on the basis of one day of the week defined in a register. By default, the first day of the week is fixed using NLS API (National Language Support), and depends on the regional parameters. For regional parameters corresponding to France, Monday is the first day of the week.	The register used is: "HKEY_LOCAL_MACHINE\SOFTWARE\Dialog Systems\AGORA\General Information\FirstDayOfWeek". The possible values for this register are: • 0 : use NLS API parameters (default value, depending on the regional parameters) • 1 : Sunday • 2 : Monday • 3 : Tuesday • 4 : Wednesday • 5 : Thursday • 6 : Friday • 7 : Saturday This register is used during consolidation (saving statistics in the LongTermStatistics database). The value used is the value of the register database on which M5000 CC is running. This register is also used while generating a report. The value used is the value of the register database where the report server is running. Therefore, if the report server is started on a PC other than the PC on which the M5000 CC Server is run, the same value has to be entered for this register on both PCs. Moreover, if the value 0 is used, the same value has to be entered for the regional parameters. We strongly recommend that you do not use the value 0 when the report server and the M5000 CC Server are not working on the same PC.

Tableau 11.11 TROUBLESHOOTING "REPORTING WEB SERVICE" PROBLEMS(3/9)

Symptoms	Probable cause	Resolution
Trouble viewing reports (Dr Watson, error -2147417851): Display the report: Dr Watson -2147417851 error. MS Access sometimes causes a Dr Watson error. After this error, the M5000 CC Service Manager is not able to run the reporting anymore: the following unexpected error message appears in the M5000 CC Service Manager: code = -2147417851, description: "Method 'Run' of object '_Application' failed".	The error arises after the following actions: • Add a new report, copy of an existing report that contains associated Visual Basic code. • Open (preview) the new report.	How to avoid the Dr Watson ?: • After having added a copy of a predefined report, do not open (preview) the new report. • Open the report in creation mode, click on the **"code"**icon. • Select **[Compile and record all modules]** in the **[Debug]**menu. • Close and restart a connection with the Reporting Web Service (see Sheet U-200). How to repair the reporting DB after a Dr Watson? • Manually run MS Access. • Close and restart a connection with the Reporting Web Service (see Sheet U-200). • Right-click the toolbar and select **[Customize...]** in the pop-up menu. • In the **{Commands}** tab, select the ***{Module design}*** category. Drag-and-drop the ***[Debug Window]*** command to your toolbar. • Close the **Customize** window and click on the new ***Debug Window*** icon on the toolbar. • Select **[References...]** in the **[Tools]**menu. • Remove the reference to the M5000 CC Server. click ***[OK]***. • Display the **References** dialog box again and add the M5000 CC Server. click ***[OK]***. • Select **[Compile and record all modules]** in the **[Debug]**menu. The database is repaired.
Trouble opening Reporting.cst database: Opening Reporting.cst database: Invalid Command Line Argument	The "Invalid command-line arguments." message is due to the fact that the database is opened manually without reference to the Server objects.	You must open it via the **[Status > Reports]** menu in the M5000 CC Service Manager application.
Trouble opening reports: Different error messages can be displayed when opening certain reports meaning that the database is corrupted; e.g. Unexpected error: Type of data mismatch in the expression of criteria or other inconsistent messages such as 'Cannot modify the table structure. Another user is using the table".	Database corrupted.	The solution is to repair and/or compact the database: manually run MS Access, go to **"Tools/Database Utilities"** and select **[repair]** and then **[compact]**.

Tableau 11.11 TROUBLESHOOTING "REPORTING WEB SERVICE" PROBLEMS(4/9)

Symptoms	Probable cause	Resolution
Trouble opening Reporting (error loading an ActiveX control): Open the Reporting database. "The expression "MouseMove" entered as an event property parameter generated the following error: error loading an ActiveX control in one of the forms or reports."	This problem appeared before the setup.	Open the "ReportManagement" form, record it: the problem disappears.
Trouble with rounded values: Statuses Report: rounded values. All average values are rounded. This can cause surprising effects like (0 is 32% of 0 and, simultaneously, 0 is 6% of 0).	The values are rounded up to the unit.	This effect arises when there are not many simultaneous calls.
Rouding error in certain statistical reports: Example: IVR Ports Load Report The IVR Ports Load report displays snapshots of the status of each M5000 CC Media Server IVR ports. These snapshots include the M5000 CC Media Server name, the average number of calls per port and the average number of used ports during the last elapsed time interval. Report on Statuses: The same behavior is observed in reports on statuses: • voice calls, • E-mail, • Web Sessions.	These two last values are computed in the following way: • Average number of calls per port: for each port, we retain the number of handled calls during the last time interval. The average value is computed by summing the number of handled calls for each port, divided by the number of authorized ports. • Average number of used ports: for each port, we retain the number of seconds spent in "Handling call" state during the last time interval. The average value is computed by summing the number of seconds spent in "Handling call" state for each port, divided by the duration (in sec.) of the time interval.	What do these values mean? • The average number of calls per port, multiplied by the number of ports, gives the number of handled calls during the corresponding period. The calls duration has no influence on this value. • The average number of used ports gives an approximation of the required number of ports to be able to handle the calls of the corresponding period. (Note: this way of computing the average number of ports used does not take into account that the calls can be simultaneous...) These statuses are grouped by day and a summary displays the average, minimum and maximum values for each group. A general summary displays the same values for the whole period covered by the report.
Trouble upgrading Reporting (error 3033): "Unexpected error, code = 3033. You don't have the necessary permissions to use the 'Criteria' object. The reporting update failed. It was impossible to reuse your personal components."	This error happened in MS Access after having manually replaced the Reporting.cst file.	Do not replace the "Reporting.cst" file manually.
Trouble upgrading Reporting: **When I start the upgrade of the reporting with one of my OldReporting.cst, the upgrade is very slow (a few minutes), even if I don't have created many personal documents.**		If such a problem occurs, please contact your distributor.

Tableau 11.11 TROUBLESHOOTING "REPORTING WEB SERVICE" PROBLEMS(5/9)

Symptoms	Probable cause	Resolution
Problem displaying reports; the reports overlap to another page: A request to print a report from the "M5000 CC client Reporting" website may result in reports overlapping over two pages.	One of the most probable causes is that the default printer present in the machine hosting the Reporting Server is not compatible with the A4 page format. The reports of the M5000 CC were designed to support only this format.	Change the configuration of the default printer, and select the A4 format for the pages to print.
Display problems for reports, incorrect character font: A request to print a report from the "M5000 CC client Reporting" website may result in reports with invalid character fonts.	One of the most likely causes is that the default printer used on the PC hosting the Reporting Server does not support the "Times New Roman" font, used in the M5000 CC reports.	Modify the configuration of the default printer to accept the use of the "Times New Roman" font.
Problem displaying reports, the reports are incomplete (some parts are missing): A request to print a report from the "M5000 CC client Reporting" website may result in incomplete reports.		Modify (increase) the resolution of the monitor of the PC on which the application is installed (for example, if the monitor's resolution is 800x600, change it to 1024x768.
Impossible to browse through the website used by the M5000 CC Report Server: When connecting to the M5000 CC Report Server using the web interface, you can get to the home page with the user ID and his password, but, whenever these parameters are validated, a new page appears, with the following message: "You are disconnected. Please connect to use this application." This same message is then issued after each connection attempt.	This problem is due to the inability to save temporary "cookies" ("cookies" with a lifetime equal to the duration of the web session) on the machine.	To resolve this problem, change the configuration of the web browser to authorize the use of temporary "cookies". If, in spite of the modification in the browser configuration, the problem remains, please note that certain browsers (e.g. Internet explorer 5.5 and Internet Explorer 6) do not manage "cookies" properly when the URL references a web server present on the LAN and hence the name of the PC contains one or several non-alphanumeric characters other than the dash (-) or period (.). Here is an example of URL causing problems in these browsers: "http://Web_Serveur_1/Web_Site" where "Web_Server_1" is the name of the machine hosting the web server of the M5000 CC Report Server. For more information on the latter point, read the following article on the www.microsoft.com site: "Internet Explorer Cookie Data Can Be Exposed or Altered Through Script Injection". This article bears the Microsoft reference: Q312461

Tableau 11.11 TROUBLESHOOTING "REPORTING WEB SERVICE" PROBLEMS(6/9)

Symptoms	Probable cause	Resolution
Problem generating a report when selecting too many activity codes for the "Agents status and activities" report: A request to print or program an "Agents status and activity" report from the "M5000 CC client Reporting" website may give rise to an error when generated.	If you section a large number of activity or PCP codes, the generation of the report will give rise to the creation and execution of many "SELECT" requests. An error present in the Microsoft jet 4.0 (Access 2000 component) limits this number of "SELECT".	Install the Microsoft jet 4.0 Service Pack 4 or a more recent version.
e-State reports: inconsistencies or multiple date formats: The footer date in the reports is displayed in English (e.g. "Wednesday December 18, 2002" but other parts of the same report includes dates in French (e.g. "décembre", "janvier"). the values of the columns displaying percentages (%) are incorrect, typically multiplied by 100.	This occurs in the following conditions: The M5000 CC Report Server operates on a PC running Windows NT 4.0, the identity (Windows user) under which the M5000 CC Report Server runs is that of the user with regional parameters English, a user different from the latter is logged to the PC of the M5000 CC Report Server, and uses regional parameters in French.	You must: • either install the M5000 CC Report Server on a PC running Windows 2000, • or always use the same regional parameters as those of the M5000 CC Report Server when logging onto the PC concerned.
Web directory access rights: The website user has the possibility to take all possible actions (connecting, creating a program, etc.), except generating reports. When a report generation request is made, the error page appears (error.asp), informing the user that "access is denied".	This problem is due to the fact that the "WebService" component has no right to write in the directory "C:\Program Files\M5000 CC\ReportingWebService\Reports". Since "WebService" is launched by the web server, check that the machine user *"Username"* has rights on this directory.	You must: • Edit the access rights on the **"reports"** directory, • In the **{Sharing}** tab, click the ***[Permissions]*** button. • Grant rights to the user *"Username"* (see note) by checking the **{Authorise}column boxes**. **Note:** *In the **{Name}** frame you can select **"Everybody"** for full access, or you can limit access to some users only).* Report generation from the website works correctly after this access modification.

Tableau 11.11 TROUBLESHOOTING "REPORTING WEB SERVICE" PROBLEMS(7/9)

Symptoms	Probable cause	Resolution
Web reports do not show the same information as standard reports: Reports that are accessible via the Web and which are defined in the LongTermReporting.mdb database are not designed as exact copies of existing Reporting.CST database reports. Some differences may be observed in terms of the selection of records to display, as well as the fields displayed by the reports. **Example: Inbound E-mails (details)** The incoming e-mails (details) report (LongTermReporting.mdb) displays the list of e-mails that M5000 CC will start to process within the date and time interval specified while printing the report. The same reference date/time is used in the consolidated inbound E-mails report. On the other hand, the E-mail details report (Reporting.CST) displays the list of e-mails that arrived in the e-mail server mailbox within the date and time interval specified while printing the report. Moreover, the fields displayed by these two reports differ.		

Tableau 11.11 TROUBLESHOOTING "REPORTING WEB SERVICE" PROBLEMS(8/9)

Symptoms	Probable cause	Resolution
Message box blocks at the access level: No action is possible, the report server no longer responds. At the server level, it can be seen that the report server is making several attempts to start the "LongTermReporting" access database.	If access is started by the reporting server working in service mode, every message box blocks the application, since this message box is no longer visible to the user. **Install the "KillProcess" utility:** To solve this problem, you have to use an internal tool called **"KillProccess"**. It is used to grant full rights for all the processes running on a machine. If this latter does not exist on the machine, carry out the following installation procedure: • "KillProcess" uses two applications: **KillProcess.exe** and **KillProcessService.exe**. • The two files must be placed in the M5000 CC installation directory. • **KillProcessService.exe** must be saved in form of **"service"** using the following command: **Installation** ␣ **Path\KillProcessService.exe** ␣ **/** ␣ **service** to be entered in the **"Run"** window accessed via the Windows **[Start > Run]** menu.	Stop the reporting server, without having to stop the PC. **Note:** *Since the reporting server is running in service, it cannot be stopped in such a problematic situation simply by stopping the service.* Therefore, to stop the reporting server, you have to terminate the following processes (open Windows **"Task manager"** and see the ***{Process}***tab): • -ReportingServer (1) • -ReportingServer (2) • -MSAccess In the Windows **"Services"**window: run the associated **"KillProcess"** service. A window opens, requesting a PID (Process IDentifier). Just enter one by one the problematic process numbers (see note) and click each time on the ***[Kill]*** button, starting with the two "reporting servers" and ending with "MSAccess". **Note:** *You can display the PID numbers in the **"Task manager's"{PID}** column, **{Process}** tab.*

Tableau 11.11 TROUBLESHOOTING "REPORTING WEB SERVICE" PROBLEMS(9/9)

Symptoms	Probable cause	Resolution
Message box blocks at the access level: (continued)		Having stopped the reporting server, restart it in "interactive mode" to see which message box will appear at the access level. You only need to create a shortcut to the executable "ReportingServer" available in the installation directory, and to add to it the "debug" command line. Double-click on this shortcut; the reporting server starts in "interactive mode": the access application should appear. **Repair the access database:** depending on the blocking "message boxes" encountered: • a window that requires a login and a password: carry out a "**join**" to the default access system.mdw in order to prevent any further login request from appearing. • *"Fatal error during previous opening, do you wish to continue opening?"* Answer yes to continue opening, and repair the database via the access **[Tool/Compact]** menu. **Check the correction:** • Return to service mode for the reporting server. • Stop the interactive applications by stopping the "MS Access" and "ReportingServer" tasks, then restart the reporting server service. • Check the overall function of the Web Reporting Service. All the actions should henceforth be possible from the website.
No graph in the ""Inbound calls (Graphic)" report	Microsoft Graph is not installed	Modift theOffice/Access installation and make sure the Microsft graph component is installed. It is available in the Office Tools.

11.13 WEB MEDIA RELATED PROBLEMS

Tableau 11.12 WEB MEDIA TROUBLESHOOTING (1/2)

Symptoms	Probable cause	Resolution
Problem initializing M5000 CC Media Server (error 10048): While initialising M5000 CC Media Server, error 10048, 'Address in Use', may occur since each socket address (IP/port address or protocol) can normally be used only once. This error has been observed in the two following cases (there can be other cases): • The IP address/port has already been used, on the M5000 CC Media Server machine, for an existing socket, or a socket that wasn't closed properly, or one that is still in the process of closing. • If the M5000 CC Media Server is behind a Proxy, IP address/port has already been used by another Proxy Client application located on a different machine or not.	M5000 CC Media Server initialization consists in opening and assigning a TCP/IP socket which receives M5000 CC WebCall Service connection requests. To configure the application, you have to specify a local IP Address and a port the M5000 CC Media Server can use for the socket.	Specify another (free) port in the "Resources" window of the call server configuration in the Administrator application. See how to configure the M5000 CC Media Server (in Sheet 9.3.1).

Tableau 11.12 WEB MEDIA TROUBLESHOOTING (2/2)

Symptoms	Probable cause	Resolution
Problem initializing M5000 CC Media Server (error 10049): During M5000 CC Media Server initialization, error 10049, “Address not available on local machine” may occur. This error has been observed in the following cases (there can be other cases): • The IP address is not valid for the local machine. • The M5000 CC Media Server is located behind a Proxy and the bond failed due to missing or incorrect entries in the Proxy Client file configuration.	M5000 CC Media Server initialization consists in opening and assigning a TCP/IP socket which receives M5000 CC WebCall Service connection requests. To configure the application, you have to specify a local IP Address and a port the M5000 CC Media Server can use for the socket.	The resolution depends on the observed case: • Enter an IP address available for the machine. To get one, open an MS-DOS window and type Ipconfig. • Check the Mspclnt.ini (or Wspcfg.ini) file. For Microsoft Proxy Server 2.0, here are sample lines that have to be placed either in the Mspclnt.ini (Proxy Server side) or Wspcfg.ini (Proxy Client side): [CallServer] ProxyBindIp=<Port>:<ADRESSE_IP_SERVEUR_PROXY> ‘Mandatory line to perform the bond on a Proxy Client machine ServerBindTCPPorts=<Port> same port as on previous line KillOldSession=1 Persistant=1 Where: • <PROXY_SERVER_IP_ADDRESS>is the internal/external IP address of the Proxy if you surf from the network located inside/outside the Proxy Server. • <Port>is a free port between 1 (preferably 1024) and 65535. The bind operation consists in the reservation of an association IPAddress/Port for a socket to establish a TCP/IP connection. The two types of errors observed can be avoided by entering ‘0.0.0.0’ in the field “Listening IP address for the web” in the administrator, media server menu.

11.14 PROBLEMS RELATED TO THE APPLICATION CONFERENCE BRIDGE

Tableau 11.13 TROUBLESHOOTING CONFERENCE BRIDGE APPLICATION PROBLEMS

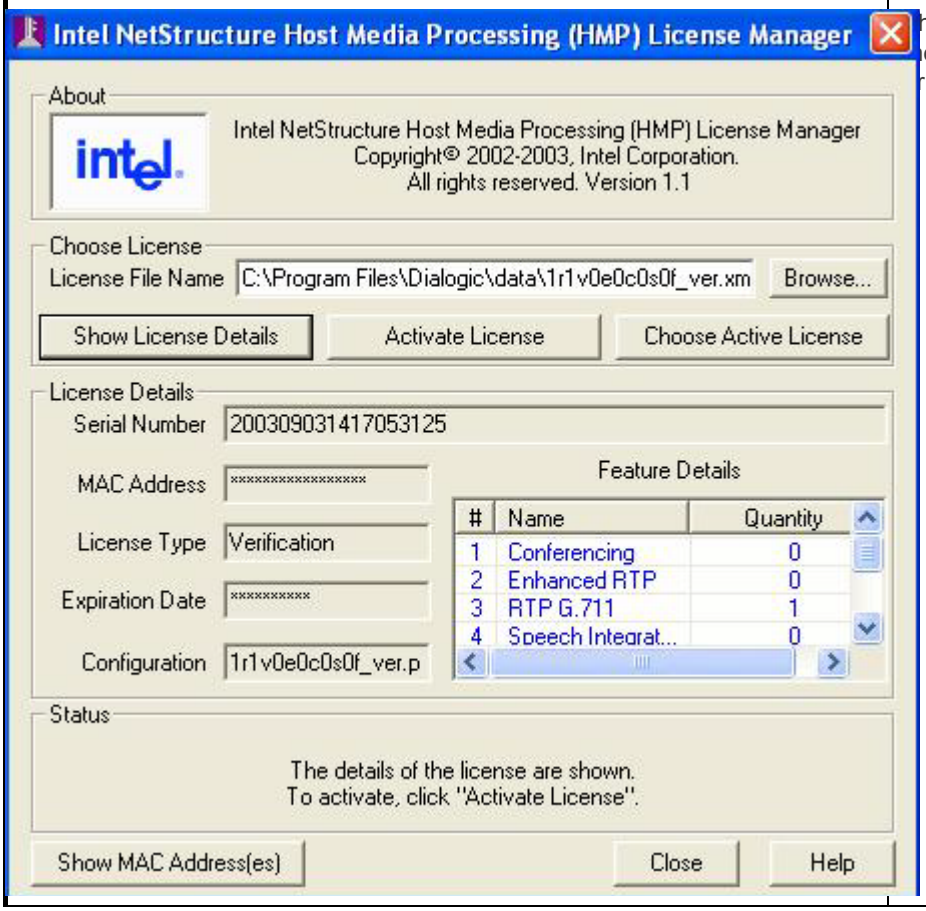
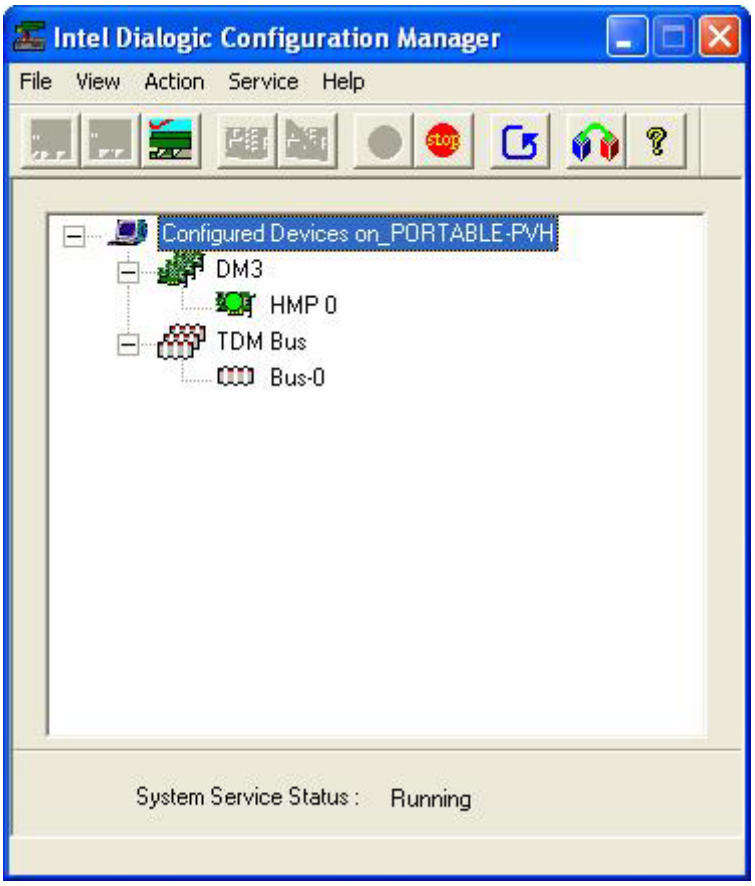
Symptoms	Probable cause	Resolution
Voice quality with the conference bridge is not optimum.	Wrong encoding law.	Change the encoding law.
For information: the quality highly depends on the encoding law used. The choice of this law must be made consciously; it is a decisive VoIP element. Except if you are obliged by bandwidth constraints, use codec G.711 30 mS which ensures quickest voice digitisation as well as the best clarity for the receiver. Moreover, using this law is far less expensive in terms of CPU on the M5000 CC Server PC (compared to G729 and G723). If absolutely necessary, encoding law G729 20 mS may be used with HMP; never use encoding law G723.		
A drift has been observed with conferences.		Modify the HMP software configuration files in order to limit the drift observed with the conferences.
1.MODIFYING THE PCD FILE By default, the PCD file is located in the folder “c:\Program Files\Dialogic\data\”. Several files of this type may be located in this folder, and to choose the right file, it is advisable to check which file is used by the HMP software. For this, open “HMP Licence Manager”.		
		he filename in our case is the one in e “configuration” field: r1v0e0c0s0f_ver.pcd

Tableau 11.13 TROUBLESHOOTING CONFERENCE BRIDGE APPLICATION PROBLEMS

Symptoms	Probable cause	Resolution
Then open this file with a file editor and search for the following section in it. **[COMP IPVSC]** **{** **Attribute :std_ComponentType:0x40** **NumInstances :1** **StartInstanceNum :1** **ConfigOption :YES** **InitOption :NO** **DependentComp :NTC** **}** Check that the parameter “InitOption” is set to NO. If not, change the value to “NO” and save the file.		
2.MODIFYING THE CONFIG FILE The CONFIG file is located in the same directory as the PCD file. By default, it is in the directory “c:\Program Files\Dialogic\data\”. If several CONFIG files are available, the one to modify is the one corresponding to the PCD file used above. In our case, it is 1r1v0e0c0s0f_ver.config Then open this file with a file editor and add the following section in it. **[IPVSC]** **!sending Std_MsgInit to component** **InitIPVSC** **setparm 0x4005, 49152 !Set the rtpPortBase on IPVSC** **setParm=0x1b8b,1 !Fixed Latency mode (Default 0 Disable, Min 0, Max 1 Enable)** **setParm=0x1b07,6 !Initial Latency (Default 6, Min 1, Max 200)** Caution: this section may exist already. In this case, check that its content actually corresponds to the one described above. Then exit file editor, saving the data if necessary.		
3.GENERATING THE PCD FILE Generating this file consists in compiling the CONFIG file using fcdgen, in order to obtain an FCD file. Fcdgen.exe is located in the directory “c:\Program Files\Dialogic\bin\”. Copy this file to the directory “c:\Program Files\Dialogic\data\”. Execute the following command line: "C:\Program Files\Dialogic\data\fcdgen.exe" -f 1r1v0e0c0s0f_ver.config -o 1r1v0e0c0s0f_ver.fcd The FCD file is generated. **Note**: 1r1v0e0c0s0f_ver corresponds to the name of the file in our example; this name may be different in your own case. The command is then: "C:\Program Files\Dialogic\data\fcdgen.exe" -f **YourFilename**.config -o **YourFilename**.fcd		

Tableau 11.13 TROUBLESHOOTING CONFERENCE BRIDGE APPLICATION PROBLEMS

Symptoms	Probable cause	Resolution
4.RESTARTING THE SERVICE Now that all the files are available, (1r1v0e0c0s0f_ver.config, 1r1v0e0c0s0f_ver.pcd et 1r1v0e0c0s0f_ver.fcd), it now remains to restart the HMP service via the Configuration Manager (DCM). - Stop then Start  		
Return to line not available in conference e-mails.	TEXT type e-mails	To avoid this problem, use SMTP to send e-mails. With this protocol, it is the HTML format that is used to send conference e-mails, and this problem does not exist with this format.

11.15 GENERAL PROBLEMS (FAQ)

Tableau 11.14 GENERAL PROBLEMS (FAQ)

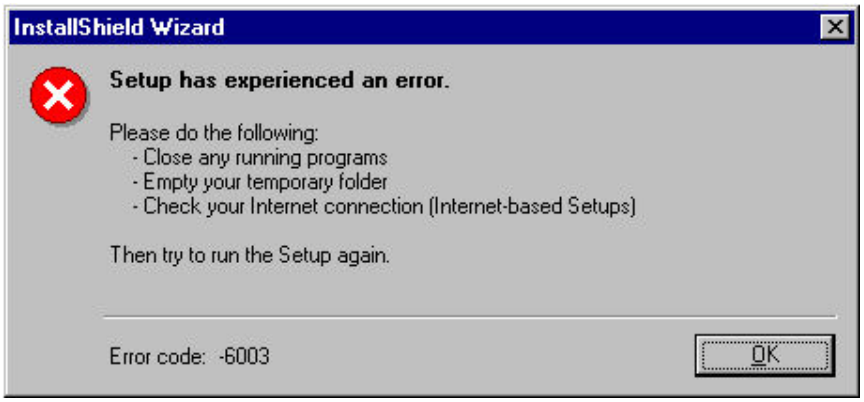
Symptoms	Probable cause	Resolution
Language problem in dialogue box buttons: Messages are often displayed to inform the user about an on-going operation or, for example, to request for confirmation when the user wishes to delete an item, etc. These messages often have a confirmation button (example: OK) and a cancellation button (example : Cancel). These buttons do not often appear in the M5000 CC language.	They always appear in the current operating system language and are not translated into the M5000 CC language.	
Error during a new installation after restarting the PC: The following message is displayed when the PC is restarted after a new installation:  	Insufficient disk space available to complete the new installation.	Clean up the disk then restart the installation.
The agent's daily statuses are printed on two pages. The first page is a blank page.	This happens when the top frame is selected before the print request.	Select the specific frame containing the different statuses before printing.
Error while connecting to the portal if the IIS web server is running with Windows 2003: The following message appears: "An error has occurred. Impossible to call up the web service. Close the portal now."	In Windows 2003, the ASP.Net component is not installed by default. This prevents the portal from using its web service.	Install this component as follows: • Open the Windows 2003 control panel. • Click ***[Add/Remove programs]***. • Select **[Add/Remove Windows components]**. • Select **[Application Server]**, then click ***[Details].*** • Tick **[ASP.NET]** then click ***[OK]***. • Click ***[Next]***. The ASP.Net component is installed.

Tableau 11.14 GENERAL PROBLEMS (FAQ)

Symptoms	Probable cause	Resolution
Anomaly while using M5000 CC Portal: • The portal no longer reacts and displays “N elements remaining” on the status bar. • The portal buttons disappear when the mouse cursor is placed over them. • The portal buttons do not react.	When the portal was first started, the automatic configuration (made by a Java applet) failed.	Download then run the tool "ConnectionIEManager.exe". A shortcut to this tool is available in the M5000 CC Portal options (see Sheet U-900).
During an M5000 CC session, the login message box reopens frequently and unexpectedly. 	Wrong network configuration	One of the solutions is to use another network address to reach the portal site. • PC name (PC-AZERTY) • IP address (192.168.1.1) • PC name with the DNS suffix (PC-AZERTY.DOMAINE.COM) Another solution is to check the proxy server configuration (and if it is used, to test it by disabling it in the web client). Another solution is to check the DNS configuration of the various PCs used.
With Access 2007, personalised reports are not generated correctly (a lot of "#Name?" displayed).	Some public variables have not been declared in VBA to displayed directly in the report.	To display some “public” variables correctly, create a “public” function that will read a “private” variable. Example: Previously Report -> [PrecisionLevel] VBA -> Public PrecisionLevel as gckenumPrecisionLevel Now Report -> PrecisionLevel() VBA -> Private pPrecisionLevel as gckenumPrecisionLevel Public Function PrecisionLevel() As gckenumPrecisionLevel PrecisionLevel = pPrecisionLevel End Function

12 SUPERVISION APPENDICES

The appendices presented in this section concern supervision:

- General information about statistical reports and data (see Section 12.1)
- Predefined M5000 CC Report Server reports (see Section 12.2)
- Statistical tables and database used by the Statistics Builder (see Section 12.3).

12.1 GENERAL INFORMATION ABOUT STATISTICAL REPORTS AND DATA

12.1.1 PURPOSE OF THIS DOCUMENT

To use the available statistical reports and data, it is necessary to understand how the statistics are backed up in the system and the principles used in calculating the different values.

This appendix gives general information on the reports and statistical data described in detail in the following appendices.

12.1.2 LOGICAL AND PHYSICAL STATUS

12.1.2.1 SERVICE-RELATED CALLS

Each call about an incoming or outgoing service undergoes a series of **logical** statuses; here are some examples:

- Initial status
- Waiting for an agent for transfer
- Reserved for an agent
- DCP
- PCP.

Moreover, during its existence, the call may **physically** pass through several telephone sets:

- IVR resource
- Call pits
- First agent's terminal
- Another agent's terminal

Moreover, the call status may physically change on the same telephone terminal:

- Ringing
- Connected
- On hold

As explained by the comparison of the status transitions, logical and physical status changes are generally not synchronised.

12.1.2.2 CALL PROCESSING BY AGENTS

From the point of view of an agent, only the transitions between the call physical statuses are considered. This applies both to professional (that is relating to an incoming or outgoing service) and private calls.

12.1.2.3 AGENT'S GLOBAL LOGICAL STATUS

The notion of agent global status is based on some data about his or her status, activity (and possible activity code), and about his or telephone extensions.

For extension-related data, it is the logical status that is taken into account in the agent's global status calculation.

Example: the global status "Presentation of incoming calls" corresponds to the agent extension's logical status "Reserved".

12.1.2.4 COMPARISON OF STATUS TRANSITIONS

In some cases, there is a direct correspondence between some physical logical statuses.

Example: a call's logical status "On hold", an agent's "Incoming calls on hold" status and the physical status "On hold" of the call on the agent's set are directly related.

However, changes in call logical statuses and physical transitions between terminals or on the same terminal are generally not simultaneous.

Example: when the status of a call changes to the logical status "Reserved", it is not yet in the physical status "ringing" on the agent's terminal because a timeout may be introduced through the possible start of a script in

the user application and through the setting up of an enquiry call to the agent terminal.

The duration of logical and physical statuses may also vary.

Example: the duration of the “Reserved” status includes the total ringer duration on several agent terminals, if several transfer attempts are made for different agents.

12.1.2.5 SUMMARY TABLE

The following table gives a detailed example of the different status transitions ocurring during incoming call processing by an agent.

Each line gives the new status of the logical call (service-related call), physical call (processing by agent) and of the agent (agent's global status). When the transitions occur simultaneously, they are presented on the same line. When a difference can be observed between transitions, some different lines are used.

For each line, the **typical** difference in seconds compared to the previous situation (line) is indicated.

Tableau 12.1 DESCRIPTION OF THE "REPORTS" TABLE

Steps	Logical call (InboundVoiceCall)	Physical call on agent side (VoiceCallsPerAgent)	Agent global call (AgentGlobalStatus)	Difference [s]
New call in ringing phase on IVR resources or incoming call pit.	(Start) IVR	(None)	Not Ready	
End of IVR part of the script, start of transfer phase (node). No agent available.	Idle			>1
Agent becomes ready.			Available	>1
Agent selected to process call. Enquiry call or diversion to agent terminal.	Reserved		Reserved	0
Ringing on agent terminal.		(Start) Ringing		approx. 1
Agent off-hooks.	DCP	Conversation	DCP	>1
Call put on hold by agent	On hold	Hold	Incoming call on hold	>1
Resumption by agent	DCP	Conversation	DCP	>1
Caller on-hooks.	DCP	(End)	DCP	>1
Agent terminal completely free.	(End)		Available	approx. 1

12.1.3 BACKING UP STATISTICS

12.1.3.1 COMPONENTS AND TIME

Statistical data is backed up in two phases.

In the first phase, the server backs up the data in the 'Statbuffer.CST' database. The time this data is backed up by the server varies according to type of data (see next sections).

In a second phase, the statistics builder replicates and consolidates the new data added by the server from the 'Statbuffer.CST' database to the 'LongTermStatistics.mdb' database (in default configuration). This procedure is carried out by the statistics builder every 15 seconds: it is, therefore, possible to observe a 15 seconds timeout between the backing up of information by the server and its availability in the statistics for report editing.

12.1.3.2 SERVICE-RELATED CALLS

Incoming or outgoing service call statistics concern the logical statuses of these calls (the physical transitions are backed up in the agents' call processing data).

Statistics on such a call are backed up once by the server, **at the end of the logical call**. At each transition of a call's logical status, the durations of the different statuses are updated by the server in the memory until the end of the call. Therefore, a call in progress does not appear in the statistical database.

12.1.3.3 CALL PROCESSING BY AGENTS

Statistics on agents' call processing operation concern the physical statuses of (professional and private) calls.

Statistics on an agent's call processing operation are backed up at the end of the physical call on the agent's terminal. The durations of each physical status are updated during the call and until the end of the call.

For professional calls handled by agents, this data completes the statistics on service-related calls. In fact, the data may be cut again (joined) based on call ID (CallID). If the same logical call is processed by several agents (presentations to different agents, inter-agent transfers), the same logical call is associated with several physical calls.

12.1.3.4 AGENT'S GLOBAL LOGICAL STATUS

Statistics on the agent's global logical status are backed up immediately for each of the agent's logical status transitions.

12.1.4 CONSOLIDATING THE STATISTICS

12.1.4.1 DATA UPDATE

Consolidation consists in updating the same consolidated table recording from each 'Statbuffer.CST' recording pertaining to the time interval of this recording on the consolidated table.

A given consolidated table recording can always be modified after backup.

Example: the recording of the 'InboundCallsPerServicePerHour' table corresponding to the 'Support' service and the period from 12:00 to 13:00 can always be modified beyond 13:00. In fact, some calls that started within this period can always be in progress. This recording can only contain its definite data at the end of all the "Support" service calls that started between 12:00 and 13:00.

12.1.4.2 CONSOLIDATION ON A SINGLE INTERVAL

In most cases, a recording of the 'Statbuffer.CST' database will be consolidated in a single recording of each corresponding consolidated table in the 'LongTermStatistics.mdb' database: the one for its start.

Example: a call made from 12:15 to 12:55 is consolidated in the recording corresponding to the period from 12:00 to 13:00 on the consolidation table per 'InboundCallsPerServicePerHour' period.

If the 'Statbuffer.CST' recording data covers several consolidation intervals, only the recording that corresponds to the period of 'Statbuffer.CST' recording start will be updated.

Example: in the 'InboundCallsPerServicePerHalfHour' consolidation table, the call in the previous example is only included in the recording corresponding to the period from 12:00 to 12:30, since it started within this interval.

Note: As indicated in the section on statistics backup, the call in this example is only backed up when it ends: at 12:55, that is after the interval within which its is consolidated on the per half-hour table (from 12:00 to 12:30).

This rule may lead to a situation in which a duration backed up in a consolidated table field is above the duration of the corresponding interval.

Example: if the conversation started at 12:20 and ended at 12:55 in the previous example, the conversation duration backed up in the recording corresponding to the period from 12:00 to 12:30 (which is thus spread over 30 minutes) is 35 minutes. the call is in fact considered in its entirety, and its duration is not spread over different consolidation intervals.

12.1.4.3 CONSOLIDATION OVER SEVERAL INTERVALS

Some statistical data make an exception to the consolidation rule on only one time interval. In fact, the durations to back up are spread over several consecutive recordings if they go beyond the consolidation

specification. This applies to consolidated data in the tables:

- For the global agent status (StatusesAndActivitiesPerAgentPer* and ActivityCodesPerAgentPer* tables)
- And for the service closing periods (ClosingStatusesPerServicePer* tables).

Example: if an agent's status changes to 'Connected', 'Ready', 'DCP' at 12 :20 and remains like that until 12:55, two recordings will be updated in the 'StatusesAndActivitiesPerAgentPerHalfHour table: 10 minutes of 'DCP' will be taken into account in the recording from 12:00 to 12:30, and 25 minutes will be counted in the recording from 12:30 to 13:00.

On the other hand, the fields recording the number of status transitions (called 'Nbr*' in the tables are only updated for recordings that correspond to the beginning of these transitions.

Example: the agent's DCP status in the previous example results in the updating of the 'NbrDCPInboundPeriods' field only in the recording from 12:00 to 12:30.

When the durations are spread over several recordings, the average duration cannot be obtained on a particular interval.

12.1.4.4 AVERAGE CALCULATIONS

For consolidation on only one time interval, it is possible to calculate some average durations for each recording, by dividing the durations by the number of corresponding transitions. Since most of the tables in this category concern calls, the notion of average is very significant.

On the other hand, when the data is consolidated by spreading the durations over several intervals, the average durations can be calculated in this manner for each recording. Since the tables in this category concern global statuses, the notion of average is not quite significant.

12.1.5 SPECIAL CHARACTERISTICS OF REPORTS IN SNAPSHOT/PDF FORMAT

12.1.5.1 GROUPS AND SUMMARIES

Reports in Snapshot/PDF format present statistical data in a practical manner. To this end, data is grouped, and summaries generally added for each group and global report.

As the case may be, these groups concern periods, agents, teams or filters.

12.1.5.2 DENOMINATIONS USED

The report column headers have labels that make them easy to read. The list of fields in the statistical table(s) that correspond to the report columns is specified in the report's specific documentation.

12.1.6 SPECIAL CHARACTERISTICS OF REPORTS IN EXCEL FORMAT

12.1.6.1 ABSENCE OF SUMMARY

Unlike reports in Snapshot format, reports in Excel format present the raw data used, for instance, to carry out operations with formulas.

No grouping is performed for this data, and no summary is included by default in this format.

12.1.6.2 MULTIPLE ROWS

In some cases, the same value taken from statistical data may appear in several rows of a report in Excel format. This should be avoided if you wish to perform some operations on all the rows, or else the same value is taken into account several times.

This special feature applies, in particular to:

- Reports on agents' global status, when some activity codes are selected
- Reports allowing agents to be selected by teams, even if the same agent is assigned to several teams, and
- Reports allowing calls to be selected using filters, even if the same call passes through several filters.

Non-duplication of data may be guaranteed respectively by:

- Failing to select any activity code, or by taking actions only in the fields for particular activity codes
- Selecting only separate teams, and
- Selecting only exclusive filters.

12.2 DESCRIPTION OF PREDEFINED REPORTS OF M5000 CC REPORT SERVER

12.2.1 PURPOSE OF THIS DOCUMENT

This appendix presents the following features of the **M5000 CC Report Server** :

- the tables for the "LongTermReporting.mdb" database (see § 12.2.2),
- The description of predefined standard statistical reports (see Section 12.2.3).

12.2.2 DESCRIPTION OF THE "LONGTERMREPORTING.MDB" DATABASE AND ITS TABLES

12.2.2.1 DESCRIPTION OF THE "LONGTERMREPORTING.MDB" DATABASE

The "LongTermReporting.mdb" database contains all the data required to create statistical reports. The 'LongTermReporting.mdb' database is installed at the same time as the M5000 CC Report Server component. The main contents of the LongTermReporting.mdb database are 9 tables and 56 predefined, standard statistical reports (28 in French and 28 in English: the same, only the language changes).

12.2.2.2 REPORTS TABLE

This table contains all the reports which can be distributed by 'LongTermReporting.mdb' using the M5000 CC Report Server.

Tableau 12.2 DESCRIPTION OF THE "REPORTS" TABLE

Field name	Type	indexed	Description
Name	Text	Primary key	Name of the report
LanguageID	Text	No	Report language
ReportType	Integer (Long)	No	0 = consolidated, 1 = detailed
TypeOfService	Integer (Long)	No	0 = no service; 1 = inbound; 2 = outbound; 3 = all services

12.2.2.3 'LANGUAGES' TABLE

This table contains all the languages in which the 'LongTermReporting.mdb' reports can be edited.

Tableau 12.3 DESCRIPTION OF THE "LANGUAGES" TABLE

Field name	Type	indexed	Description
User ID	Text	Primary key	Language Id

12.2.2.4 'PARAMETERS' TABLE

This table contains all the parameters which the 'LongTermReporting.mdb' reports can use.

Tableau 12.4 DESCRIPTION OF THE "PARAMETERS" TABLE

Field name	Type	indexed	Description
User ID	Text	Primary key	Report parameter name
Type	Long	No	See "ParametersTypes" tableTableau 12.5
Interactive	Yes / No	No	Specifies whether the parameter must be displayed for the user on the web to receive a value.

12.2.2.5 "PARAMETERSTYPES" TABLE

This table imposes all valid types of parameters:

Tableau 12.5 DESCRIPTION OF THE "PARAMETERSTYPES" TABLE (1/2)

id value	type	description
1	Date/Time simple value.	This type of parameter is used with dates. (example：BeginTime)
2	Text simple value.	This type of parameter is used with character strings. (example：SourceTablePrefix)
3	Numerical simple value.	This type of parameter is used with figures. (example：PrecisionLevel)
4	List of agent IDs.	This type of parameter is used for reports on agents. It contains the identity of the agents who are the subject of the report.
5	Service ID.	This type of parameter is used for reports on a Service. It contains the Service which is the subject of the report.
6	Filter ID.	This type of parameter is used for reports on a filter. It contains the filter which is the subject of the report.
7	Agent thresholds.	This type of parameter is used for reports on agents if the source table is consolidated. It is used to provide, at the web interface level, the list of intervals that exist in the "CallsDurationsPer*" table.
8	Call thresholds.	This type of parameter is used for reports on calls if the source table is consolidated. It is used to provide, at the web interface level, the list of intervals that exist in the "AgentCallsDurationsPer*" table.
9	Printer.	This type of parameter is used to indicate the printer on which the report is to be printed.
10	Action	This type of parameter is used to indicate the operation to be performed (generate a file or print).
13	Export format.	This type of parameter indicates the export format (Snapshot MS Access: ".snp" / PDF: ".pdf" or MS Excel: ".xls")
14	Activity codes.	This type of parameter specifies a list of activity codes.
15	Date simple value.	This type of parameter specifies a single value of the Date type.
16	Hour simple value.	This type of parameter specifies a single value of the Hour type.
17	Date/Time list.	This type of parameter specifies a list of Date/Time values.
18	Date list.	This type of parameter specifies a list of values of the Date type.
19	Time list.	This type of parameter specifies a list of values of the Time type.

Tableau 12.5 DESCRIPTION OF THE "PARAMETERSTYPES" TABLE (2/2)

id value	type	description
20	Text list.	This type of parameter specifies a list of character strings.
21	Number list.	This type of parameter specifies numerical values.

These types of parameter can be used to create new parameters for customized reports.

12.2.2.6 "LOCALIZEDPARAMTYPEDESCRIPTIONS" TABLE

This table is not used currently.

12.2.2.7 REPORTPARAMETERS TABLE

This table contains all the parameters for 'LongTermReporting.mdb' reports.

Tableau 12.6 DESCRIPTION OF THE "REPORTPARAMETERS" TABLE

Field name	Type	indexed ?	Description
ReportName	Text	Primary key	Report name
ParameterID	Text		Identifier of a parameter
Value	Text	No	

12.2.2.8 LOCALIZEDPARAMETERDESCRIPTIONS TABLE

This table contains a localized description of the various 'LongTermReporting.mdb' parameters :

Tableau 12.7 DESCRIPTION OF THE "LOCALIZEDPARAMETERDESCRIPTIONS" TABLE

Field name	Type	indexed ?	Description
ParameterID	Text	Primary key	Identifier of a parameter
LanguageID	Text		Identifier of a language
Description	Text	No	Localized description of the parameter

12.2.2.9 "REPORTEXCELTEMPLATES" TABLE

This table contains all the parameters for 'LongTermReporting.mdb' custom Excel reports.

Tableau 12.8 DESCRIPTION OF THE "REPORTEXCELTEMPLATES" TABLE

Field name	Type	indexed ?	Description
ReportName	Text	Primary key	Report name
TemplateName	Text	No	Excel template file name to use as a reference when generating the report in Excel format
MacroName	Text	No	Name of the Excel macro to run when the report is generated in Excel format

12.2.2.10 REPORTQUERIES" TABLE

Each table contains, for each report, the queries to apply to the "LongTermStatistics.mdb" database in order to generate it.

Tableau 12.9 "REPORTQUERIES" TABLE

Field name	Type	indexed ?	Description
ReportName	Text	Primary key	Report name.
ReportQuery	Text	Primary key	Name of the query (unique for a given report).
Starting	Yes / No	No	Indicates whether it is the "start query" for the report, i.e. the one providing all the data. There can be only one query for which this field has the value "Yes" per report.
SQL	Text	No	SQL query itself, containing when possible a series of dynamic parameters written between '@' symbols.

These configuration tables enable the reports to be used by the M5000 CC Report Server (see Figure 12.1):

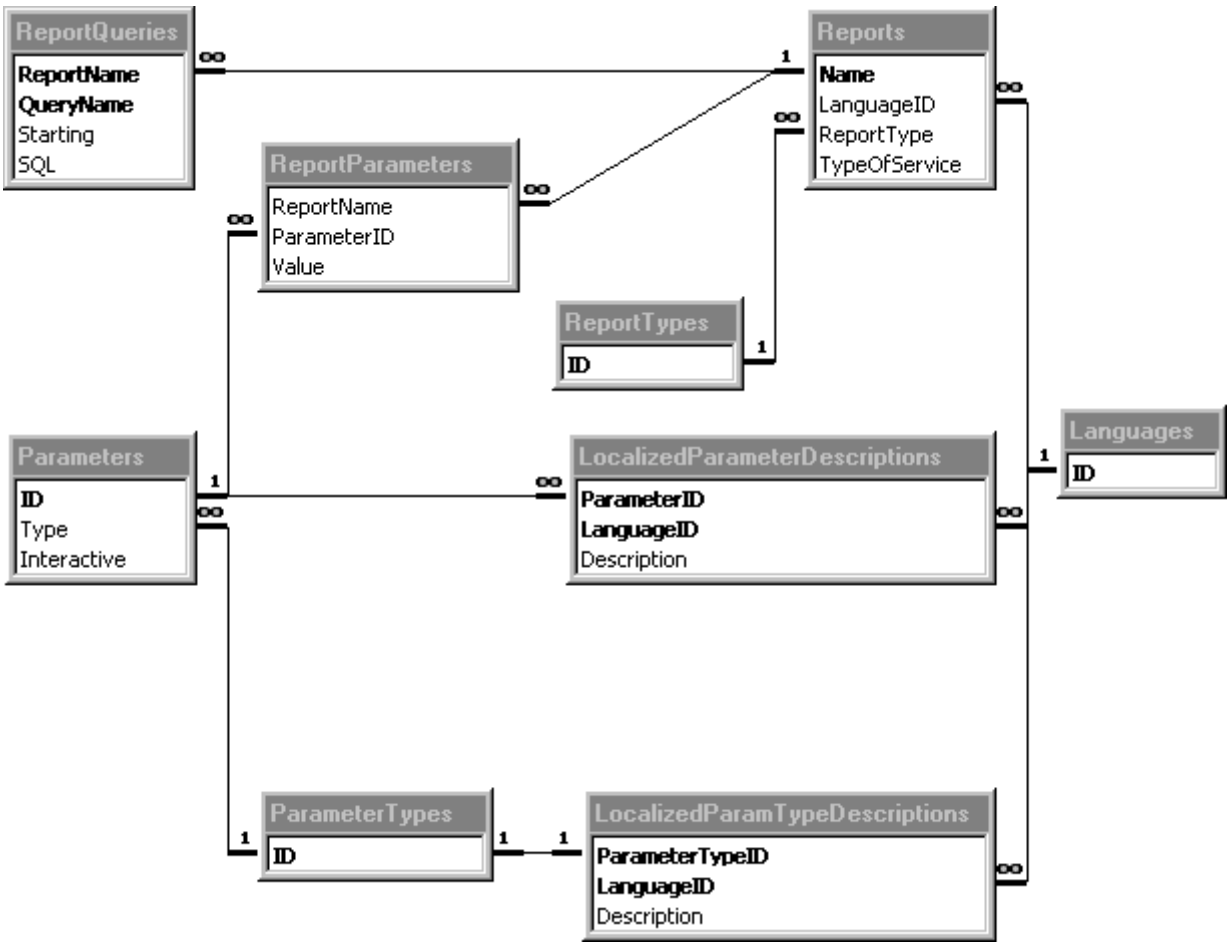


Figure 12.1 USE OF THE CONFIGURATION TABLES BY THE M5000 CC REPORT SERVER

12.2.2.11 CREATION OR CUSTOMIZED REPORTS

To view the method for constructing customized reports to be added to the "LongTermReporting.mdb" database, refer to the Sheet U-210.

12.2.3 DESCRIPTION OF PREDEFINED STANDARD STATISTICAL REPORTS

12.2.3.1 OVERVIEW

The "LongTermReporting.mdb" database contains 56 statistical reports generated via the M5000 CC Report Server. These reports are predefined standard reports, 28 in French, 28 in English (the same, only the language changes). The following table shows the list of reports in the French language :

Tableau 12.10 LIST OF STATISTICAL REPORTS GENERATED VIA THE M5000 CC REPORT SERVER

Type of reports	Accessible to any authorized service manager or team supervisor
Voice calls	• Inbound calls (see § 12.2.3.2), • Inbound calls (details) (see § 12.2.3.3), • Inbound calls (general statistic) (see § 12.2.3.4), • Inbound calls (graphic) (see § 12.2.3.5), • Inbound calls (see § 12.2.3.6), • Inbound calls answered (see § 12.2.3.7), • Outbound calls (see § 12.2.3.8), • Outbound calls (details) (see § 12.2.3.9),
E-mails	• Inbound E-mails (see § 12.2.3.10), • Inbound E-mails (see § 12.2.3.11), • E mails per agent (see § 12.2.3.12), • E-mails per agent (details) (see § 12.2.3.13),
Web Sessions	• Web Sessions (see § 12.2.3.14), • Web Sessions (details) (see § 12.2.3.15).
Agents	• Agent statuses and activities (details) (see § 12.2.3.16), • Agents' global status (see § 12.2.3.17) • Agents' global status (details) (see § 12.2.3.18) • Private calls per agent (see § 12.2.3.19), • Private calls per agent (details) (see § 12.2.3.20), • Distributed inbound calls per agent (see § 12.2.3.21), • Distributed inbound calls per agent (details) (see § 12.2.3.22), • Professional outbound calls per agent (see § 12.2.3.23), • Professional outbound calls per agent (details) (see § 12.2.3.24),
System load	• IVR ports saturation periods (see § 12.2.3.25) • IVR ports load (see § 12.2.3.26), • IVR ports load and saturation periods (see § 12.2.3.27).
Service status	• Service closing periods (see § 12.2.3.28), • Service closing and opening periods (details) (see § 12.2.3.29).
Alarms	• Alarms (details) (see § 12.2.3.30).

These reports are also available in English (see Sheet U-200) and this regardless of the reporting web site language.

To create and add a customized report in "LongTermReporting.mdb" refer to the Sheet U-210.

The "Global extension status" and "Global extension status (details)"reports provide an overview of the agents' activity and, therefore, do not depend on one Service. Unlike the "Agent Statuses and activities" and "Agent Statuses and activities (details)" reports, these reports take into account all the global statuses that an agent may have. An agent's global status depends directly on the global status of his extension (or extensions if he has several of them). The global status of an agent's extensions may have the following values:

Tableau 12.11 GLOBAL STATUS OF AN AGENT'S EXTENSIONS

Value	Explanation	Description
0	Free	All extensions are free.

Tableau 12.11 GLOBAL STATUS OF AN AGENT'S EXTENSIONS

1	Inbound call communication (DCP)	At least one DCP extension for incoming calls (of an M5000 CC service).
2	Outbound call communication (DCP)	At least one DCP extension for outgoing calls (of an M5000 CC service).
3	Private inbound call	No extension in communication (DCP) and at least one extension in private inbound call.
4	Private outbound call	No extension in communication (DCP) and at least one extension in private outbound call.
5	Presentation of inbound call (Reserved)	No extension in communication (DCP), no extension in private call, and at least one extension reserved for incoming call (of an M5000 CC service).
6	Presentation of outbound call (Reserved)	No extension in communication (DCP), no extension in private call, and at least one extension reserved for outgoing call (of an M5000 CC service).
7	Inbound call on hold	At least one extension on hold for incoming call (of an M5000 CC service), other extensions are free.
8	Outbound call on hold	At least one extension on hold for outgoing call (of an M5000 CC service), other extensions are free.

Thus, an agent's global status is calculated as follows:

- If [global extension status] is different from Free, then agent global status is equal to global extension status.
- otherwise, the agent's status is the same as status, activity, and activity code.

The "**Global extension status**" and "Global extension status (details)"reports take into account the status, activity, activity code and global status of the agent. The "Agent Statuses and activities" and "Agent Statuses and activities (details)" reports only take into account the status, activity and activity code.

12.2.3.2 PREDEFINED REPORT "INBOUND CALLS"

12.2.3.2.1 General principle

The end of a call belonging to an incoming service results in the backing up of some statistical data. More particularly, a recording is backed up (or updated) in the consolidated "InboundCallsPerServicePer*" table.

The purpose of the "Inbound calls" report is to display a summary for each level of precision (precision per quarter of an hour, half hour, hour, day, week and month) for the different calls received in the selected incoming service (filtered or not filtered).

12.2.3.2.2 Content of the report

This report gives the consolidated statistics of answered incoming calls for a given period. The report displays the calls belonging to a particular Service and the filtered data (see Sheet U-443) if this Service can also be displayed.

It is possible to select several filters, and there will be no general summary displayed at the end of the report.

This report contains, for each period of time (depending on the accuracy : per quarter hour, half hour, hour, day, week, or month) during which calls were made :

- The start date or time for this period of time
- The number of calls received
- The number of calls not to be transferred
- The number of answered calls
- The percentage of calls answered compared to the number of calls received
- The average wait time before answer
- The number of lost calls
- The percentage of calls lost compared to the number of calls received
- The average wait time before abandonment
- The average wait time (combination of answered and lost calls)
- average call time (see definition in § 1.4),
- The average post-call processing time.

Depending on the precision selected, a daily summary (precision per quarter hour, half hour, or hour), monthly summary (precision per day or week) or annual summary (precision per month) is given, and in all cases a general summary is given for the service.

"For the service" is displayed (if no filter is selected), otherwise "Per filter" is displayed (if one or more filters are selected).

The data on which the report is based is contained in the 'InboundCallsPerServicePer*' tables in the 'LongTermStatistics.mdb' database.

12.2.3.2.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the "InboundCallsPerServicePer*" table (see Section 12.3.3.15).

The choice of parameters with thresholds is made while editing the corresponding report.

Tableau 12.12

Labels	Formula
Department	ServiceID
Filter	FilterID
Begin	BeginTime
received	NbrCalls
Calls not to be transferred	
Number	NbrCallsNotToTransfer

Tableau 12.12

Calls answered	
Number	NbrCallsAnswered
%	(NbrCallsAnswered/NbrCalls) * 100
Average wait time before answer	TotalCallsAnsweredWaitingDuration / NbrCallsAnswered
Calls abandoned	
Number	NbrCallsAbandoned
%	(NbrCallsAbandoned/NbrCalls) * 100
Average timeout before abandon	TotalCallsAbandonedWaitingDuration / NbrCallsAbandoned
Average duration	
Hold	(TotalCallsAbandonedWaitingDuration + TotalCallsAnsweredWaitingDuration) / (NbrCallsAbandoned + NbrCallsAnswered)
Communication	TotalCallsAgentCommunicationDuration / NbrCallsAnswered
Post call processing	TotalPCPDuration / NbrCallsAnswered

Summary

The labels that appear in the summary group together the data available in the detailed section in the corresponding precision level.

Tableau 12.13

Labels	Formula
received	Sum(NbrCalls)
Calls not to be transferred	
Number	Sum(NbrCallsNotToTransfer)
Calls answered	
Number	Sum(NbrCallsAnswered)
%	(Sum(NbrCallsAnswered) / Sum(NbrCalls)) * 100
Average wait time before answer	Sum(TotalCallsAnsweredWaitingDuration) / Sum(NbrCallsAnswered)
Calls abandoned	
Number	Sum(NbrCallsAbandoned)
%	(Sum(NbrCallsAbandoned) / Sum(NbrCalls)) * 100
Average timeout before abandon	Sum(TotalCallsAbandonedWaitingDuration) / Sum(NbrCallsAbandoned)
Average duration	
Hold	(Sum(TotalCallsAbandonedWaitingDuration) + Sum(TotalCallsAnsweredWaitingDuration)) / (Sum(NbrCallsAbandoned) + Sum(NbrCallsAnswered))
Communication	Sum(TotalCallsAgentCommunicationDuration) / Sum(NbrCallsAnswered)
Post call processing	Sum(TotalPCPDuration) / Sum(NbrCallsAnswered)

Example of Inbound calls report (precision per day).

Selection by service

Inbound voice calls

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: Support
Filter: no filter
Precision per quarter hour

M7480 report — Inbound voice calls

		Calls not to transfer	Answered calls			Abandoned calls			Average duration		
Beginning	Received	Number	Number	%	Average duration before answer	Number	%	Average duration before abandon	Waiting	Communication	Post call Processing
Monday, October 06, 2003											
09:00	4	0	3	75%	0:00:25	1	25%	0:01:02	0:00:34	0:03:54	0:03:41
09:15	3	0	3	100%	0:00:19	0	0%	0:00:00	0:00:19	0:00:23	0:00:00
11:30	3	0	3	100%	0:00:23	0	0%	0:00:00	0:00:23	0:02:24	0:00:00
Summary Monday, October 06, 2003											
	10	0	9	90%	0:00:22	1	10%	0:01:02	0:00:26	0:02:14	0:01:14
Tuesday, October 07, 2003											
09:30	4	0	3	75%	0:00:16	1	25%	0:01:01	0:00:27	0:00:23	0:00:00
12:45	12	0	10	83%	0:00:09	2	17%	0:00:19	0:00:10	0:00:40	0:00:00
Summary Tuesday, October 07, 2003											
	16	0	13	81%	0:00:10	3	19%	0:00:33	0:00:15	0:00:37	0:00:00
Wednesday, October 08, 2003											
10:15	3	0	3	100%	0:00:04	0	0%	0:00:00	0:00:04	0:04:16	0:00:00
10:30	1	0	1	100%	0:00:05	0	0%	0:00:00	0:00:05	0:19:50	0:00:00

Thursday, October 09, 2003 — Page 1-2

Figure 12.2 EXAMPLE OF "INBOUND CALLS" REPORT SELECTION BY SERVICE (1/2)

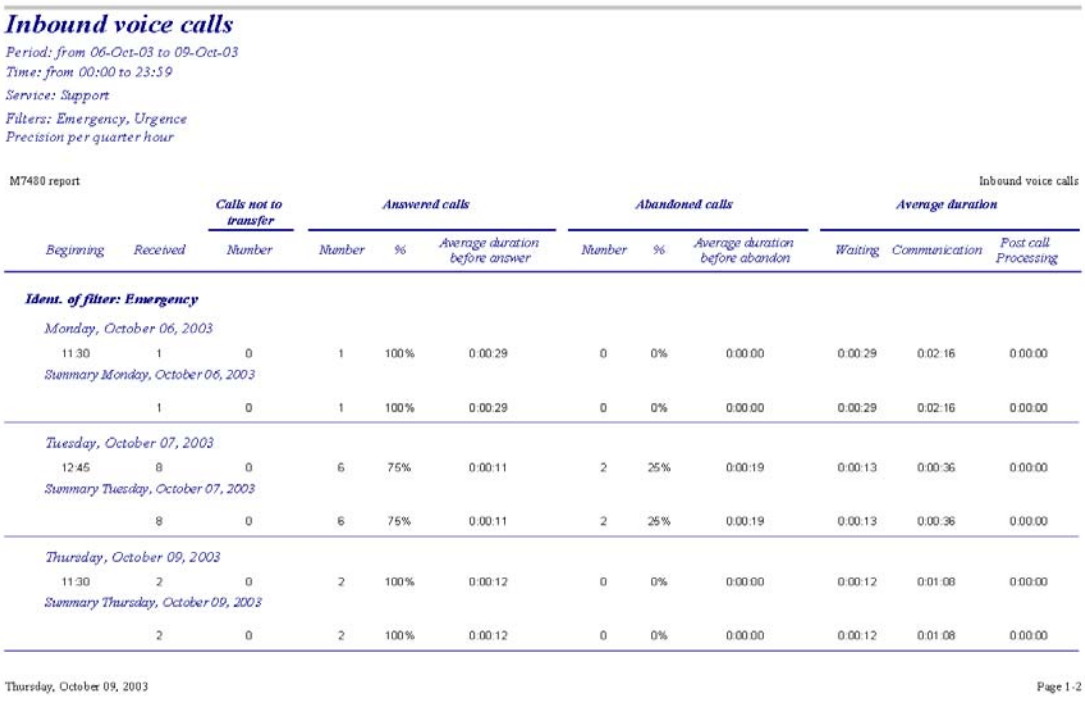
M7480 report — Inbound voice calls

Beginning	Received	Calls not to transfer: Number	Answered calls: Number	Answered calls: %	Answered calls: Average duration before answer	Abandoned calls: Number	Abandoned calls: %	Abandoned calls: Average duration before abandon	Average duration: Waiting	Average duration: Communication	Average duration: Post call Processing
Summary Wednesday, October 08, 2003											
	4	0	4	100%	0:00:04	0	0%	0:00:00	0:00:04	0:08:09	0:00:00
Thursday, October 09, 2003											
11:30	3	0	3	100%	0:00:11	0	0%	0:00:00	0:00:11	0:01:08	0:00:00
Summary Thursday, October 09, 2003											
	3	0	3	100%	0:00:11	0	0%	0:00:00	0:00:11	0:01:08	0:00:00
General summary											
	33	0	29	88%	0:00:13	4	12%	0:00:40	0:00:17	0:02:12	0:00:23

Thursday, October 09, 2003 — Page 2-2

FIGURE 12.2 EXAMPLE OF "INBOUND CALLS" REPORT SELECTION BY SERVICE (2/2)

Selection by filter



Inbound voice calls

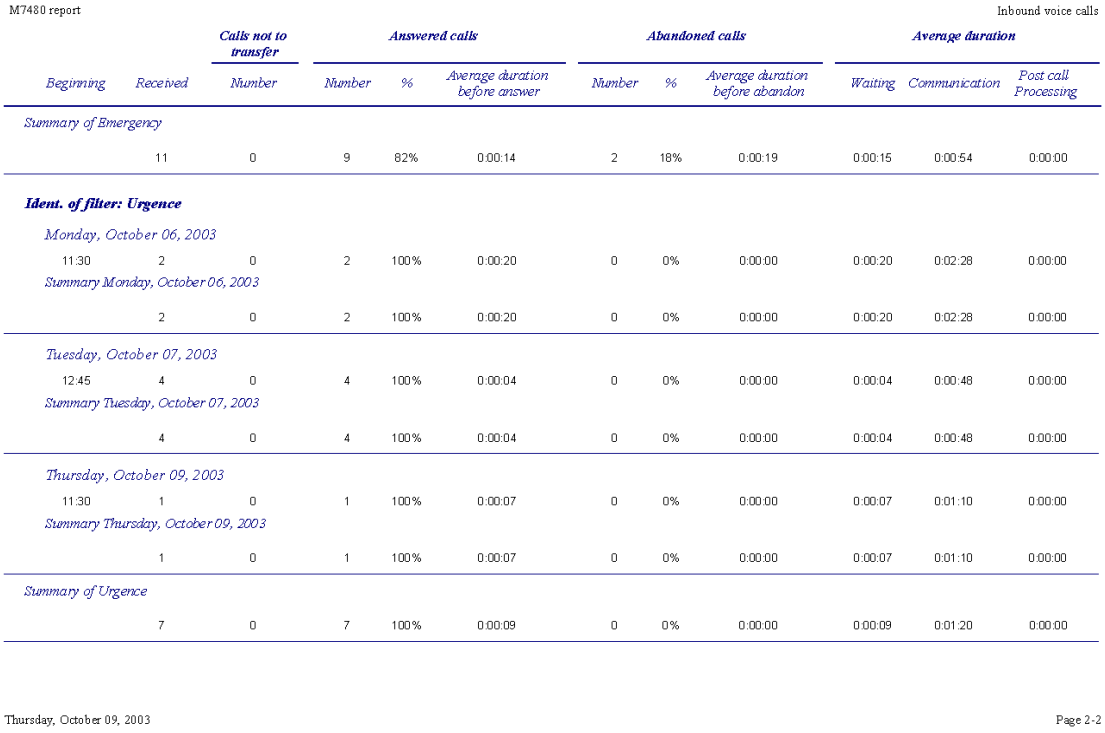
Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: Support
Filters: Emergency, Urgence
Precision per quarter hour

M7480 report — Inbound voice calls

Beginning	Received	Calls not to transfer: Number	Answered calls: Number	Answered calls: %	Answered calls: Average duration before answer	Abandoned calls: Number	Abandoned calls: %	Abandoned calls: Average duration before abandon	Average duration: Waiting	Average duration: Communication	Average duration: Post call Processing
Ident. of filter: Emergency											
Monday, October 06, 2003											
11:30	1	0	1	100%	0:00:29	0	0%	0:00:00	0:00:29	0:02:16	0:00:00
Summary Monday, October 06, 2003											
	1	0	1	100%	0:00:29	0	0%	0:00:00	0:00:29	0:02:16	0:00:00
Tuesday, October 07, 2003											
12:45	8	0	6	75%	0:00:11	2	25%	0:00:19	0:00:13	0:00:36	0:00:00
Summary Tuesday, October 07, 2003											
	8	0	6	75%	0:00:11	2	25%	0:00:19	0:00:13	0:00:36	0:00:00
Thursday, October 09, 2003											
11:30	2	0	2	100%	0:00:12	0	0%	0:00:00	0:00:12	0:01:08	0:00:00
Summary Thursday, October 09, 2003											
	2	0	2	100%	0:00:12	0	0%	0:00:00	0:00:12	0:01:08	0:00:00

Thursday, October 09, 2003 — Page 1-2

Figure 12.3 EXAMPLE OF "INBOUND CALLS" REPORT SELECTION BY FILTER (1/2)



M7480 report — Inbound voice calls

Beginning	Received	Calls not to transfer: Number	Answered calls: Number	Answered calls: %	Answered calls: Average duration before answer	Abandoned calls: Number	Abandoned calls: %	Abandoned calls: Average duration before abandon	Average duration: Waiting	Average duration: Communication	Average duration: Post call Processing
Summary of Emergency											
	11	0	9	82%	0:00:14	2	18%	0:00:19	0:00:15	0:00:54	0:00:00
Ident. of filter: Urgence											
Monday, October 06, 2003											
11:30	2	0	2	100%	0:00:20	0	0%	0:00:00	0:00:20	0:02:28	0:00:00
Summary Monday, October 06, 2003											
	2	0	2	100%	0:00:20	0	0%	0:00:00	0:00:20	0:02:28	0:00:00
Tuesday, October 07, 2003											
12:45	4	0	4	100%	0:00:04	0	0%	0:00:00	0:00:04	0:00:48	0:00:00
Summary Tuesday, October 07, 2003											
	4	0	4	100%	0:00:04	0	0%	0:00:00	0:00:04	0:00:48	0:00:00
Thursday, October 09, 2003											
11:30	1	0	1	100%	0:00:07	0	0%	0:00:00	0:00:07	0:01:10	0:00:00
Summary Thursday, October 09, 2003											
	1	0	1	100%	0:00:07	0	0%	0:00:00	0:00:07	0:01:10	0:00:00
Summary of Urgence											
	7	0	7	100%	0:00:09	0	0%	0:00:00	0:00:09	0:01:20	0:00:00

Thursday, October 09, 2003 — Page 2-2

FIGURE 12.3 EXAMPLE OF "INBOUND CALLS" REPORT SELECTION BY FILTER (2/2)

12.2.3.3 PREDEFINED REPORT "INBOUND CALLS (DETAILS)"

12.2.3.3.1 General principle

The end of a call belonging to an incoming service results in the backing up of some statistical data. More

particularly, a recording is backed up in the "InboundVoiceCalls" table.

The purpose of the “Inbound calls (Details)” report is to display the different recordings for the service and for each selected filter.

12.2.3.3.2 Content of the report

This report gives the detailed statistics of incoming voice calls for a given period. These calls are for a particular service and the data filtered (see Sheet U-443) for this Service may be displayed.

It is possible to select several filters, and there will be no general summary displayed at the end of the report.

The report contains :

- The call arrival time
- The duration of the IVR part of the call (regardless of whether or not an IVR resource is used for this call)
- Total wait time
- The duration of the conversation after the call has been transferred to an agent (duration of “ACD” and “On-hold” statuses).
- the duration of the post-call-processing (PCP),
- Total call time
- The CLID (or caller name, if available)
- Name of the agent that received the call
- The final status of the call
- The person that on-hooked first The following cases are envisaged:
  - The agent is the one that hung up.
  - The caller is the one that hung up.
  - On-hook has not been detected: this occurs if the physical call is still present when M5000 CC finishes processing a call.

Calls are grouped by filter (if several) filters are selected by day and by DNIS. Average and maximum values are computed for each group. The "-" character indicates that all the values of the group are equal to zero. In this case, there is no value to calculate.

The data on which this report is based is contained in the 'InboundVoiceCalls' table in the 'LongTermStatistics.mdb' database.

12.2.3.3.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the "InboundVoiceCalls" table (see Section 12.3.3.1).

Tableau 12.14

Labels	Formula
Department	ServiceID
Filter	FilterID
DNIS	CallDNIS
Time	CallTime
IVR	CallIVRDuration
Hold	CallWaitingDuration
Call.	CallAgentCommunicationDuration
PCP	CallPCPDuration
Total	[CallIVRDuration]+[CallWaitingDuration]+[CallAgentCommunicationDuration]+[CallPCPDuration]

Tableau 12.14

CLID	CallCLID
Agent	AgentId
Final status	CallDisconnectionStatus
On-hooked by	CallDisconnectingParty

Summary

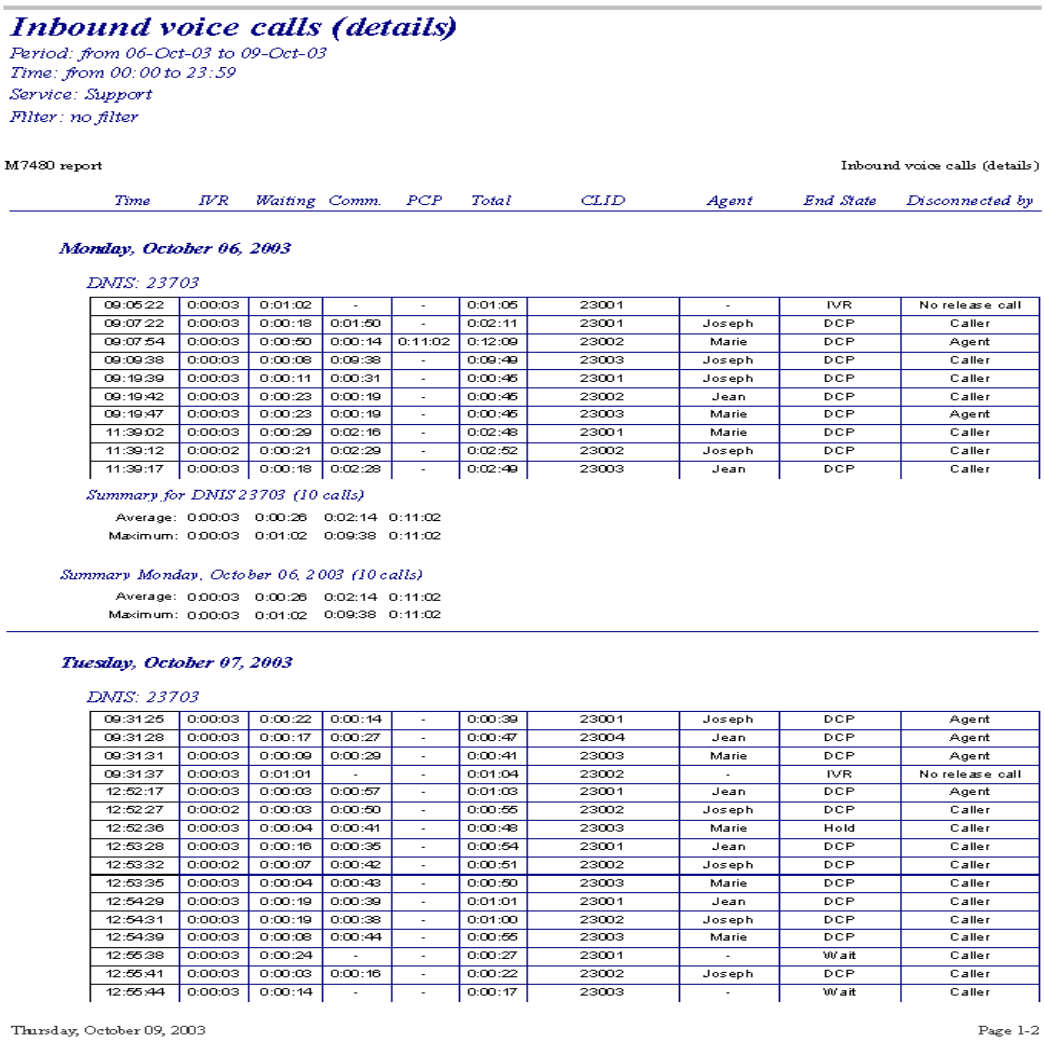
The labels that appear in the summary group together the data available in the corresponding detailed section. The number of calls is also available in the summary header.

Tableau 12.15

Labels	Formula	
	Average	Maximum
IVR	Avg(CallIVRDuration)	Max(CallIVRDuration)
Hold	Avg(CallWaitingDuration)	Max(CallWaitingDuration)
Communication	Avg(CallAgentCommunicationDuration)	Max(CallAgentCommunicationDuration)
PCP	Avg(CallPCPDuration)	Max(CallPCPDuration)
x calls	Count* (of elements in the section)	

Example of "Inbound calls report (details)":

Selection by service



Inbound voice calls (details)

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: Support
Filter: no filter

M7480 report — Inbound voice calls (details)

Monday, October 06, 2003

DNIS: 23703

Time	IVR	Waiting	Comm.	PCP	Total	CLID	Agent	End State	Disconnected by
09:05:22	0:00:03	0:01:02	-	-	0:01:05	23001	-	IVR	No release call
09:07:22	0:00:03	0:00:18	0:01:50	-	0:02:11	23001	Joseph	DCP	Caller
09:07:54	0:00:03	0:00:50	0:00:14	0:11:02	0:12:09	23002	Marie	DCP	Agent
09:09:38	0:00:03	0:00:08	0:09:38	-	0:09:49	23003	Joseph	DCP	Caller
09:19:39	0:00:03	0:00:11	0:00:31	-	0:00:45	23001	Joseph	DCP	Caller
09:19:42	0:00:03	0:00:23	0:00:19	-	0:00:45	23002	Jean	DCP	Caller
09:19:47	0:00:03	0:00:23	0:00:19	-	0:00:45	23003	Marie	DCP	Agent
11:39:02	0:00:03	0:00:29	0:02:16	-	0:02:48	23001	Marie	DCP	Caller
11:39:12	0:00:02	0:00:21	0:02:29	-	0:02:52	23002	Joseph	DCP	Caller
11:39:17	0:00:03	0:00:18	0:02:28	-	0:02:49	23003	Jean	DCP	Caller

Summary for DNIS 23703 (10 calls)

Average:	0:00:03	0:00:26	0:02:14	0:11:02
Maximum:	0:00:03	0:01:02	0:09:38	0:11:02

Summary Monday, October 06, 2003 (10 calls)

Average:	0:00:03	0:00:26	0:02:14	0:11:02
Maximum:	0:00:03	0:01:02	0:09:38	0:11:02

Tuesday, October 07, 2003

DNIS: 23703

09:31:25	0:00:03	0:00:22	0:00:14	-	0:00:39	23001	Joseph	DCP	Agent
09:31:28	0:00:03	0:00:17	0:00:27	-	0:00:47	23004	Jean	DCP	Agent
09:31:31	0:00:03	0:00:09	0:00:29	-	0:00:41	23003	Marie	DCP	Agent
09:31:37	0:00:03	0:01:01	-	-	0:01:04	23002	-	IVR	No release call
12:52:17	0:00:03	0:00:03	0:00:57	-	0:01:03	23001	Jean	DCP	Agent
12:52:27	0:00:02	0:00:03	0:00:50	-	0:00:55	23002	Joseph	DCP	Caller
12:52:36	0:00:03	0:00:04	0:00:41	-	0:00:48	23003	Marie	Hold	Caller
12:53:28	0:00:03	0:00:16	0:00:35	-	0:00:54	23001	Jean	DCP	Caller
12:53:32	0:00:02	0:00:07	0:00:42	-	0:00:51	23002	Joseph	DCP	Caller
12:53:35	0:00:03	0:00:04	0:00:43	-	0:00:50	23003	Marie	DCP	Caller
12:54:29	0:00:03	0:00:19	0:00:39	-	0:01:01	23001	Jean	DCP	Caller
12:54:31	0:00:03	0:00:19	0:00:38	-	0:01:00	23002	Joseph	DCP	Caller
12:54:39	0:00:03	0:00:08	0:00:44	-	0:00:55	23003	Marie	DCP	Caller
12:55:38	0:00:03	0:00:24	-	-	0:00:27	23001	-	Wait	Caller
12:55:41	0:00:03	0:00:03	0:00:16	-	0:00:22	23002	Joseph	DCP	Caller
12:55:44	0:00:03	0:00:14	-	-	0:00:17	23003	-	Wait	Caller

Thursday, October 09, 2003 — Page 1-2

Figure 12.4 EXAMPLE OF "INBOUND CALLS" REPORT (DETAILS) SELECTION BY SERVICE (1/2)

M7480 report — Inbound voice calls (details)

Time	IVR	Waiting	Comm.	PCP	Total	CLID	Agent	End State	Disconnected by

Summary for DNIS 23703 (16 calls)

Average:	0:00:03	0:00:15	0:00:37	-
Maximum:	0:00:03	0:01:01	0:00:57	-

Summary Tuesday, October 07, 2003 (16 calls)

Average:	0:00:03	0:00:15	0:00:37	-
Maximum:	0:00:03	0:01:01	0:00:57	-

Wednesday, October 08, 2003

DNIS: 23703

10:24:09	0:00:03	0:00:03	0:01:00	-	0:01:06	23002	Joseph	DCP	Agent
10:28:49	0:00:03	0:00:06	0:07:01	-	0:07:10	23001	Marie	DCP	Agent
10:28:52	0:00:03	0:00:04	0:04:46	-	0:04:53	23002	Jean	DCP	Agent
10:39:33	0:00:03	0:00:05	0:19:50	-	0:19:58	23003	Marie	DCP	Caller

Summary for DNIS 23703 (4 calls)

Average:	0:00:03	0:00:04	0:08:09	-
Maximum:	0:00:03	0:00:06	0:19:50	-

Summary Wednesday, October 08, 2003 (4 calls)

Average:	0:00:03	0:00:04	0:08:09	-
Maximum:	0:00:03	0:00:06	0:19:50	-

Thursday, October 09, 2003

DNIS: 23703

11:44:32	0:00:03	0:00:17	0:01:05	-	0:01:25	23001	Marie	DCP	Agent
11:44:35	0:00:03	0:00:07	0:01:10	-	0:01:20	23002	Joseph	DCP	Agent
11:44:39	0:00:02	0:00:08	0:01:10	-	0:01:20	23003	Jean	DCP	Agent

Summary for DNIS 23703 (3 calls)

Average:	0:00:03	0:00:11	0:01:08	-
Maximum:	0:00:03	0:00:17	0:01:10	-

Summary Thursday, October 09, 2003 (3 calls)

Average:	0:00:03	0:00:11	0:01:08	-
Maximum:	0:00:03	0:00:17	0:01:10	-

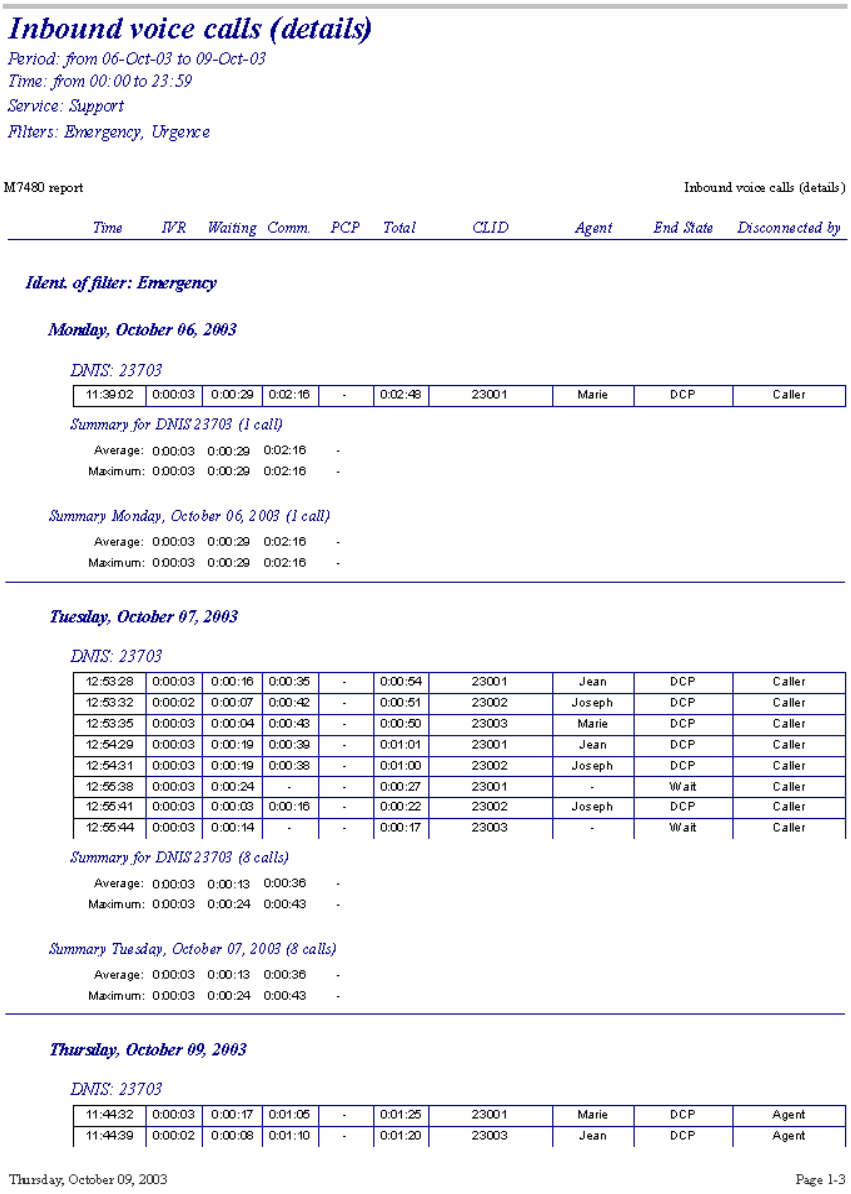
General summary (33 calls)

Average:	0:00:03	0:00:17	0:02:12	0:11:02
Maximum:	0:00:03	0:01:02	0:19:50	0:11:02

Thursday, October 09, 2003 — Page 2-2

FIGURE 12.4 EXAMPLE OF "INBOUND CALLS" REPORT (DETAILS) SELECTION BY SERVICE (2/2)

Selection by filter



Inbound voice calls (details)
Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: Support
Filters: Emergency, Urgence

M7480 report — Inbound voice calls (details)

Time	IVR	Waiting	Comm.	PCP	Total	CLID	Agent	End State	Disconnected by

Ident. of filter: Emergency

Monday, October 06, 2003

DNIS: 23703

11:39:02	0:00:03	0:00:29	0:02:16	-	0:02:48	23001	Marie	DCP	Caller

Summary for DNIS 23703 (1 call)

Average:	0:00:03	0:00:29	0:02:16	-
Maximum:	0:00:03	0:00:29	0:02:16	-

Summary Monday, October 06, 2003 (1 call)

Average:	0:00:03	0:00:29	0:02:16	-
Maximum:	0:00:03	0:00:29	0:02:16	-

Tuesday, October 07, 2003

DNIS: 23703

12:53:28	0:00:03	0:00:16	0:00:35	-	0:00:54	23001	Jean	DCP	Caller
12:53:32	0:00:02	0:00:07	0:00:42	-	0:00:51	23002	Joseph	DCP	Caller
12:53:35	0:00:03	0:00:04	0:00:43	-	0:00:50	23003	Marie	DCP	Caller
12:54:29	0:00:03	0:00:19	0:00:39	-	0:01:01	23001	Jean	DCP	Caller
12:54:31	0:00:03	0:00:19	0:00:38	-	0:01:00	23002	Joseph	DCP	Caller
12:55:38	0:00:03	0:00:24	-	-	0:00:27	23001	-	Wait	Caller
12:55:41	0:00:03	0:00:03	0:00:16	-	0:00:22	23002	Joseph	DCP	Caller
12:55:44	0:00:03	0:00:14	-	-	0:00:17	23003	-	Wait	Caller

Summary for DNIS 23703 (8 calls)

Average:	0:00:03	0:00:13	0:00:36	-
Maximum:	0:00:03	0:00:24	0:00:43	-

Summary Tuesday, October 07, 2003 (8 calls)

Average:	0:00:03	0:00:13	0:00:36	-
Maximum:	0:00:03	0:00:24	0:00:43	-

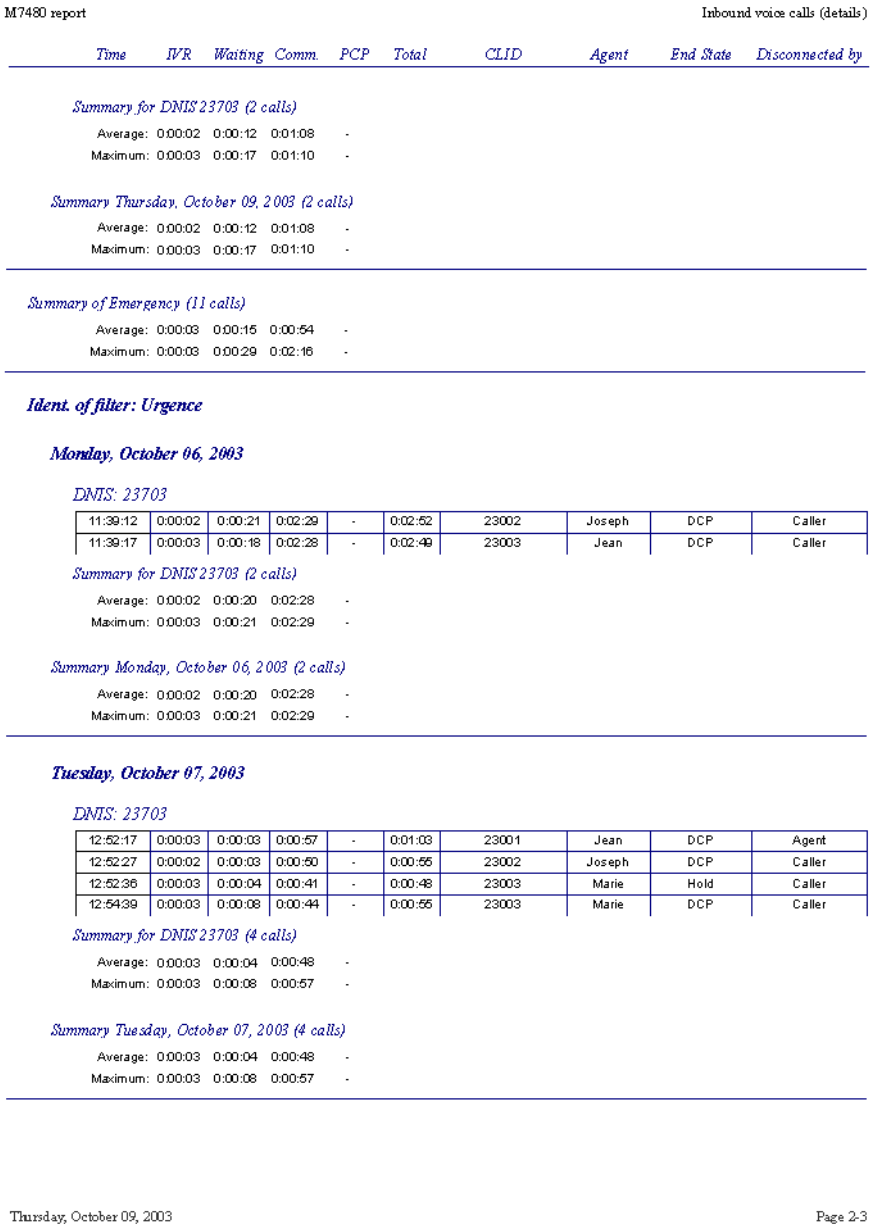
Thursday, October 09, 2003

DNIS: 23703

11:44:32	0:00:03	0:00:17	0:01:05	-	0:01:25	23001	Marie	DCP	Agent
11:44:39	0:00:02	0:00:08	0:01:10	-	0:01:20	23003	Jean	DCP	Agent

Thursday, October 09, 2003 — Page 1-3

Figure 12.5 EXAMPLE OF "INBOUND CALLS" REPORT (DETAILS) SELECTION BY FILTER (1/3)



M7480 report — Inbound voice calls (details)

Time	IVR	Waiting	Comm.	PCP	Total	CLID	Agent	End State	Disconnected by

Summary for DNIS 23703 (2 calls)

Average:	0:00:02	0:00:12	0:01:08	-
Maximum:	0:00:03	0:00:17	0:01:10	-

Summary Thursday, October 09, 2003 (2 calls)

Average:	0:00:02	0:00:12	0:01:08	-
Maximum:	0:00:03	0:00:17	0:01:10	-

Summary of Emergency (11 calls)

Average:	0:00:03	0:00:15	0:00:54	-
Maximum:	0:00:03	0:00:29	0:02:16	-

Ident. of filter: Urgence

Monday, October 06, 2003

DNIS: 23703

11:39:12	0:00:02	0:00:21	0:02:29	-	0:02:52	23002	Joseph	DCP	Caller
11:39:17	0:00:03	0:00:18	0:02:28	-	0:02:49	23003	Jean	DCP	Caller

Summary for DNIS 23703 (2 calls)

Average:	0:00:02	0:00:20	0:02:28	-
Maximum:	0:00:03	0:00:21	0:02:29	-

Summary Monday, October 06, 2003 (2 calls)

Average:	0:00:02	0:00:20	0:02:28	-
Maximum:	0:00:03	0:00:21	0:02:29	-

Tuesday, October 07, 2003

DNIS: 23703

12:52:17	0:00:03	0:00:03	0:00:57	-	0:01:03	23001	Jean	DCP	Agent
12:52:27	0:00:02	0:00:03	0:00:50	-	0:00:55	23002	Joseph	DCP	Caller
12:52:36	0:00:03	0:00:04	0:00:41	-	0:00:48	23003	Marie	Hold	Caller
12:54:39	0:00:03	0:00:08	0:00:44	-	0:00:55	23003	Marie	DCP	Caller

Summary for DNIS 23703 (4 calls)

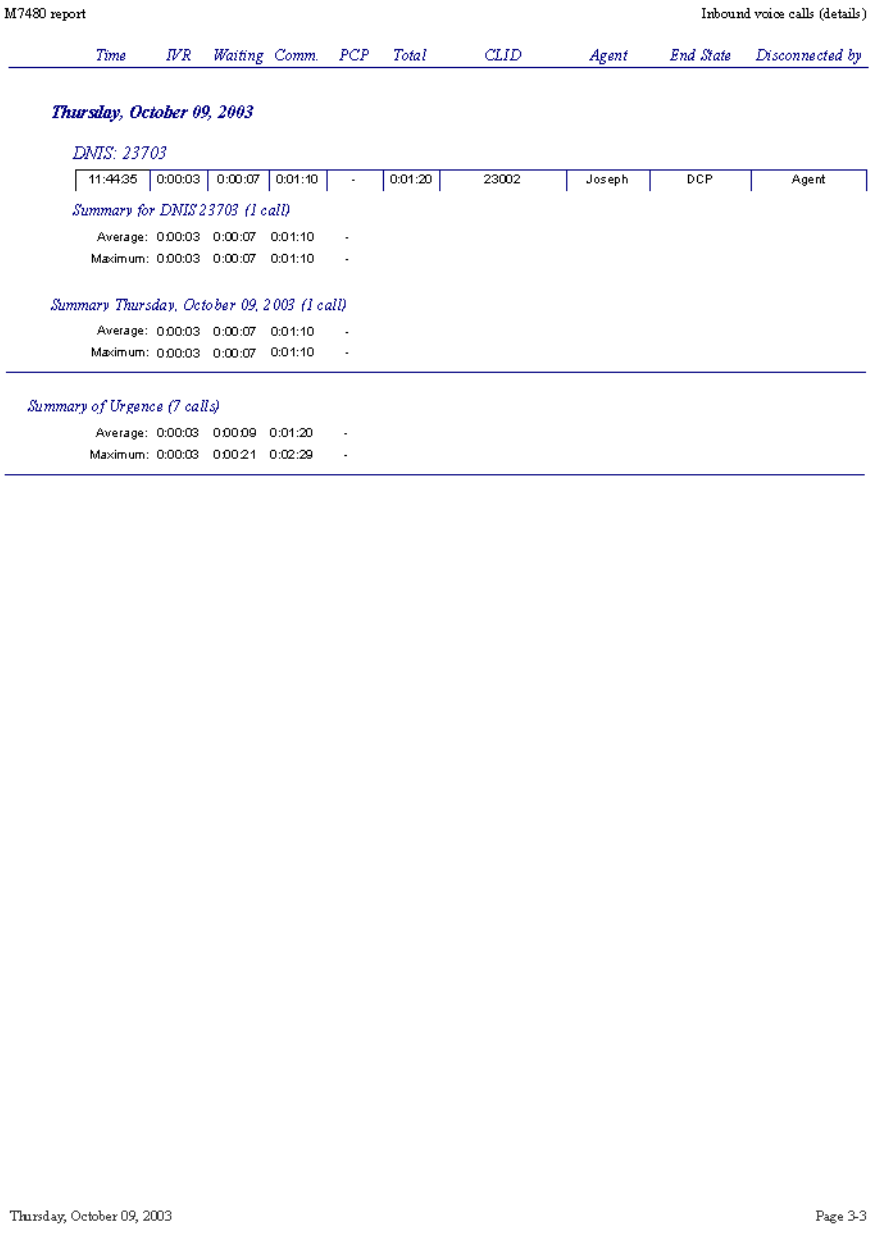
Average:	0:00:03	0:00:04	0:00:48	-
Maximum:	0:00:03	0:00:08	0:00:57	-

Summary Tuesday, October 07, 2003 (4 calls)

Average:	0:00:03	0:00:04	0:00:48	-
Maximum:	0:00:03	0:00:08	0:00:57	-

Thursday, October 09, 2003 — Page 2-3

FIGURE 12.5 EXAMPLE OF "INBOUND CALLS" REPORT (DETAILS) SELECTION BY FILTER (2/3)



M7480 report — Inbound voice calls (details)

Time	IVR	Waiting	Comm.	PCP	Total	CLID	Agent	End State	Disconnected by
Thursday, October 09, 2003									
DNIS: 23703									
11:44:35	0:00:03	0:00:07	0:01:10	-	0:01:20	23002	Joseph	DCP	Agent
Summary for DNIS 23703 (1 call)									
Average:	0:00:03	0:00:07	0:01:10	-					
Maximum:	0:00:03	0:00:07	0:01:10	-					
Summary Thursday, October 09, 2003 (1 call)									
Average:	0:00:03	0:00:07	0:01:10	-					
Maximum:	0:00:03	0:00:07	0:01:10	-					
Summary of Urgence (7 calls)									
Average:	0:00:03	0:00:09	0:01:20	-					
Maximum:	0:00:03	0:00:21	0:02:29	-					

Thursday, October 09, 2003 — Page 3-3

FIGURE 12.5 EXAMPLE OF "INBOUND CALLS" REPORT (DETAILS) SELECTION BY FILTER (3/3)

12.2.3.4 PREDEFINED REPORT "INBOUND CALLS" (GENERAL STATISTICS)

12.2.3.4.1 General principle

The end of a call belonging to an incoming service results in the backing up of some statistical data. More particularly, a recording is backed up (or updated) in the consolidated "InboundCallsPerServicePer*" and "CallsDurationsPer*" tables.

The purpose of the "Inbound calls (general statistics)" report is to display a summary for each level of precision (precision per quarter of an hour, half hour, hour, day, week and month) for the different calls received in the selected incoming service (filtered or not filtered).

12.2.3.4.2 Content of the report

This report gives the statistics of incoming calls for a given period. These calls are for a particular service and the data filtered (see Sheet U-443) for this Service may be displayed. It is possible to select several filters. This report shows a general summary of inbound calls, over a single page.

If several filters are selected, the report contains a general summary of inbound calls per selected filter.

It contains :

- The number of calls received
- The number of answered calls
- The percentage of calls answered compared to the number of calls received
- The average wait time before answer
- The number of calls whose wait time before answer is below a value X
- The number of calls whose wait time before answer is between a value X and Y
- The number of calls whose wait time before answer is above the value Y
- The number of lost calls
- The percentage of calls lost compared to the number of calls received
- The average wait time before abandonment
- The number of calls whose wait time before abandonment is below a value I
- The number of calls whose wait time before abandonment is between the values I and J
- The number of calls whose wait time before abandonment is above the value J
- total call time (see § 1.4),
- total call time (see § 1.4).

The data on which the report is based is contained in the "InboundCallsPerServicePer*" and "CallsDurationsPer*" tables in the "LongTermStatistics.mdb" database.

12.2.3.4.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the "InboundCallsPerServicePer*" and "CallsDurationsPer*" tables (see Sections 12.3.3.15 and 12.3.3.16).

The choice of parameters with thresholds is made while editing the corresponding report.

Tableau 12.16

Labels	Formula	
Department	ServiceID	
Filter	FilterID	
General information		
Number of calls received on the service	NbrCalls	
Calls answered		
Number of answered calls	NbrCallsAnswered	(NbrCallsAnswered/NbrCalls) * 100
Average wait time before answer	TotalCallsAnsweredWaitingDuration / NbrCallsAnswered	

Tableau 12.16

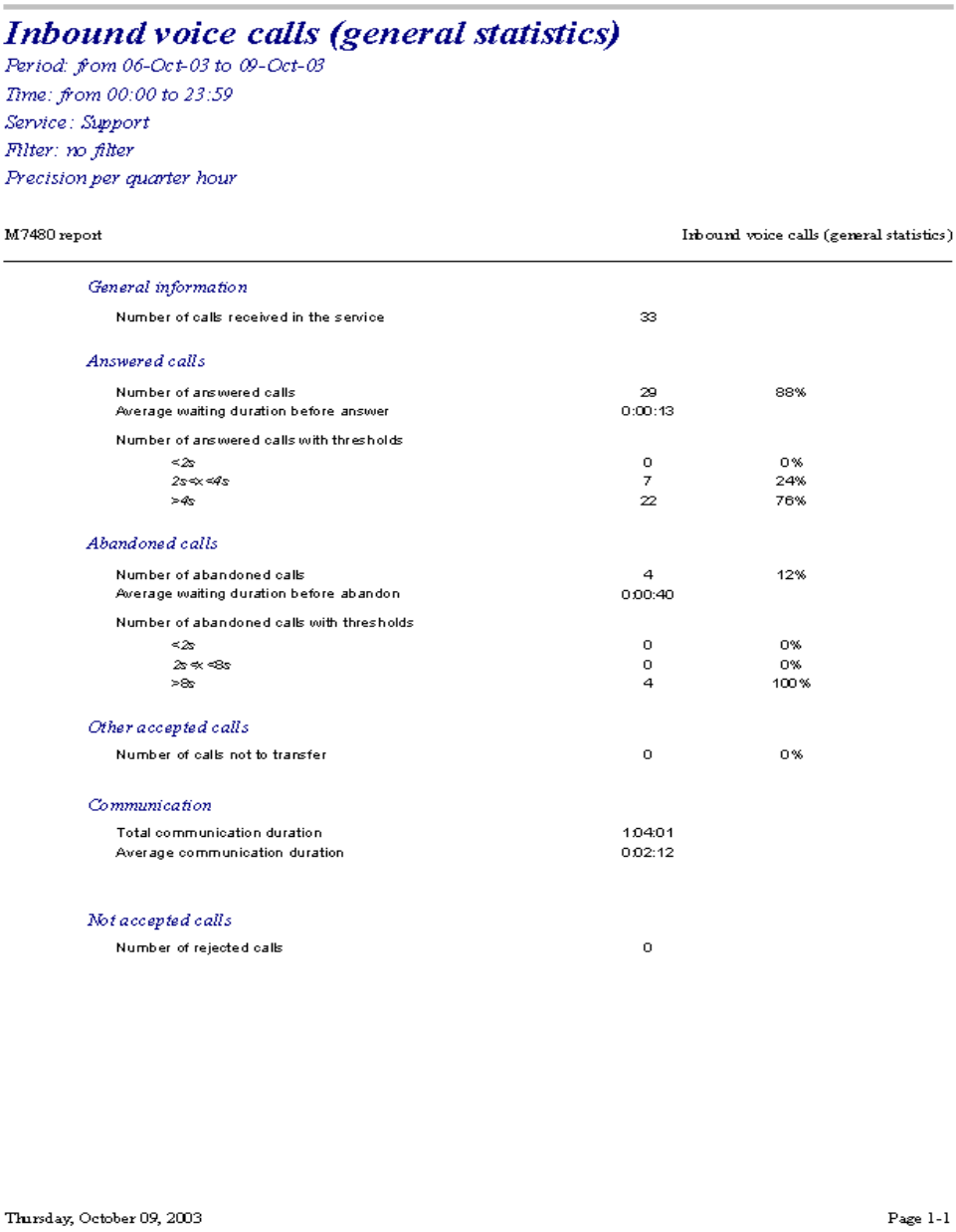
Number of answered calls with thresholds (x1,x2)	< x1	NbrCallsAnsweredWaitingDuration if	UpperBound <= x1 and UpperBound<>0
	x1 < x < x2		LowerBound>= x1 and UpperBound<=x2 and UpperBound<>0
	> x2		UpperBound >= x2
Calls abandoned			
Number of calls abandoned		NbrCallsAbandoned	(NbrCallsAbandoned/NbrCalls) * 100
Average wait time before abandon		TotalCallsAbandonedWaitingDuration / NbrCallsAbandoned	
Number of calls abandoned with thresholds (y1,y2)	< y1	NbrCallsAbandonedWaitingDuration if	UpperBound <= y1 and UpperBound<>0
	y1 < y < y2		LowerBound>= y1 and UpperBound<=y2 and UpperBound<>0
	> y2		UpperBound >= y2
Other calls accepted			
Number of Calls not to be transferred		NbrCallsNotToTransfer	(NbrCallsNotToTransfer /NbrCalls) * 100
Communication			
Total communication duration		TotalCallsAgentCommunicationDuration	
Rejected calls			
Number of rejected calls		NbrRejectedCalls	

Summary

This report does not contain any summary and its content can be held on only one page unless several filters are chosen (1 page per selected filter).

Sample report: Inbound calls (general statistics), precision per quarter hour:

Selection by service



Inbound voice calls (general statistics)

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: Support
Filter: no filter
Precision per quarter hour

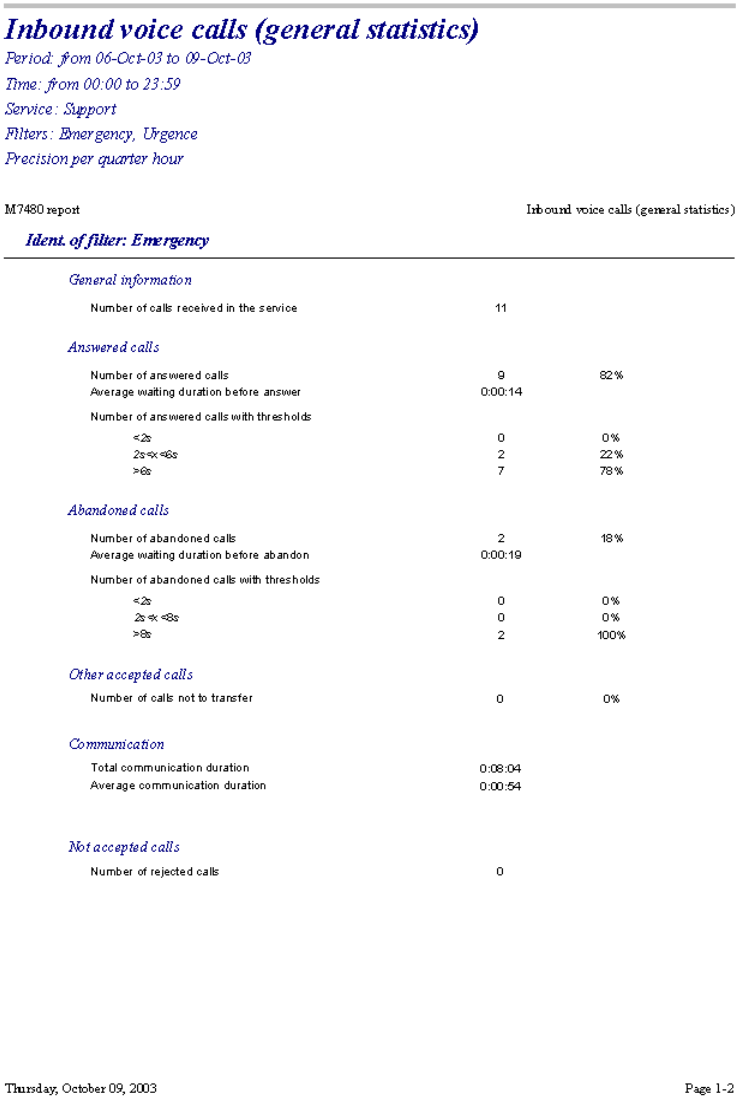
M7480 report — Inbound voice calls (general statistics)

General information		
Number of calls received in the service	33	
Answered calls		
Number of answered calls	29	88%
Average waiting duration before answer	0:00:13	
Number of answered calls with thresholds		
<2s	0	0%
2s<x<4s	7	24%
>4s	22	76%
Abandoned calls		
Number of abandoned calls	4	12%
Average waiting duration before abandon	0:00:40	
Number of abandoned calls with thresholds		
<2s	0	0%
2s<x<8s	0	0%
>8s	4	100%
Other accepted calls		
Number of calls not to transfer	0	0%
Communication		
Total communication duration	1:04:01	
Average communication duration	0:02:12	
Not accepted calls		
Number of rejected calls	0	

Thursday, October 09, 2003 — Page 1-1

Figure 12.6 EXAMPLE OF "INBOUND CALLS REPORT (DETAILS)"

Selection by filter



Inbound voice calls (general statistics)

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: Support
Filters: Emergency, Urgence
Precision per quarter hour

M7480 report — Inbound voice calls (general statistics)

Ident. of filter: Emergency

General information

Number of calls received in the service	11	

Answered calls

Number of answered calls	9	82%
Average waiting duration before answer	0:00:14	
Number of answered calls with thresholds		
<2s	0	0%
2s=x<8s	2	22%
>8s	7	78%

Abandoned calls

Number of abandoned calls	2	18%
Average waiting duration before abandon	0:00:19	
Number of abandoned calls with thresholds		
<2s	0	0%
2s=x<8s	0	0%
>8s	2	100%

Other accepted calls

Number of calls not to transfer	0	0%

Communication

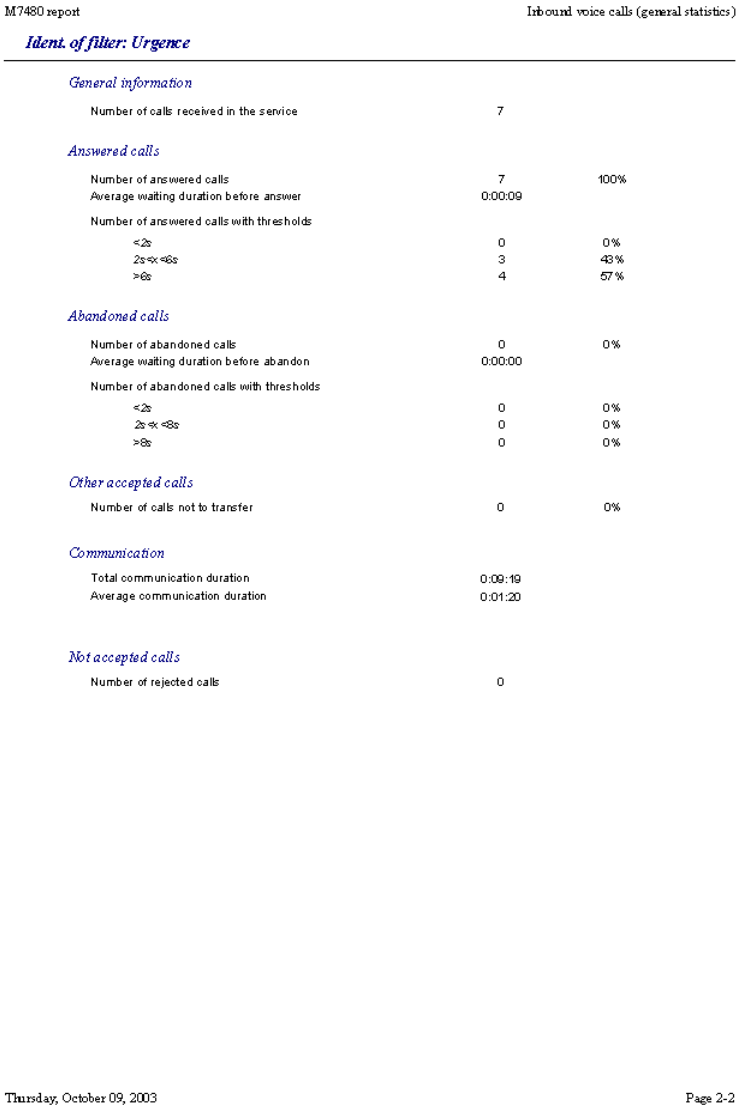
Total communication duration	0:08:04
Average communication duration	0:00:54

Not accepted calls

Number of rejected calls	0

Thursday, October 09, 2003 — Page 1-2

Figure 12.7 EXAMPLE OF "INBOUND CALLS (GENERAL STATISTICS)" REPORT - SELECTION BY FILTER (1/2)



M7480 report — Inbound voice calls (general statistics)

Ident. of filter: Urgence

General information

Number of calls received in the service	7

Answered calls

Number of answered calls	7	100%
Average waiting duration before answer	0:00:09	
Number of answered calls with thresholds		
<2s	0	0%
2s=<x<=8s	3	43%
>8s	4	57%

Abandoned calls

Number of abandoned calls	0	0%
Average waiting duration before abandon	0:00:00	
Number of abandoned calls with thresholds		
<2s	0	0%
2s=<x<=8s	0	0%
>8s	0	0%

Other accepted calls

Number of calls not to transfer	0	0%

Communication

Total communication duration	0:09:19
Average communication duration	0:01:20

Not accepted calls

Number of rejected calls	0

Thursday, October 09, 2003 — Page 2-2

FIGURE 12.7 EXAMPLE OF "INBOUND CALLS (GENERAL STATISTICS)" REPORT - SELECTION BY FILTER (2/2)

12.2.3.5 PREDEFINED REPORT "INBOUND CALLS (GRAPHIC)"

12.2.3.5.1 General principle

The end of a call belonging to an incoming service results in the backing up of some statistical data. More particularly, a recording is backed up (or updated) in the consolidated "InboundCallsPerServicePer*" table.

The purpose of the "Inbound calls" report is to display a summary for each level of precision (precision per quarter of an hour, half hour, hour, day, week and month) for the different calls received in the selected incoming service (filtered or not filtered).

The summary is displayed in form of histogram for the chosen period.

12.2.3.5.2 Content of the report

This report gives the statistics of incoming calls for a given period. The report displays the calls belonging to a particular Service and the filtered data (see Sheet U-443) if this Service can also be displayed. It is possible to select several filters. The report contains a general summary of inbound calls, in form of a graph.

If several filters are selected, the report contains a graph per selected filter, if data exists for this filter.

This report contains, for each period of time (depending on the accuracy : per quarter hour, half hour, hour, day, week, or month) within the date and time intervals specified :

- The number of calls received
- The number of answered calls
- The number of lost calls
- The number of calls rejected (calls on a night message).

The data on which the report is based is contained in the 'InboundCallsPerServicePer*' tables in the 'LongTermStatistics.mdb' database.

12.2.3.5.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the "InboundCallsPerServicePer*" table (see Section 12.3.3.15).

The choice of parameters with thresholds is made while editing the corresponding report.

Tableau 12.17

Labels	Formula
Department	ServiceID
Filter	FilterID
Begin	BeginTime
Received calls	Sum(NbrCalls)
Calls answered	Sum(NbrCallsAnswered)
Calls abandoned	Sum(NbrCallsAbandoned)
Calls not to be transferred	Sum(NbrCallsNotToTransfer)
Rejected calls	Sum(NbrRejectedCalls)

Summary

This report does not contain any summary and its content can be held on only one page unless several filters are chosen (1 page per selected filter).

Sample report: Inbound calls (graphic), precision per half hour:

Selection by service

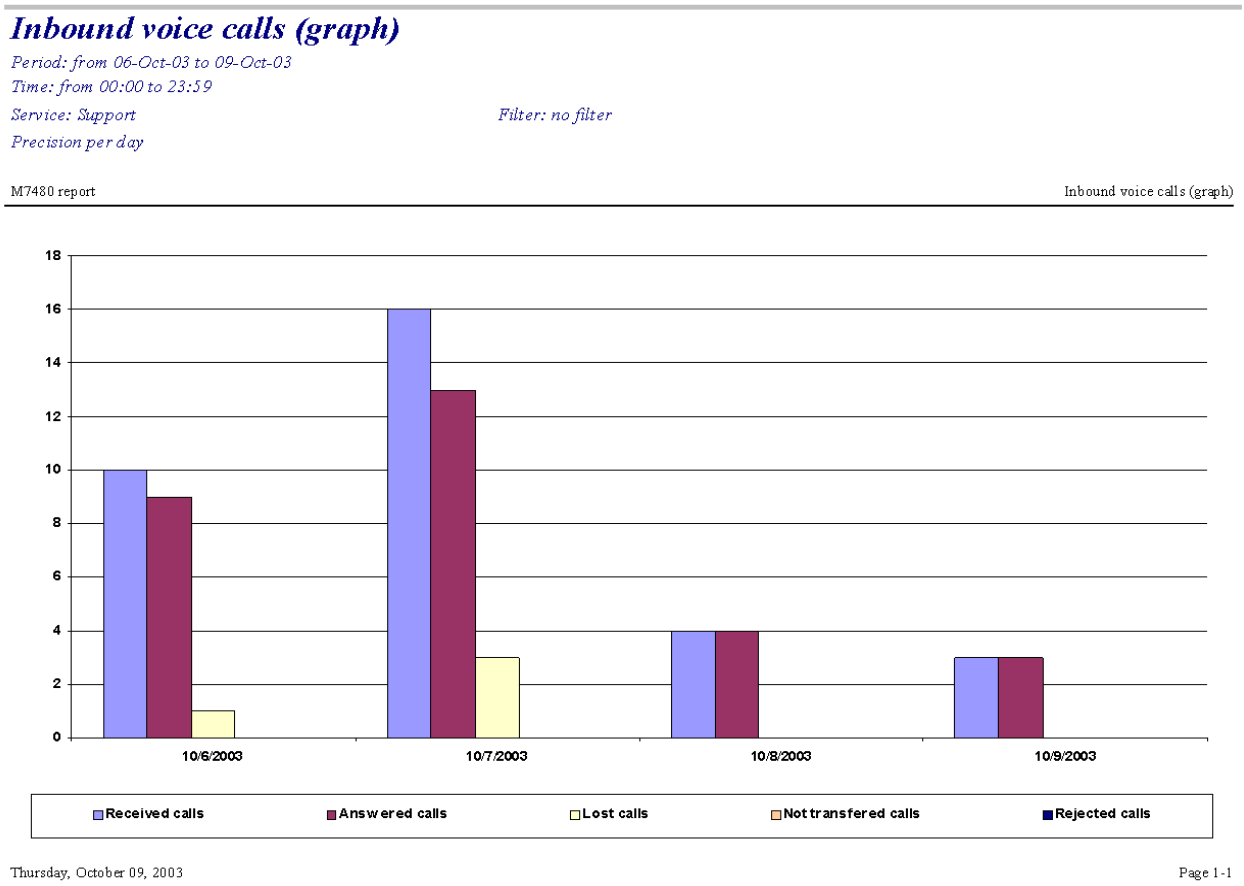


Figure 12.8 EXAMPLE OF "INBOUND CALLS (GRAPHIC)" REPORT – SELECTION BY SERVICE

Selection by filter

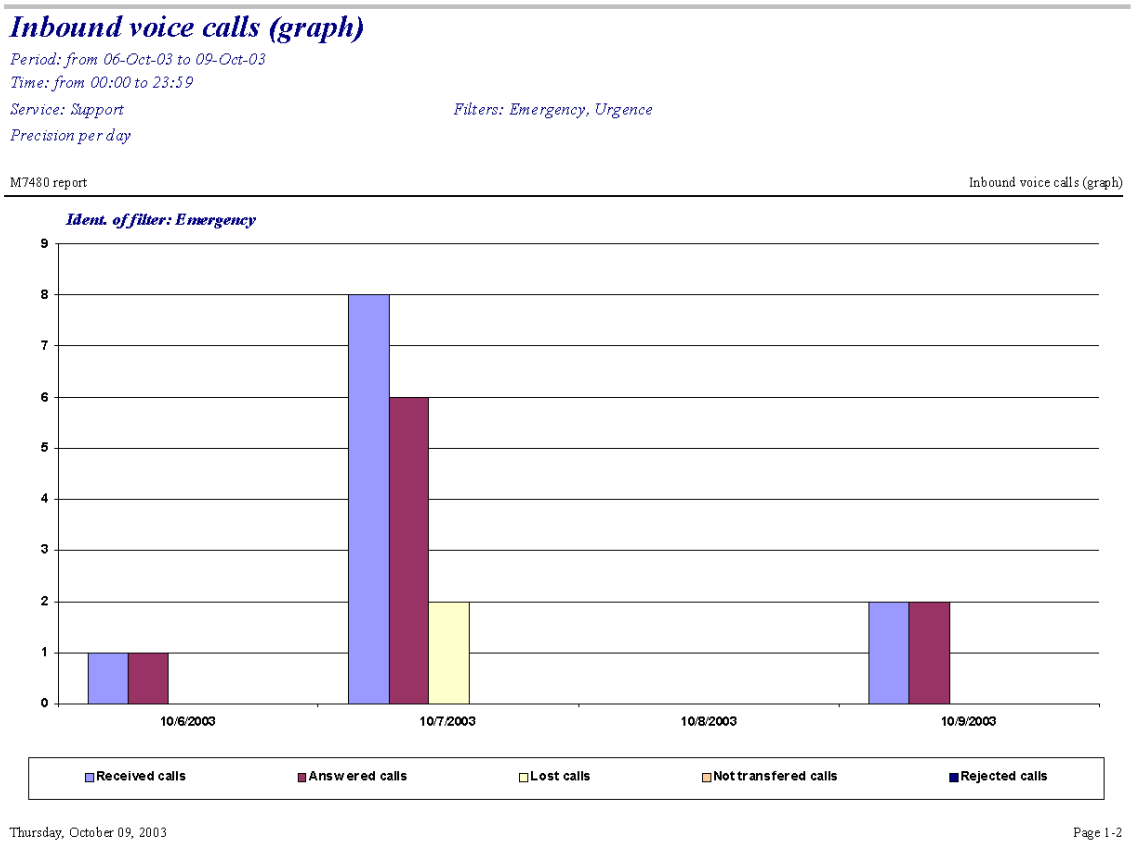


Figure 12.9 EXAMPLE OF "INBOUND CALLS (DETAILS)" REPORT - SELECTION BY FILTER (1/2)

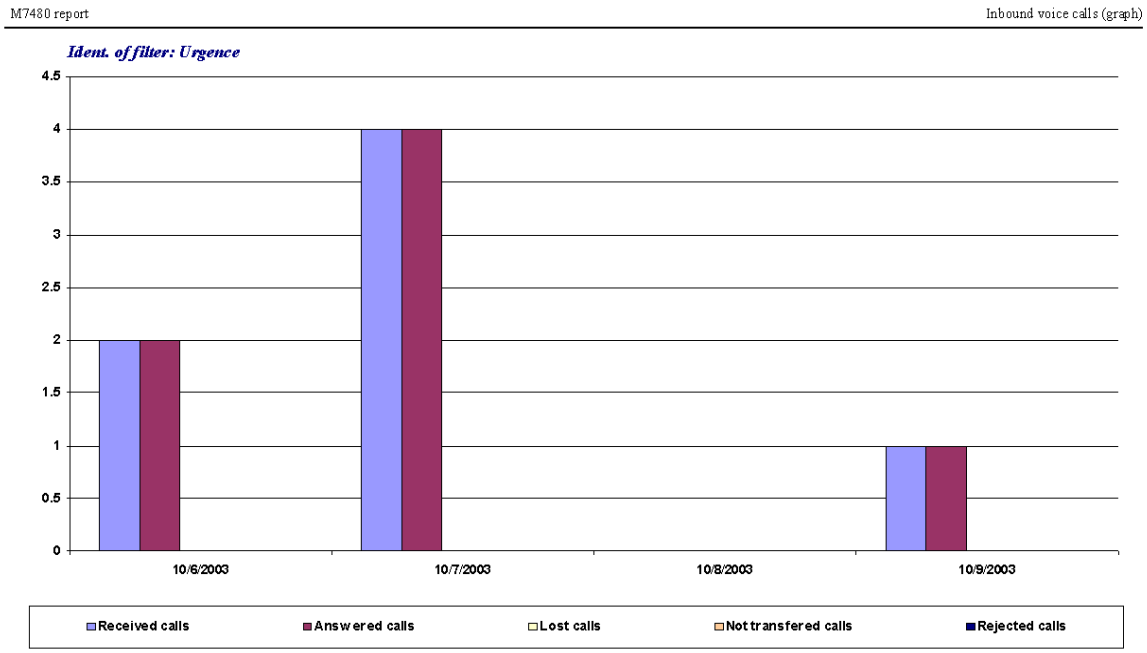


FIGURE 12.9 EXAMPLE OF "INBOUND CALLS (DETAILS)" REPORT - SELECTION BY FILTER (2/2)

12.2.3.6 PREDEFINED REPORT "LOST INBOUND CALLS"

12.2.3.6.1 General principle

The end of a call belonging to an incoming service results in the backing up of some statistical data. More particularly, a recording is backed up (or updated) in the consolidated "InboundCallsPerServicePer*" and "CallsDurationsPer*" tables.

The purpose of the "Lost inbound calls" report is to display a summary for each level of precision (precision per quarter of an hour, half hour, hour, day, week and month) for the different calls received and lost in the selected incoming service (filtered or not filtered).

12.2.3.6.2 Content of the report

This report gives the statistics of lost incoming calls for a given period. The report displays the calls belonging to a particular Service and the filtered data (see Sheet U-443) if this Service can also be displayed. It is possible to select several filters, and there will be no general summary displayed at the end of the report. This report presents all the calls rejected or aborted.

This report contains, for each period of time (depending on the accuracy : per quarter hour, half hour, hour, day, week, or month) during which calls were made :

- The start date or time for this period of time
- The number of calls received during this period of time
- The number of lost calls
- The percentage of calls lost compared to the number of calls received
- The average wait time before abandonment
- The number of calls whose wait time before abandonment is less than a value X
- The number of calls whose wait time before abandonment is between the values X and Y
- The number of calls whose wait time before abandonment is above the value Y
- The number of calls rejected (calls on a night message).

Depending on the precision selected, a daily summary (precision per quarter hour, half hour, or hour), monthly summary (precision per day or week) or annual summary (precision per month) is given, and in all cases a general summary is given for the service (if no filter is selected) or per displayed filter (if several filters are selected).

The data on which the report is based is contained in the "InboundCallsPerServicePer*" and "CallsDurationsPer*" tables in the "LongTermStatistics.mdb" database.

12.2.3.6.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the "InboundCallsPerServicePer*" and "CallsDurationsPer*" tables (see Sections 12.3.3.15 and 12.3.3.16).

The choice of parameters with thresholds is made while editing the corresponding report.

Tableau 12.18

Labels	Formula
Department	ServiceID
Filter	FilterID
Begin	BeginTime
Received	NbrCalls
Cancelled	NbrCallsAbandoned
%	(NbrCallsAbandoned / NbrCalls) * 100
Rejected	NbrRejectedCalls
Hold	
Average timeout before abandon	TotalCallsAbandonedWaitingDuration / NbrCallsAbandoned

Tableau 12.18

Number of calls abandoned with thresholds (x1,x2)	< x1	NbrCallsAbandonedWaitingDuration	UpperBound <= x1 and UpperBound<>0
	x1 < x < x2		LowerBound>= x1 and UpperBound<=x2 and UpperBound<>0
	> x2		UpperBound >= x2

Summary

The labels that appear in the summary group together the data available in the detailed section in the corresponding precision level.

Tableau 12.19

Labels		Formula	
Received		Sum(NbrCalls)	
Cancelled		Sum(NbrCallsAbandoned)	
%		(Sum(NbrCallsAbandoned) / Sum(NbrCalls)) * 100	
Rejected		Sum(NbrRejectedCalls)	
Hold			
Average timeout before abandon		Sum(TotalCallsAbandonedWaitingDuration) / Sum(NbrCallsAbandoned)	
Number of calls abandoned with thresholds (x1,x2)	< x1	Sum(NbrCallsAbandonedWaitingDuration)	UpperBound <= x1 and UpperBound<>0
	x1 < x < x2		LowerBound>= x1 and UpperBound<=x2 and UpperBound<>0
	> x2		UpperBound >= x2

Example of Inbound lost calls report (precision per hour):

Selection by service

Inbound lost voice calls

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: Support
Filter: no filter
Precision per quarter hour

M7480 report — Inbound lost voice calls

Beginning	Received	Abandoned	%	Rejected	Waiting: Average duration before abandon	Waiting: <2s	Waiting: 2s<x<8s	Waiting: >8s
Monday, October 06, 2003								
09:00	4	1	25%	0	0:01:02	0	0	1
09:15	3	0	0%	0	0:00:00	0	0	0
11:30	3	0	0%	0	0:00:00	0	0	0
Summary Monday, October 06, 2003								
	10	1	10%	0	0:01:02	0	0	1
Tuesday, October 07, 2003								
09:30	4	1	25%	0	0:01:01	0	0	1
12:45	12	2	17%	0	0:00:19	0	0	2
Summary Tuesday, October 07, 2003								
	16	3	19%	0	0:00:33	0	0	3
Wednesday, October 08, 2003								
10:15	3	0	0%	0	0:00:00	0	0	0
10:30	1	0	0%	0	0:00:00	0	0	0
Summary Wednesday, October 08, 2003								
	4	0	0%	0	0:00:00	0	0	0
Thursday, October 09, 2003								
11:30	3	0	0%	0	0:00:00	0	0	0
Summary Thursday, October 09, 2003								
	3	0	0%	0	0:00:00	0	0	0
General summary								
	33	4	12%	0	0:00:40	0	0	4

Thursday, October 09, 2003 — Page 1-1

Figure 12.10 EXAMPLE OF "LOST INBOUND CALLS" REPORT – SELECTION BY SERVICE

Selection by filter

Inbound lost voice calls

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: Support
Filters: Emergency, Urgence
Precision per quarter hour

M7480 report — Inbound lost voice calls

Beginning	Received	Abandoned	%	Rejected	Waiting: Average duration before abandon	Waiting: <2s	Waiting: 2s<x<8s	Waiting: >8s
Ident. of filter: Emergency								
Monday, October 06, 2003								
11:30	1	0	0%	0	0:00:00	0	0	0
Summary Monday, October 06, 2003								
	1	0	0%	0	0:00:00	0	0	0
Tuesday, October 07, 2003								
12:45	8	2	25%	0	0:00:19	0	0	2
Summary Tuesday, October 07, 2003								
	8	2	25%	0	0:00:19	0	0	2
Thursday, October 09, 2003								
11:30	2	0	0%	0	0:00:00	0	0	0
Summary Thursday, October 09, 2003								
	2	0	0%	0	0:00:00	0	0	0
Summary of Emergency								
	11	2	18%	0	0:00:19	0	0	2
Ident. of filter: Urgence								
Monday, October 06, 2003								
11:30	2	0	0%	0	0:00:00	0	0	0
Summary Monday, October 06, 2003								
	2	0	0%	0	0:00:00	0	0	0

Thursday, October 09, 2003 — Page 1-2

Figure 12.11 EXAMPLE OF "LOST INBOUND CALLS" REPORT - SELECTION BY FILTER (1/2)

M7480 report — Inbound lost voice calls

Beginning	Received	Abandoned	%	Rejected	Waiting: Average duration before abandon	Waiting: <2s	Waiting: 2s<x<8s	Waiting: >8s
Tuesday, October 07, 2003								
12:45	4	0	0%	0	0:00:00	0	0	0
Summary Tuesday, October 07, 2003								
	4	0	0%	0	0:00:00	0	0	0
Thursday, October 09, 2003								
11:30	1	0	0%	0	0:00:00	0	0	0
Summary Thursday, October 09, 2003								
	1	0	0%	0	0:00:00	0	0	0
Summary of Urgence								
	7	0	0%	0	0:00:00	0	0	0

Thursday, October 09, 2003 — Page 2-2

FIGURE 12.11 EXAMPLE OF "LOST INBOUND CALLS" REPORT - SELECTION BY FILTER (2/2)

12.2.3.7 PREDEFINED REPORT "INBOUND CALLS ANSWERED"

12.2.3.7.1 General principle

The end of a call belonging to an incoming service results in the backing up of some statistical data. More particularly, a recording is backed up (or updated) in the consolidated "InboundCallsPerServicePer*" and "CallsDurationsPer*" tables.

The purpose of the "Lost inbound calls" report is to display a summary for each level of precision (precision per quarter of an hour, half hour, hour, day, week and month) for the different calls received and answered in the selected incoming service (filtered or not filtered).

12.2.3.7.2 Content of the report

This report gives the statistics of answered incoming calls for a given period. The report displays the calls belonging to a particular Service and the filtered data (see Sheet U-443) if this Service can also be displayed. It is possible to select several filters, and there will be no general summary displayed at the end of the report.

This report contains, for each period of time (depending on the accuracy : per quarter hour, half hour, hour, day, week, or month) during which calls were made :

- The start date or time for this period of time
- The number of calls received
- The number of answered calls
- The percentage of calls answered compared to the number of calls received
- The average wait time before answer
- The number of calls whose wait time before answer is below a value X
- The number of calls whose wait time before answer is between a value X and Y
- The number of calls whose wait time before answer is above the value Y
- total call time (see § 1.4),
- The number of calls with an average duration below a value I
- The number of calls with an average duration between the values I and J
- The number of calls with an average duration above a value J
- The average post-call processing time.

Depending on the precision selected, a daily summary (precision per quarter hour, half hour, or hour), monthly summary (precision per day or week) or annual summary (precision per month) is given, and in all cases a general summary is given for the service (if no filter is selected) or per displayed filter (if several filters are selected).

The data on which the report is based is contained in the "InboundCallsPerServicePer*" and "CallsDurationsPer*" tables in the "LongTermStatistics.mdb" database.

12.2.3.7.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the "InboundCallsPerServicePer*" and "CallsDurationsPer*" tables (see Sections 12.3.3.15 and 12.3.3.16).

The choice of parameters with thresholds is made while editing the corresponding report.

Tableau 12.20

Labels	Formula
Department	ServiceID
Filter	FilterID
Begin	BeginTime
Received	NbrCalls
Answered	NbrCallsAnswered
%	(NbrCallsAbandoned / NbrCalls) * 100

Tableau 12.20

Hold			
Average timeout before answer		TotalCallsAnsweredWaitingDuration / NbrCallsAnswered	
Number of answered calls with thresholds (x1,x2)	< x1	NbrCallsAnsweredWaitingDuration	UpperBound <= x1 and UpperBound<>0
	x1 < x < x2		LowerBound>= x1 and UpperBound<=x2 and UpperBound<>0
	> x2		UpperBound >= x2
Communication			
Average duration		TotalCallsAgentCommunicationDuration / NbrCallsAnswered	
Number of answered calls with thresholds (y1,y2)	< y1	NbrCallsCommunicationDuration	UpperBound <= y1 and UpperBound<>0
	y1 < y < y2		LowerBound>= y1 and UpperBound<=y2 and UpperBound<>0
	> y2		UpperBound >= y2
Average post-call processing time		TotalPCPDuration / NbrCallsAnswered	

Summary

The labels that appear in the summary group together the data available in the detailed section in the corresponding precision level.

Tableau 12.21

Labels		Formula	
Received		Sum(NbrCalls)	
Answered		Sum(NbrCallsAnswered)	
%		(Sum(NbrCallsAnswered) / Sum(NbrCalls)) * 100	
Hold			
Average timeout before answer		Sum(TotalCallsAnsweredWaitingDuration) / Sum(NbrCallsAnswered)	
Number of answered calls with thresholds (x1,x2)	< x1	Sum(NbrCallsAnsweredWaitingDuration)	UpperBound <= x1 and UpperBound<>0
	x1 < x < x2		LowerBound>= x1 and UpperBound<=x2 and UpperBound<>0
	> x2		UpperBound >= x2
Communication			
Average duration		Sum(TotalCallsAgentCommunicationDuration) / Sum(NbrCallsAnswered)	

Tableau 12.21

Number of answered calls with thresholds (y1,y2)	< y1	Sum(NbrCallsCommunicationDuration)	UpperBound <= y1 and UpperBound<>0
	y1 < y < y2		LowerBound>= y1 and UpperBound<=y2 and UpperBound<>0
	> y2		UpperBound >= y2
Average post-call processing time		Sum(TotalPCPDuration) / Sum(NbrCallsAnswered)	

Example of Inbound calls answered report (precision per hour):

Selection by service

Inbound answered voice calls

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: Support
Filter: no filter
Precision per quarter hour

M7480 report — Inbound answered voice calls

				Waiting				Communication				
Beginning	Received	Answered	%	Average duration before answer	<=2s	2s<x<=8s	>8s	Average duration	<=2s	2s<x<=6s	>6s	Average post call processing duration
Monday, October 06, 2003												
09:00	4	3	75%	0:00:25	0	1	2	0:03:54	0	0	3	0:03:41
09:15	3	3	100%	0:00:19	0	0	3	0:00:23	0	0	3	0:00:00
11:30	3	3	100%	0:00:23	0	0	3	0:02:24	0	0	3	0:00:00
Summary Monday, October 06, 2003												
	10	9	90%	0:00:22	0	1	8	0:02:14	0	0	9	0:01:14
Tuesday, October 07, 2003												
09:30	4	3	75%	0:00:16	0	0	3	0:00:23	0	0	3	0:00:00
12:45	12	10	83%	0:00:09	0	7	3	0:00:40	0	0	10	0:00:00
Summary Tuesday, October 07, 2003												
	16	13	81%	0:00:10	0	7	6	0:00:37	0	0	13	0:00:00
Wednesday, October 08, 2003												
10:15	3	3	100%	0:00:04	0	3	0	0:04:16	0	0	3	0:00:00
10:30	1	1	100%	0:00:05	0	1	0	0:19:50	0	0	1	0:00:00

Thursday, October 09, 2003 — Page 1-2

Figure 12.12 EXAMPLE OF "ANSWERED INBOUND CALLS" REPORT - SELECTION BY SERVICE (1/2)

M7480 report — Inbound answered voice calls

				Waiting				Communication				
Beginning	Received	Answered	%	Average duration before answer	<=2s	2s<x<=8s	>8s	Average duration	<=2s	2s<x<=6s	>6s	Average post call processing duration
Summary Wednesday, October 08, 2003												
	4	4	100%	0:00:04	0	4	0	0:08:09	0	0	4	0:00:00
Thursday, October 09, 2003												
11:30	3	3	100%	0:00:11	0	2	1	0:01:08	0	0	3	0:00:00
Summary Thursday, October 09, 2003												
	3	3	100%	0:00:11	0	2	1	0:01:08	0	0	3	0:00:00
General summary												
	33	29	88%	0:00:13	0	14	15	0:02:12	0	0	29	0:00:23

Thursday, October 09, 2003 — Page 2-2

FIGURE 12.12 EXAMPLE OF "ANSWERED INBOUND CALLS" REPORT - SELECTION BY SERVICE (2/2)

Selection by filter

Inbound answered voice calls

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: Support
Filters: Emergency, Urgence
Precision per quarter hour

M7480 report — Inbound answered voice calls

Beginning	Received	Answered	%	Waiting: Average duration before answer	Waiting: <=2s	Waiting: 2s<x<=8s	Waiting: >8s	Communication: Average duration	Communication: <=2s	Communication: 2s<x<=6s	Communication: >6s	Average post call processing duration
Ident. of filter: Emergency												
Monday, October 06, 2003												
11:30	1	1	100%	0:00:29	0	0	1	0:02:16	0	0	1	0:00:00
Summary Monday, October 06, 2003												
	1	1	100%	0:00:29	0	0	1	0:02:16	0	0	1	0:00:00
Tuesday, October 07, 2003												
12:45	8	6	75%	0:00:11	0	3	3	0:00:36	0	0	6	0:00:00
Summary Tuesday, October 07, 2003												
	8	6	75%	0:00:11	0	3	3	0:00:36	0	0	6	0:00:00
Thursday, October 09, 2003												
11:30	2	2	100%	0:00:12	0	1	1	0:01:08	0	0	2	0:00:00

Thursday, October 09, 2003 — Page 1-3

Figure 12.13 EXAMPLE OF "ANSWERED INBOUND CALLS" REPORT - SELECTION BY FILTER (1/3)

M7480 report — Inbound answered v

				Waiting				Communication				
Beginning	Received	Answered	%	Average duration before answer	<=2s	2s<x<=8s	>8s	Average duration	<=2s	2s<x<=6s	>6s	Average post processing du
Summary Thursday, October 09, 2003												
	2	2	100%	0:00:12	0	1	1	0:01:08	0	0	2	0:00:00
Summary of Emergency												
	11	9	82%	0:00:14	0	4	5	0:00:54	0	0	9	0:00:00
Ident. of filter: Urgence												
Monday, October 06, 2003												
11:30	2	2	100%	0:00:20	0	0	2	0:02:28	0	0	2	0:00:00
Summary Monday, October 06, 2003												
	2	2	100%	0:00:20	0	0	2	0:02:28	0	0	2	0:00:00
Tuesday, October 07, 2003												
12:45	4	4	100%	0:00:04	0	4	0	0:00:48	0	0	4	0:00:00
Summary Tuesday, October 07, 2003												
	4	4	100%	0:00:04	0	4	0	0:00:48	0	0	4	0:00:00
Thursday, October 09, 2003												
11:30	1	1	100%	0:00:07	0	1	0	0:01:10	0	0	1	0:00:00
Summary Thursday, October 09, 2003												
	1	1	100%	0:00:07	0	1	0	0:01:10	0	0	1	0:00:00

Thursday, October 09, 2003

FIGURE 12.13 EXAMPLE OF "ANSWERED INBOUND CALLS" REPORT - SELECTION BY FILTER (2/3)

M7480 report — Inbound answered voice calls

Beginning	Received	Answered	%	Waiting: Average duration before answer	Waiting: <=2s	Waiting: 2s<x<=8s	Waiting: >8s	Communication: Average duration	Communication: <=2s	Communication: 2s<x<=6s	Communication: >6s	Average post call processing duration
Summary of Urgence												
	7	7	100%	0:00:09	0	5	2	0:01:20	0	0	7	0:00:00

Thursday, October 09, 2003 — Page 3-3

FIGURE 12.13 EXAMPLE OF "ANSWERED INBOUND CALLS" REPORT - SELECTION BY FILTER (3/3)

12.2.3.8 PREDEFINED REPORT "OUTBOUND CALLS"

12.2.3.8.1 General principle

The end of a call belonging to an outgoing service results in the backing up of some statistical data. More particularly, a recording is backed up (or updated) in the consolidated "OutboundCallsPerServicePer*" table.

The purpose of the "Outbound calls" report is to display a summary for each level of precision (precision per quarter of an hour, half hour, hour, day, week and month) for the different calls made in the selected incoming service.

12.2.3.8.2 Content of the report

This report gives the consolidated statistics of outgoing calls for a given period. The report displays the calls belonging to a particular Service.

This report contains, for each period of time (depending on the accuracy : per quarter hour, half hour, hour, day,

week, or month) during which calls were made :

- The start date or time for this period of time
- The total number of outgoing call attempts
- The number of successful calls
- The average presentation time for successful calls
- The maximum presentation time for successful calls
- The average duration of successful calls
- The maximum duration of successful calls
- The average post-call processing time for successful calls
- The maximum post-call processing time for successful calls
- The number of unsuccessful call attempts
- The average presentation time for unsuccessful call attempts
- The maximum presentation time for unsuccessful call attempts
- The average duration of unsuccessful call attempts
- The maximum duration of unsuccessful call attempts
- The average post-call processing time for unsuccessful call attempts
- The maximum post-call processing time for unsuccessful call attempts
- The number of uncompleted calls
- The average presentation time for uncompleted calls
- The maximum presentation time for uncompleted calls
- The average duration of uncompleted calls
- The maximum duration of uncompleted calls
- The average post-call processing time for uncompleted calls
- The maximum post-call processing time for uncompleted calls

Depending on the precision level selected, a daily summary (precision per quarter hour, half hour, or hour), monthly summary (precision per day or week) or annual summary (precision per month) is given, and in all cases a general summary is given.

The data on which the report is based is contained in the 'OutboundVoiceCallsPerService*' table in the 'LongTermStatistics.mdb' database.

12.2.3.8.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the OutboundCallsPerServicePer *" table (see Section 12.3.3.17).

Tableau 12.22

Labels	Formula	
	Average	Maximum
Department	ServiceID	
Begin	BeginTime	
Total	TotalNbrAttempts	
Attempts completed successfully		
Number	NbrSuccessEndAttempts	
Overview	TotalSuccessEndPresentationDuration / NbrSuccessEndAttempts	MaxSuccessEndPresentationDuration
Communication	TotalSuccessEndCommunicationDuration / NbrSuccessEndAttempts	MaxSuccessEndCommunicationDuration
PCP	TotalSuccessEndPCPDuration / NbrSuccessEndAttempts	MaxSuccessEndPCPDuration
Attempts completed unsuccessfully		
Number	NbrFailedEndAttempts	
Overview	TotalFailedEndPresentationDuration / NbrFailedEndAttempts	MaxFailedEndPresentationDuration
Communication	TotalFailedEndCommunicationDuration / NbrFailedEndAttempts	MaxFailedEndCommunicationDuration
PCP	TotalFailedEndPCPDuration / NbrFailedEndAttempts	MaxFailedEndPCPDuration
Uncompleted calls		
Number	NbrPendingEndAttempts	
Overview	TotalPendingEndPresentationDuration / NbrPendingEndAttempts	MaxPendingEndPresentationDuration
Communication	TotalPendingEndCommunicationDuration / NbrPendingEndAttempts	MaxPendingEndCommunicationDuration
PCP	TotalPendingEndPCPDuration / NbrPendingEndAttempts	MaxPendingEndPCPDuration

Summary

The labels that appear in the summary group together the data available in the detailed section in the corresponding precision level.

Tableau 12.23

Labels	Formula	
	Average	Maximum

Tableau 12.23

Total	Sum(TotalNbrAttempts)	
Attempts completed successfully		
Number	Sum(NbrSuccessEndAttempts)	
Overview	Sum(TotalSuccessEndPresentationDuration) / Sum(NbrSuccessEndAttempts)	Max(MaxSuccessEndPresentationDuration)
Communication	Sum(TotalSuccessEndCommunicationDuration) / Sum(NbrSuccessEndAttempts)	Max(MaxSuccessEndCommunicationDuration)
PCP	Sum(TotalSuccessEndPCPDuration) / Sum(NbrSuccessEndAttempts)	Max(MaxSuccessEndPCPDuration)
Attempts completed unsuccessfully		
Number	Sum(NbrFailedEndAttempts)	
Overview	Sum(TotalFailedEndPresentationDuration) / Sum(NbrFailedEndAttempts)	Max(MaxFailedEndPresentationDuration)
Communication	Sum(TotalFailedEndCommunicationDuration) / Sum(NbrFailedEndAttempts)	Max(MaxFailedEndCommunicationDuration)
PCP	Sum(TotalFailedEndPCPDuration) / Sum(NbrFailedEndAttempts)	Max(MaxFailedEndPCPDuration)
Uncompleted calls		
Number	Sum(NbrPendingCallsAttempts)	
Overview	Sum(TotalPendingCallsPresentationDuration) / Sum(NbrPendingCallsAttempts)	Max(MaxPendingCallsPresentationDuration)
Communication	Sum(TotalPendingCallsCommunicationDuration) / Sum(NbrPendingCallsAttempts)	Max(MaxPendingCallsCommunicationDuration)
PCP	Sum(TotalPendingCallsPCPDuration) / Sum(NbrPendingCallsAttempts)	Max(MaxPendingCallsPCPDuration)

Example report Outbound voice calls (precision per quarter hour):

Outbound voice calls

Period: from 20-nov-02 to 27-nov-02
Time: from 07:00 to 18:59
Service : HelpDeskOut
Precision per quater hour

M7480 report — Outbound Calls

		Successful attempts				Unsuccessful attempts				Unfinished calls			
Start	Total	Number	Presentation	Communication	PCP	Number	Presentation	Communication	PCP	Number	Presentation	Communication	PCP
Wednesday 20 november 2002													
10:45	10	6				0				4			
		Average:	0:00:05	0:00:13	0:00:00		0:00:00	0:00:00	0:00:00		0:00:03	0:00:04	0:00:07
		Maximum:	0:00:22	0:00:38	0:00:00		0:00:00	0:00:00	0:00:00		0:00:11	0:00:14	0:00:27
11:00	5	3				0				2			
		Average:	0:01:03	0:00:49	0:13:47		0:00:00	0:00:00	0:00:00		0:00:14	0:00:14	0:00:12
		Maximum:	0:02:08	0:01:11	0:40:07		0:00:00	0:00:00	0:00:00		0:00:28	0:00:27	0:00:24
11:30	1	1				0				0			
		Average:	0:00:04	0:00:16	0:00:00		0:00:00	0:00:00	0:00:00		0:00:00	0:00:00	0:00:00
		Maximum:	0:00:04	0:00:16	0:00:00		0:00:00	0:00:00	0:00:00		0:00:00	0:00:00	0:00:00
Summary wednesday 20 november 2002													
	16	10				0				6			
		Average:	0:00:22	0:00:24	0:04:08		0:00:00	0:00:00	0:00:00		0:00:06	0:00:07	0:00:08
		Maximum:	0:02:08	0:01:11	0:40:07		0:00:00	0:00:00	0:00:00		0:00:28	0:00:27	0:00:27

Figure 12.14 EXAMPLE OF REPORT: "OUTGOING CALLS"

12.2.3.9 PREDEFINED REPORT "OUTBOUND CALLS (DETAILS)"

12.2.3.9.1 General principle

The end of a call belonging to an outgoing service results in the backing up of some statistical data. More particularly, a recording is backed up in the "OutboundVoiceCalls" table.

The purpose of the “Outbound calls (Details)” report is to display these different recordings for the selected service.

12.2.3.9.2 Content of the report

This report gives the detailed statistics on outgoing calls for a given period. These calls belong to a predefined Service.

This report shows the details of each outbound call attempt:

- The call initiation time
- The ID of the agent who made the call
- Call presentation time (the difference between CallPresentationTime and the time the physical call is made (CallTime).
- duration of the call at the agent station (including call initiation, conversation and hold, but excluding "PCP"

and offline scripting

- not associated with a physical call),
- the duration of the post-call-processing (PCP),
- result of the call,
- The final status of the call
- The number of remaining attempts
- The number of remaining connections,
- The DNIS called by the caller.

The calls are grouped by day. Average and maximum values are computed for each duration.

The data on which the report is based is contained in the 'OutboundVoiceCalls' table in the 'LongTermStatistics.mdb' database.

12.2.3.9.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the "OutboundVoiceCalls" table (see Section 12.3.3.2).

Tableau 12.24

Labels	Formula	
Department	ServiceID	
Time	CallPresentationTime	
Agent	AgentId	
Call durations		
Overview	CallPresentationDuration	
Communication	CallCommunicationDuration	
PCP	CallPCPDuration	
Call result	CallResult	
Final status	CallDisconnectionStatus	
Left retries	CallLeftRetries	
Left connections	CallLeftConnects	
DNIS	DNIS	

Summary

The labels that appear in the summary group together the data available in the corresponding detailed section.

The number of calls is also available in the summary header.

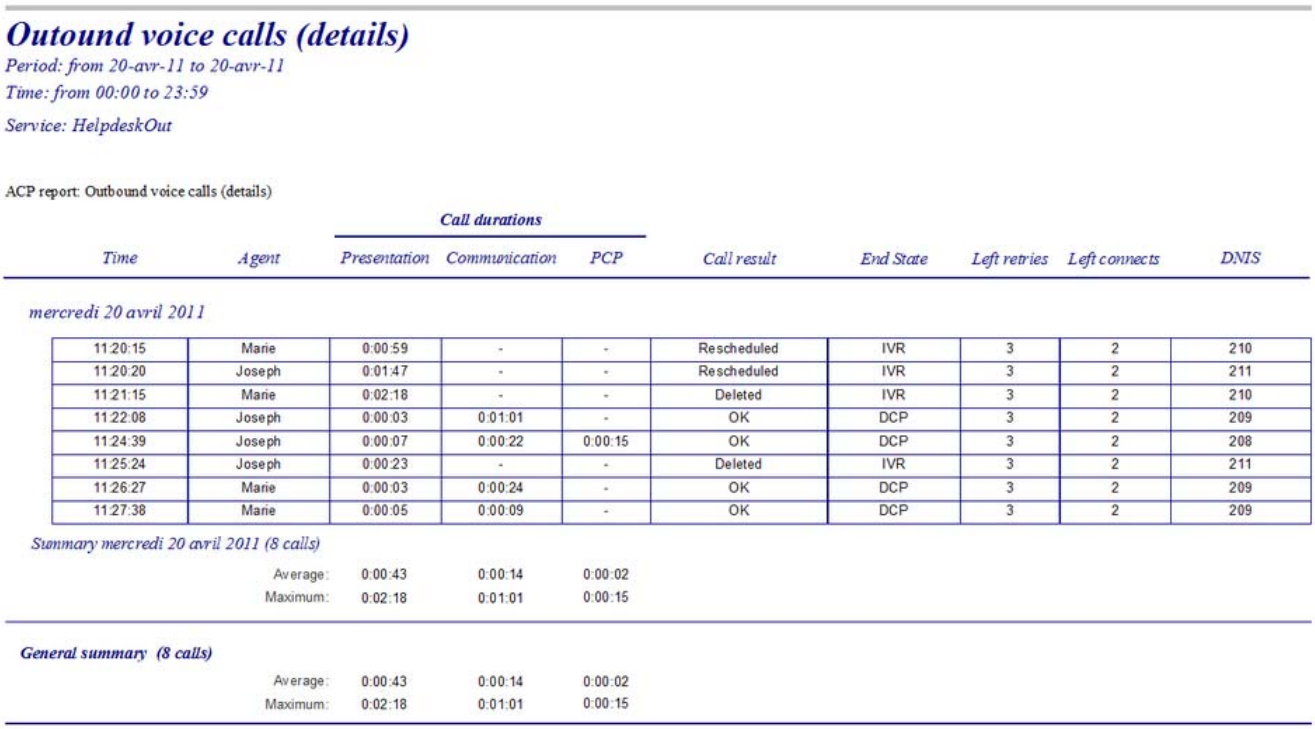
Tableau 12.25

Labels	Formula	
	Average	Maximum
Overview	Avg(CallPresentationDuration)	Max(CallPresentationDuration)
Communication	Avg(CallCommunicationDuration)	Max(CallCommunicationDuration)
PCP	Avg(CallPCPDuration)	Max(CallPCPDuration)

Tableau 12.25

x calls	Count* (of elements in the section)

Example of "Outbound calls report (details)":



Outound voice calls (details)

Period: from 20-avr-11 to 20-avr-11
Time: from 00:00 to 23:59
Service: HelpdeskOut

ACP report: Outbound voice calls (details)

		Call durations							
Time	Agent	Presentation	Communication	PCP	Call result	End State	Left retries	Left connects	DNIS
mercredi 20 avril 2011									
11:20:15	Marie	0:00:59	-	-	Rescheduled	IVR	3	2	210
11:20:20	Joseph	0:01:47	-	-	Rescheduled	IVR	3	2	211
11:21:15	Marie	0:02:18	-	-	Deleted	IVR	3	2	210
11:22:08	Joseph	0:00:03	0:01:01	-	OK	DCP	3	2	209
11:24:39	Joseph	0:00:07	0:00:22	0:00:15	OK	DCP	3	2	208
11:25:24	Joseph	0:00:23	-	-	Deleted	IVR	3	2	211
11:26:27	Marie	0:00:03	0:00:24	-	OK	DCP	3	2	209
11:27:38	Marie	0:00:05	0:00:09	-	OK	DCP	3	2	209
Summary mercredi 20 avril 2011 (8 calls)									
	Average:	0:00:43	0:00:14	0:00:02					
	Maximum:	0:02:18	0:01:01	0:00:15					
General summary (8 calls)									
	Average:	0:00:43	0:00:14	0:00:02					
	Maximum:	0:02:18	0:01:01	0:00:15					

Figure 12.15 EXAMPLE OF REPORT: "OUTGOING CALLS (DETAILS)"

12.2.3.10 PREDEFINED REPORT "INBOUND E-MAILS"

12.2.3.10.1 General principle

The end of a call belonging to an outgoing service results in the backing up of some statistical data. More particularly, a recording is backed up in the "OutboundVoiceCalls" table.

The purpose of the “Outbound calls (Details)” report is to display these different recordings for the selected service.

12.2.3.10.2 Content of the report

This report gives the consolidated statistics for inbound e-mails for a given period. The report displays the e-mails belonging to a particular Service and the filtered data (see Sheet U-443) of this Service can also be displayed.

It is possible to select several filters, and there will be no general summary displayed at the end of the report.

This report contains, for each period of time (depending on the accuracy : per quarter hour, half hour, hour, day, week, or month) during which calls were made:

- The start date or time for this period of time
- number of e-mails received over this period,
- number of e-mails processed by an agent,
- percentage of e-mails processed by an agent in relation to the number of e-mails received,
- average e-mail processing time by the system,
- maximum e-mail processing time by the system.

Depending on the precision selected, a daily summary (precision per quarter hour, half hour, or hour), monthly summary (precision per day or week) or annual summary (precision per month) is given, and in all cases a general summary is given for the service (if no filter is selected) or per displayed filter (if several filters are selected).

The data on which the report is based is contained in the 'InboundCallsPerServicePer*' tables in the 'LongTermStatistics.mdb' database.

12.2.3.10.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the "InboundCallsPerServicePer*" table (see Section 12.3.3.15).

Tableau 12.26

Labels	Formula
Department	ServiceID
Filter	FilterID
Begin	BeginTime
Received	NbrEmails
Processed by agent	
Number	NbrEmailsHandledByAgent
%	(NbrEmailsHandledByAgent / NbrEmails) * 100
Total processing time	
Average	TotalEmailHandlingDuration / NbrEmails
Maximum	MaxEmailHandlingDuration

Summary

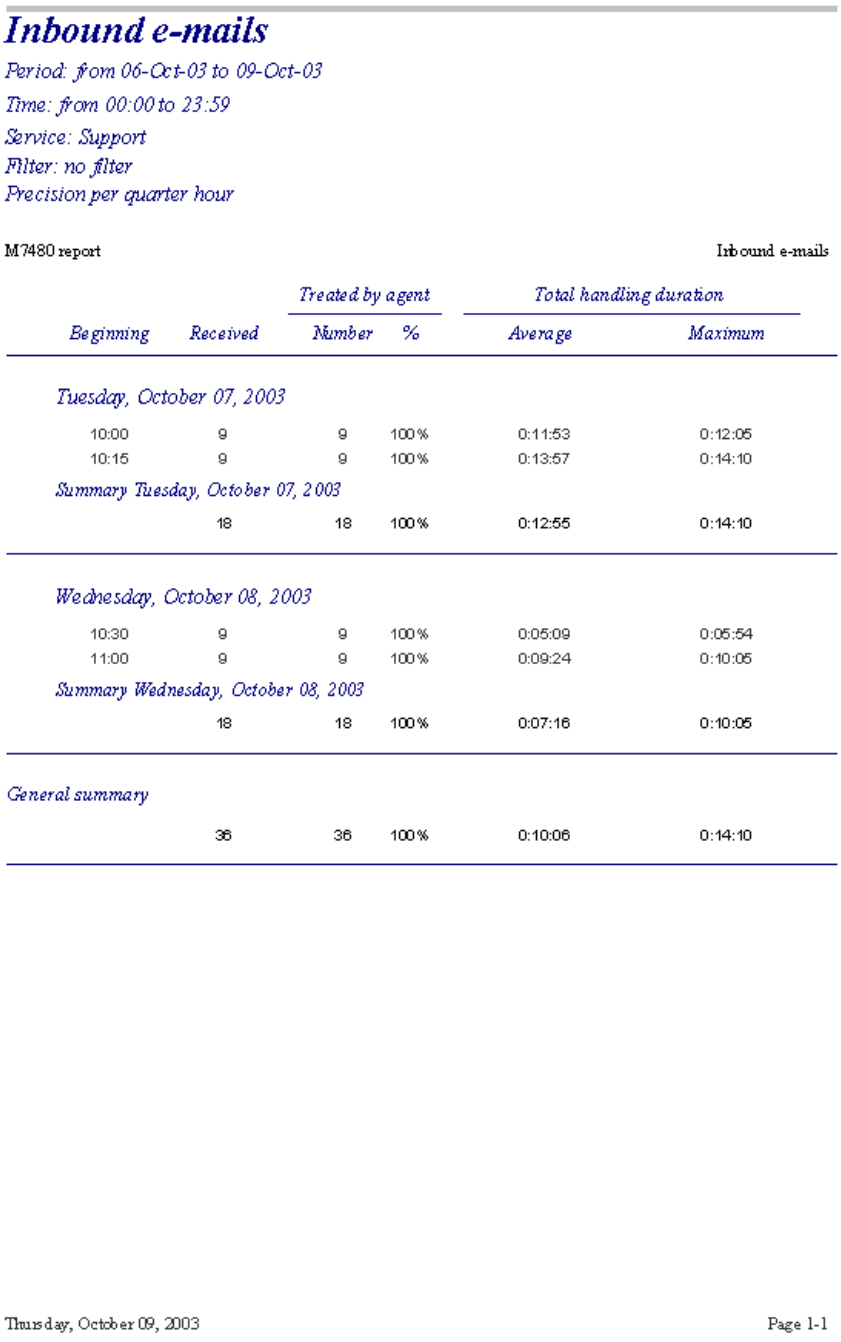
The labels that appear in the summary group together the data available in the detailed section in the corresponding precision level.

Tableau 12.27

Labels	Formula
Received	Sum(NbrEmails)
Processed by agent	
Number	Sum(NbrEmailsHandledByAgent)
%	(Sum(NbrEmailsHandledByAgent) / Sum(NbrEmails)) * 100
Total processing time	
Average	Sum(TotalEmailHandlingDuration) / Sum(NbrEmails)
Maximum	Max(MaxEmailHandlingDuration)

Example of "Inbound e-mails report":

Selection by service



Inbound e-mails

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: Support
Filter: no filter
Precision per quarter hour

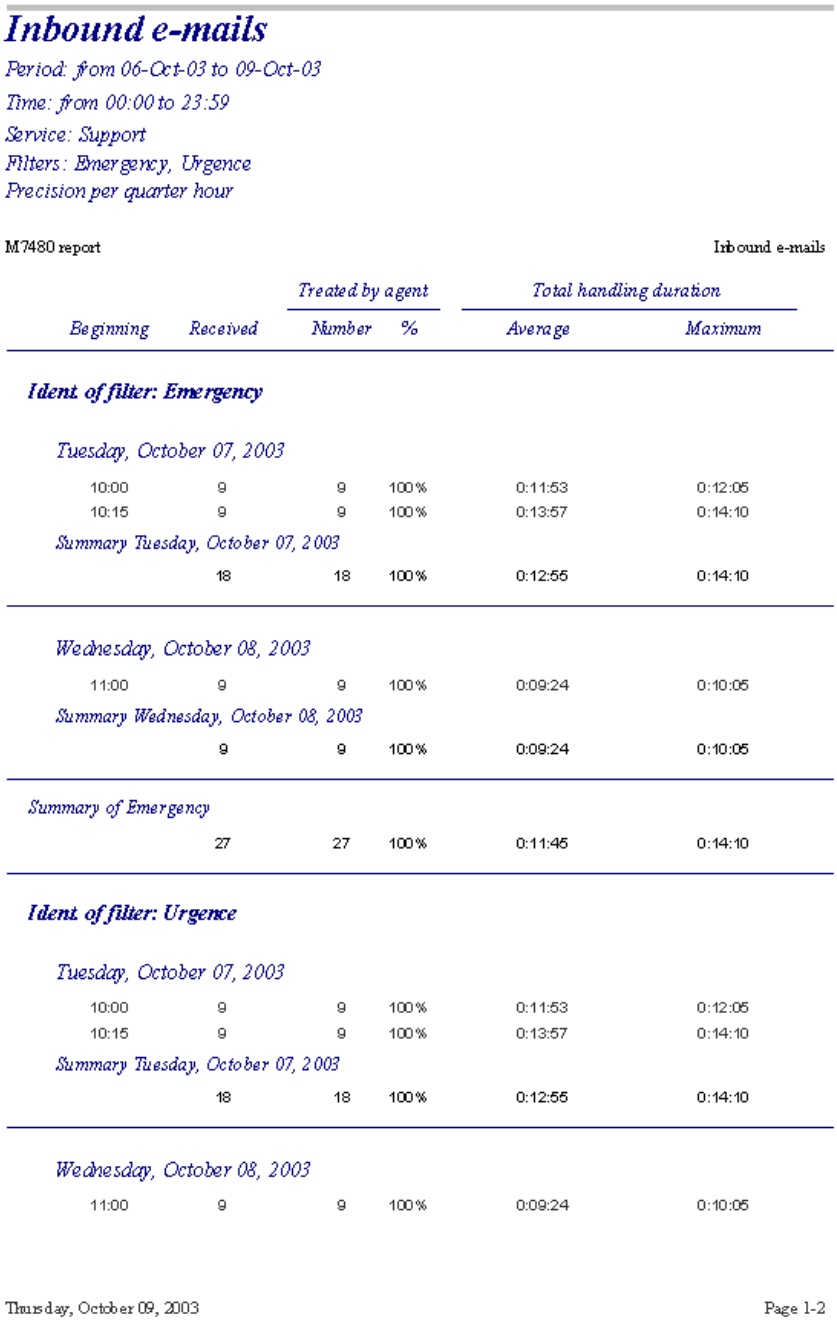
M7480 report — Inbound e-mails

Beginning	Received	Treated by agent: Number	Treated by agent: %	Total handling duration: Average	Total handling duration: Maximum
Tuesday, October 07, 2003					
10:00	9	9	100%	0:11:53	0:12:05
10:15	9	9	100%	0:13:57	0:14:10
Summary Tuesday, October 07, 2003					
	18	18	100%	0:12:55	0:14:10
Wednesday, October 08, 2003					
10:30	9	9	100%	0:05:09	0:05:54
11:00	9	9	100%	0:09:24	0:10:05
Summary Wednesday, October 08, 2003					
	18	18	100%	0:07:16	0:10:05
General summary					
	36	36	100%	0:10:06	0:14:10

Thursday, October 09, 2003 — Page 1-1

Figure 12.16 EXAMPLE OF "INBOUND E-MAILS" REPORT – SELECTION BY SERVICE

Selection by filter



Inbound e-mails

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: Support
Filters: Emergency, Urgence
Precision per quarter hour

M7480 report — Inbound e-mails

Beginning	Received	Treated by agent: Number	Treated by agent: %	Total handling duration: Average	Total handling duration: Maximum
Ident. of filter: Emergency					
Tuesday, October 07, 2003					
10:00	9	9	100%	0:11:53	0:12:05
10:15	9	9	100%	0:13:57	0:14:10
Summary Tuesday, October 07, 2003					
	18	18	100%	0:12:55	0:14:10
Wednesday, October 08, 2003					
11:00	9	9	100%	0:09:24	0:10:05
Summary Wednesday, October 08, 2003					
	9	9	100%	0:09:24	0:10:05
Summary of Emergency					
	27	27	100%	0:11:45	0:14:10
Ident. of filter: Urgence					
Tuesday, October 07, 2003					
10:00	9	9	100%	0:11:53	0:12:05
10:15	9	9	100%	0:13:57	0:14:10
Summary Tuesday, October 07, 2003					
	18	18	100%	0:12:55	0:14:10
Wednesday, October 08, 2003					
11:00	9	9	100%	0:09:24	0:10:05

Thursday, October 09, 2003 — Page 1-2

Figure 12.17 EXAMPLE OF "INBOUND E-MAILS" REPORT - SELECTION BY FILTER (1/2)

M7480 report — Inbound e-mails

Beginning	Received	Treated by agent: Number	Treated by agent: %	Total handling duration: Average	Total handling duration: Maximum
Summary Wednesday, October 08, 2003					
	9	9	100 %	0:09:24	0:10:05
Summary of Urgence					
	27	27	100 %	0:11:45	0:14:10

Thursday, October 09, 2003 — Page 2-2

FIGURE 12.17 EXAMPLE OF "INBOUND E-MAILS" REPORT - SELECTION BY FILTER (2/2)

12.2.3.11 PREDEFINED "INBOUND E-MAILS (DETAILS)" REPORT

12.2.3.11.1 General principle

The end of the management of an e-mail belonging to an incoming service results in the backing up of some statistical data. More particularly, a recording is backed up in the "InboundEmails" table.

The purpose of the “Inbound Emails (Details)” report is to display these different recordings for the service and for each selected filter.

12.2.3.11.2 Content of the report

This report gives the detailed statistics for inbound e-mails for a given period. These e-mails are for a particular service and the data filtered (see Sheet U-443) for this Service may be displayed.

It is possible to select several filters, and there will be no general summary displayed at the end of the report.

The report contains :

- The e-mail arrival time in the system. It corresponds to the time when the mail started being processed by the M5000 CC Server.
- type of e-mail (e-mail or fax),
- arrival time of the e-mail in the Inbox (in mail server),

Note: This time is only established by the mail server. The mail server clock may differ from that of the M5000 CC Server.

- total processing time of the e-mail by the system (Server, Pool and Agent(s)),

Note: This duration does not include the possible wait time in the mail server inbox before the mail is processed by the M5000 CC Server.

- identifier of the latest agent who handled the e-mail (if distributed to an agent),
- duration of the processing of the e-mail by the last agent (= duration of the user status). The value “-” is displayed if no agent handled the e-mail.

E-mails are grouped by filter (if several filters are selected) and by day. Average and maximum values are computed for each group.

The data on which the report is based is contained in the "InboundEmails" table in the "LongTermStatistics.mdb" database.

12.2.3.11.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the "InboundEmails" table (see Section 12.3.3.3).

Tableau 12.28

Labels	Formula
Department	ServiceID
Filter	FilterID
Time	EmailHandlingBeginTime
E-mail	If (EmailMessageType = 1)
FAX	If (EmailMessageType = 2)
Reception time	EmailTimeReceived
Total duration	EmailHandlingDuration
Agent processing	
Agent	AgentId
Duration	CallAgentDuration

Summary

The labels that appear in the summary group together the data available in the corresponding detailed section. The number of e-mail is also available in the summary header.

Tableau 12.29

Labels	Formula	
	Average	Maximum
E-mail	Count* (of elements in the section)	
FAX	Count* (of elements in the section)	
Total duration	Avg(EmailHandlingDuration)	Max(EmailHandlingDuration)
Agent processing		
Duration	Avg(CallAgentDuration)	Max(CallAgentDuration)

Example of "Inbound e-mails (details)" report:

Selection by service

Inbound e-mails (details)

Period: from 06-Oct-03 to 09-Oct-03

Time: from 00:00 to 23:59

Service: Support

Filter: no filter

M7480 report — Inbound e-mails (details)

					Agent treatment	
Time	E-mail	Fax	Date received	Total duration	Agent	Duration
Tuesday, October 07, 2003						
10:08:56	X		04/09/2003 10:33:48	0:11:45	Joseph	0:11:17
10:08:57	X		04/09/2003 10:34:30	0:12:05	Jean	0:11:59
10:08:57	X		04/09/2003 10:34:47	0:12:04	Jean	0:11:55
10:08:57	X		04/09/2003 10:35:13	0:11:47	Joseph	0:11:30
10:08:58	X		04/09/2003 10:35:24	0:12:00	Jean	0:11:50
10:08:58	X		04/09/2003 10:35:23	0:11:49	Joseph	0:11:35
10:08:58	X		04/09/2003 10:35:30	0:11:57	Marie	0:11:38
10:08:59	X		04/09/2003 10:54:02	0:11:53	Marie	0:11:33
10:08:59	X		04/09/2003 10:48:09	0:11:41	Joseph	0:00:06
10:21:20	X		04/09/2003 10:33:48	0:13:49	Marie	0:13:18
10:21:20	X		04/09/2003 10:34:47	0:14:10	Jean	0:14:04
10:21:20	X		04/09/2003 10:34:30	0:14:00	Joseph	0:13:40
10:21:21	X		04/09/2003 10:35:23	0:13:58	Joseph	0:13:35
10:21:21	X		04/09/2003 10:35:24	0:14:02	Joseph	0:13:50
10:21:21	X		04/09/2003 10:35:13	0:13:49	Marie	0:13:40
10:21:22	X		04/09/2003 10:48:09	0:14:00	Joseph	0:13:46
10:21:22	X		04/09/2003 10:35:30	0:13:59	Joseph	0:13:43
10:21:22	X		04/09/2003 10:54:02	0:13:44	Marie	0:00:03
Summary Tuesday, October 07, 2003						
Total:	18	0		Average: 0:12:55		Average: 0:11:17
				Maximum: 0:14:10		Maximum: 0:14:04
Wednesday, October 08, 2003						
10:30:38	X		04/09/2003 10:34:47	0:05:54	Joseph	0:05:20
10:30:38	X		04/09/2003 10:34:30	0:05:29	Marie	0:05:05
10:30:38	X		04/09/2003 10:33:48	0:04:59	Jean	0:00:02
10:30:39	X		04/09/2003 10:35:23	0:05:06	Joseph	0:04:27
10:30:39	X		04/09/2003 10:35:13	0:05:26	Marie	0:05:02
10:30:39	X		04/09/2003 10:35:24	0:05:34	Marie	0:05:09
10:30:40	X		04/09/2003 10:54:02	0:05:29	Marie	0:03:59
10:30:40	X		04/09/2003 10:48:09	0:03:16	Jean	0:02:29

Thursday, October 09, 2003 — Page 1-2

Figure 12.18 EXAMPLE OF "INBOUND E-MAILS (DETAILS)" REPORT - SELECTION BY SERVICE (1/2)

M7480 report — Inbound e-mails (details)

Time	E-mail	Fax	Date received	Total duration	Agent treatment: Agent	Agent treatment: Duration
10:30:40	X		04/09/2003 10:35:30	0:05:07	Joseph	0:04:33
11:00:18	X		04/09/2003 10:33:48	0:09:18	Jean	0:00:49
11:00:18	X		04/09/2003 10:34:30	0:09:25	Marie	0:01:23
11:00:19	X		04/09/2003 10:34:47	0:09:07	Joseph	0:01:33
11:00:19	X		04/09/2003 10:35:13	0:09:11	Joseph	0:01:23
11:00:20	X		04/09/2003 10:35:30	0:10:05	Jean	0:01:44
11:00:20	X		04/09/2003 10:35:23	0:09:02	Joseph	0:01:24
11:00:20	X		04/09/2003 10:35:24	0:09:00	Joseph	0:01:20
11:00:21	X		04/09/2003 10:48:09	0:09:26	Marie	0:01:28
11:00:21	X		04/09/2003 10:54:02	0:10:03	Jean	0:01:42

Summary Wednesday, October 08, 2003

Total:	18	0	Average:	0:07:16	Average:	0:02:43
			Maximum:	0:10:05	Maximum:	0:05:20

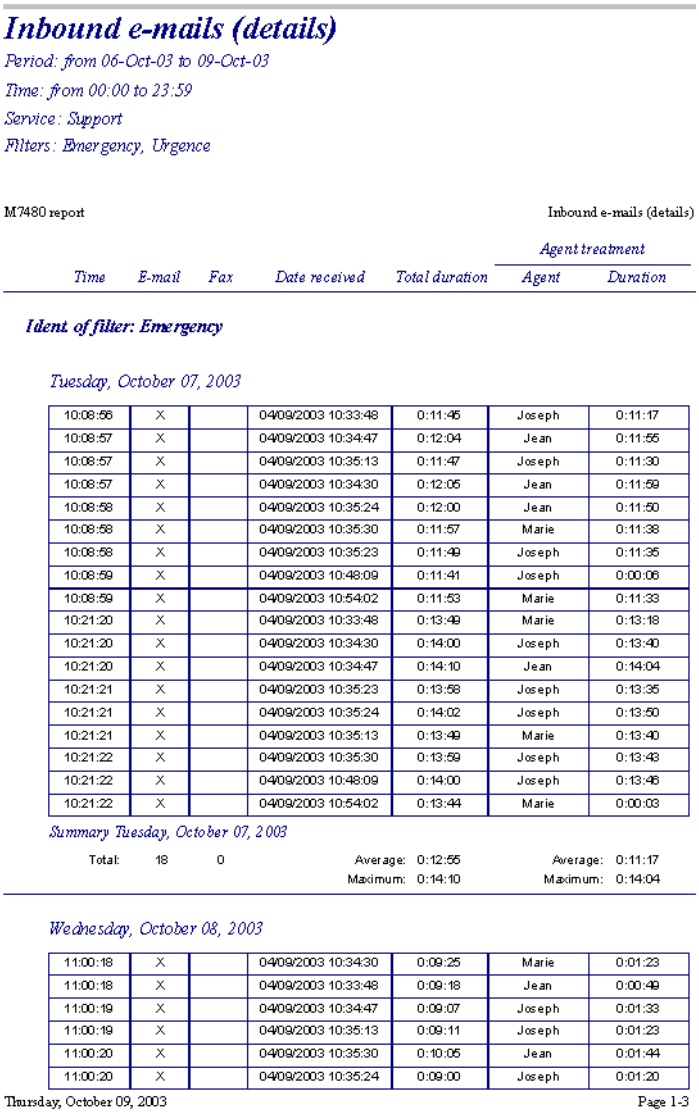
General summary

Total:	36	0	Average:	0:10:06	Average:	0:07:00
			Maximum:	0:14:10	Maximum:	0:14:04

Thursday, October 09, 2003 — Page 2-2

FIGURE 12.18 EXAMPLE OF "INBOUND E-MAILS (DETAILS)" REPORT - SELECTION BY SERVICE (2/2)

Selection by filter



Inbound e-mails (details)

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: Support
Filters: Emergency, Urgence

M7480 report — Inbound e-mails (details)

					Agent treatment	
Time	E-mail	Fax	Date received	Total duration	Agent	Duration
Ident. of filter: Emergency						
Tuesday, October 07, 2003						
10:08:56	X		04/09/2003 10:33:48	0:11:45	Joseph	0:11:17
10:08:57	X		04/09/2003 10:34:47	0:12:04	Jean	0:11:55
10:08:57	X		04/09/2003 10:35:13	0:11:47	Joseph	0:11:30
10:08:57	X		04/09/2003 10:34:30	0:12:05	Jean	0:11:59
10:08:58	X		04/09/2003 10:35:24	0:12:00	Jean	0:11:50
10:08:58	X		04/09/2003 10:35:30	0:11:57	Marie	0:11:38
10:08:58	X		04/09/2003 10:35:23	0:11:49	Joseph	0:11:35
10:08:59	X		04/09/2003 10:48:09	0:11:41	Joseph	0:00:06
10:08:59	X		04/09/2003 10:54:02	0:11:53	Marie	0:11:33
10:21:20	X		04/09/2003 10:33:48	0:13:49	Marie	0:13:18
10:21:20	X		04/09/2003 10:34:30	0:14:00	Joseph	0:13:40
10:21:20	X		04/09/2003 10:34:47	0:14:10	Jean	0:14:04
10:21:21	X		04/09/2003 10:35:23	0:13:58	Joseph	0:13:35
10:21:21	X		04/09/2003 10:35:24	0:14:02	Joseph	0:13:50
10:21:21	X		04/09/2003 10:35:13	0:13:49	Marie	0:13:40
10:21:22	X		04/09/2003 10:35:30	0:13:59	Joseph	0:13:43
10:21:22	X		04/09/2003 10:48:09	0:14:00	Joseph	0:13:46
10:21:22	X		04/09/2003 10:54:02	0:13:44	Marie	0:00:03
Summary Tuesday, October 07, 2003						
Total:	18	0		Average: 0:12:55 Maximum: 0:14:10		Average: 0:11:17 Maximum: 0:14:04
Wednesday, October 08, 2003						
11:00:18	X		04/09/2003 10:34:30	0:09:25	Marie	0:01:23
11:00:18	X		04/09/2003 10:33:48	0:09:18	Jean	0:00:49
11:00:19	X		04/09/2003 10:34:47	0:09:07	Joseph	0:01:33
11:00:19	X		04/09/2003 10:35:13	0:09:11	Joseph	0:01:23
11:00:20	X		04/09/2003 10:35:30	0:10:05	Jean	0:01:44
11:00:20	X		04/09/2003 10:35:24	0:09:00	Joseph	0:01:20

Thursday, October 09, 2003 — Page 1-3

Figure 12.19 EXAMPLE OF "INBOUND E-MAILS (DETAILS)" REPORT - SELECTION BY FILTER (1/3)

M7480 report — Inbound e-mails (details)

	Time	E-mail	Fax	Date received	Total duration	Agent treatment: Agent	Agent treatment: Duration
	11:00:20	X		04/09/2003 10:35:23	0:09:02	Joseph	0:01:24
	11:00:21	X		04/09/2003 10:54:02	0:10:03	Jean	0:01:42
	11:00:21	X		04/09/2003 10:48:09	0:09:26	Marie	0:01:28

Summary Wednesday, October 08, 2003

Total:	9	0	Average:	0:09:24	Average:	0:01:25
			Maximum:	0:10:05	Maximum:	0:01:44

Summary of Emergency

Total:	9	0	Average:	0:11:45	Average:	0:08:00
			Maximum:	0:14:10	Maximum:	0:14:04

Ident. of filter: Urgence

Tuesday, October 07, 2003

10:08:56	X		04/09/2003 10:33:48	0:11:45	Joseph	0:11:17
10:08:57	X		04/09/2003 10:34:47	0:12:04	Jean	0:11:55
10:08:57	X		04/09/2003 10:35:13	0:11:47	Joseph	0:11:30
10:08:57	X		04/09/2003 10:34:30	0:12:05	Jean	0:11:59
10:08:58	X		04/09/2003 10:35:30	0:11:57	Marie	0:11:38
10:08:58	X		04/09/2003 10:35:23	0:11:49	Joseph	0:11:35
10:08:58	X		04/09/2003 10:35:24	0:12:00	Jean	0:11:50
10:08:59	X		04/09/2003 10:48:09	0:11:41	Joseph	0:00:06
10:08:59	X		04/09/2003 10:54:02	0:11:53	Marie	0:11:33
10:21:20	X		04/09/2003 10:33:48	0:13:49	Marie	0:13:18
10:21:20	X		04/09/2003 10:34:30	0:14:00	Joseph	0:13:40
10:21:20	X		04/09/2003 10:34:47	0:14:10	Jean	0:14:04
10:21:21	X		04/09/2003 10:35:24	0:14:02	Joseph	0:13:50
10:21:21	X		04/09/2003 10:35:13	0:13:49	Marie	0:13:40
10:21:21	X		04/09/2003 10:35:23	0:13:58	Joseph	0:13:35
10:21:22	X		04/09/2003 10:35:30	0:13:59	Joseph	0:13:43
10:21:22	X		04/09/2003 10:48:09	0:14:00	Joseph	0:13:46
10:21:22	X		04/09/2003 10:54:02	0:13:44	Marie	0:00:03

Summary Tuesday, October 07, 2003

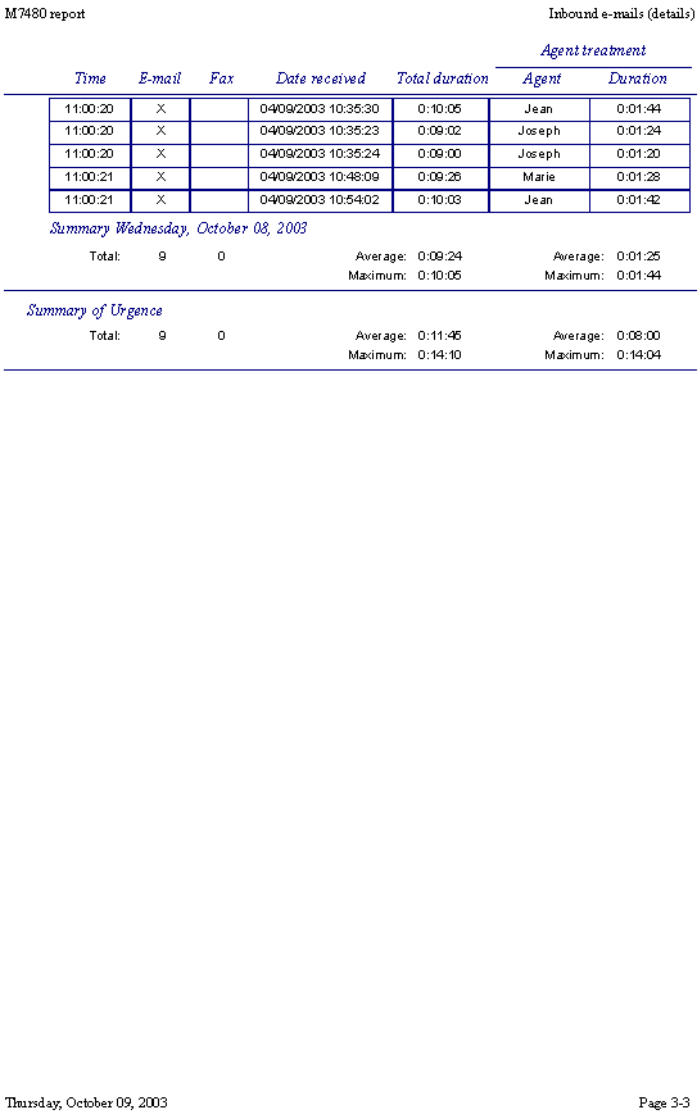
Total:	18	0	Average:	0:12:55	Average:	0:11:17
			Maximum:	0:14:10	Maximum:	0:14:04

Wednesday, October 08, 2003

11:00:18	X		04/09/2003 10:33:48	0:09:18	Jean	0:00:49
11:00:18	X		04/09/2003 10:34:30	0:09:25	Marie	0:01:23
11:00:19	X		04/09/2003 10:34:47	0:09:07	Joseph	0:01:33
11:00:19	X		04/09/2003 10:35:13	0:09:11	Joseph	0:01:23

Thursday, October 09, 2003 — Page 2-3

FIGURE 12.19 EXAMPLE OF "INBOUND E-MAILS (DETAILS)" REPORT - SELECTION BY FILTER (2/3)



M7480 report — Inbound e-mails (details)

Time	E-mail	Fax	Date received	Total duration	Agent treatment: Agent	Agent treatment: Duration
11:00:20	X		04/09/2003 10:35:30	0:10:05	Jean	0:01:44
11:00:20	X		04/09/2003 10:35:23	0:09:02	Joseph	0:01:24
11:00:20	X		04/09/2003 10:35:24	0:09:00	Joseph	0:01:20
11:00:21	X		04/09/2003 10:48:09	0:09:26	Marie	0:01:28
11:00:21	X		04/09/2003 10:54:02	0:10:03	Jean	0:01:42

Summary Wednesday, October 08, 2003

Total:	9	0	Average:	0:09:24	Average:	0:01:25
			Maximum:	0:10:05	Maximum:	0:01:44

Summary of Urgence

Total:	9	0	Average:	0:11:45	Average:	0:08:00
			Maximum:	0:14:10	Maximum:	0:14:04

Thursday, October 09, 2003 — Page 3-3

FIGURE 12.19 EXAMPLE OF "INBOUND E-MAILS (DETAILS)" REPORT - SELECTION BY FILTER (3/3)

12.2.3.12 PREDEFINED REPORT "E-MAILS PER AGENT"

12.2.3.12.1 General principle

The end of the management of an e-mail belonging to an incoming service and distributed to an agent results in the backing up of some statistical data. More particularly, a recording is backed up (or updated) in the consolidated "CallsPerAgentPerServicePer*" table.

The purpose of the "Emails per agent" report is to display a summary for each level of precision (precision per quarter of an hour, half hour, hour, day, week and month) for the different e-mails received by agents in the selected incoming service.

12.2.3.12.2 Content of the report

This report gives the consolidated statistics for inbound e-mails processed by agents for a given period. The report displays the calls belonging to a particular Service an agents chosen.

the list of agents that can be selected consists of the agents defined in the system. This list may also include agents deleted from the system.

Agents can also be selected by selecting the teams to which these agents belong. In this case, only the current assignment of the agents to teams when the report is printed is taken into account: the assignment

and disassignment log is not saved in the statistics.

This selection by team automatically includes agents deleted from the system, but who were part of these teams when they were deleted.

This report contains, for each period of time (depending on the accuracy : per quarter hour, half hour, hour, day, week, or month) during which e-mails were processed by agents:

- The start date or time for this period
- number of e-mails processed by an agent from this period,
- average e-mail processing time from this period,
- maximum e-mail processing time from this period,
- average e-mail processing time from this period,

Depending on the precision chosen, a daily summary (precision per quarter hour, half hour, and hour), monthly (precision per day and week) or annual (precision per month) may be provided. A summary by team (if selection by team is selected), by agent and a full summary are also displayed.

When the selection concerns non-separate teams, an agent belonging to several teams is only considered once in the general report summary. In this case, the values calculated in the general summary are not based on summaries per team, but rather on data per individual agent.

The data on which the report is based is contained in the 'CallsPerAgentPerService' table in the 'LongTermStatistics.mdb' database.

Moreover, team selection uses the data present in the "Teams" table of the "LongTermReporting.mdb" database. This table reflects the current link between the services, agents and teams defined within the system.

12.2.3.12.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the " CallsPerAgentPerServicePer*" table (see Section 12.3.3.18).

Tableau 12.30

Labels	Formula
Department	ServiceID
Agent	AgentId
Begin	BeginTime
Handled	NbrEmailsTreated
Handling duration	
Average	TotalEmailTreatmentDuration / NbrEmailsTreated
Maximum	MaxEmailTreatmentDuration
Total	TotalEmailTreatmentDuration

Summary

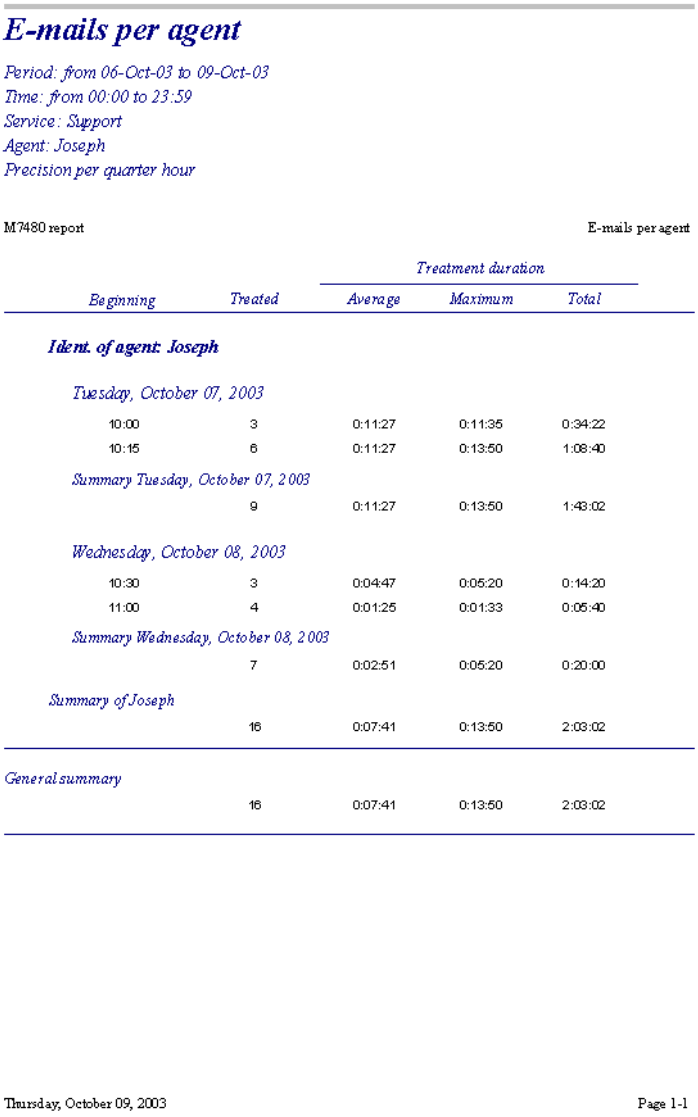
The labels that appear in the summary group together the data available in the detailed section in the corresponding precision level.

Tableau 12.31

Labels	Formula
Handled	Sum(NbrEmailsTreated)
Handling duration	
Average	Sum(TotalEmailTreatmentDuration) / Sum(NbrEmailsTreated)
Maximum	Max(MaxEmailTreatmentDuration)
Total	Sum(TotalEmailTreatmentDuration)

Example of "E-mails per agent" report:

Selection by agent



E-mails per agent

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service : Support
Agent: Joseph
Precision per quarter hour

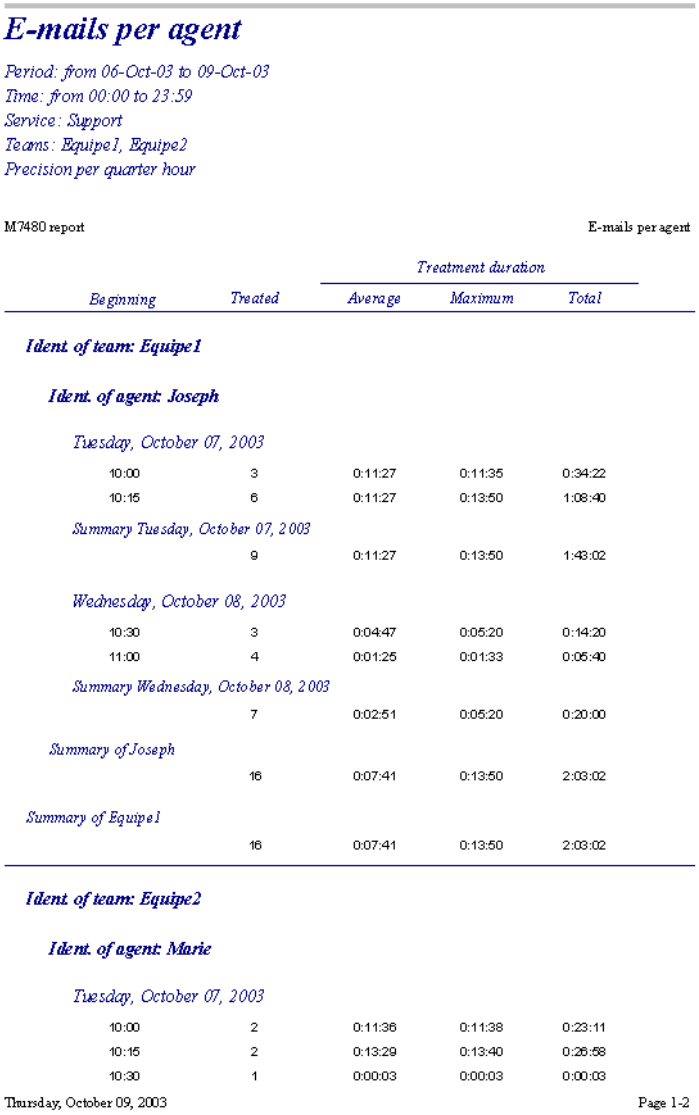
M7480 report — E-mails per agent

Beginning	Treated	Treatment duration: Average	Maximum	Total
Ident. of agent: Joseph				
Tuesday, October 07, 2003				
10:00	3	0:11:27	0:11:35	0:34:22
10:15	6	0:11:27	0:13:50	1:08:40
Summary Tuesday, October 07, 2003				
	9	0:11:27	0:13:50	1:43:02
Wednesday, October 08, 2003				
10:30	3	0:04:47	0:05:20	0:14:20
11:00	4	0:01:25	0:01:33	0:05:40
Summary Wednesday, October 08, 2003				
	7	0:02:51	0:05:20	0:20:00
Summary of Joseph				
	16	0:07:41	0:13:50	2:03:02
General summary				
	16	0:07:41	0:13:50	2:03:02

Thursday, October 09, 2003 — Page 1-1

Figure 12.20 EXAMPLE OF "E-MAILS PER AGENT" REPORT – SELECTION BY AGENT

Selection by team



E-mails per agent

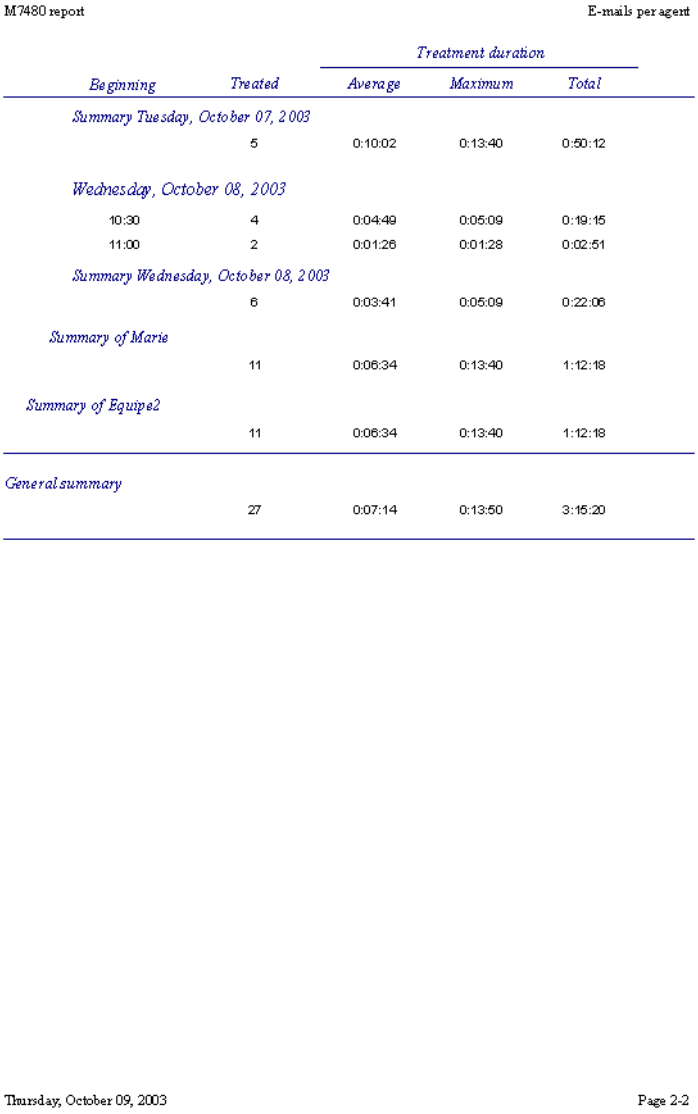
Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: Support
Teams: Equipe1, Equipe2
Precision per quarter hour

M7480 report — E-mails per agent

Beginning	Treated	Treatment duration: Average	Maximum	Total
Ident. of team: Equipe1				
Ident. of agent: Joseph				
Tuesday, October 07, 2003				
10:00	3	0:11:27	0:11:35	0:34:22
10:15	6	0:11:27	0:13:50	1:08:40
Summary Tuesday, October 07, 2003				
	9	0:11:27	0:13:50	1:43:02
Wednesday, October 08, 2003				
10:30	3	0:04:47	0:05:20	0:14:20
11:00	4	0:01:25	0:01:33	0:05:40
Summary Wednesday, October 08, 2003				
	7	0:02:51	0:05:20	0:20:00
Summary of Joseph				
	16	0:07:41	0:13:50	2:03:02
Summary of Equipe1				
	16	0:07:41	0:13:50	2:03:02
Ident. of team: Equipe2				
Ident. of agent: Marie				
Tuesday, October 07, 2003				
10:00	2	0:11:36	0:11:38	0:23:11
10:15	2	0:13:29	0:13:40	0:26:58
10:30	1	0:00:03	0:00:03	0:00:03

Thursday, October 09, 2003 — Page 1-2

Figure 12.21 EXAMPLE OF "E-MAILS PER AGENT" REPORT - SELECTION BY TEAM (1/2)



M7480 report E-mails per agent

Beginning	Treated	Treatment duration		
		Average	Maximum	Total
Summary Tuesday, October 07, 2003				
	5	0:10:02	0:13:40	0:50:12
Wednesday, October 08, 2003				
10:30	4	0:04:49	0:05:09	0:19:15
11:00	2	0:01:26	0:01:28	0:02:51
Summary Wednesday, October 08, 2003				
	6	0:03:41	0:05:09	0:22:06
Summary of Marie				
	11	0:06:34	0:13:40	1:12:18
Summary of Equipe2				
	11	0:06:34	0:13:40	1:12:18
General summary				
	27	0:07:14	0:13:50	3:15:20

Thursday, October 09, 2003 Page 2-2

FIGURE 12.21 EXAMPLE OF "E-MAILS PER AGENT" REPORT - SELECTION BY TEAM (2/2)

12.2.3.13 PREDEFINED REPORT "E-MAILS PER AGENT" (DETAILS)"

12.2.3.13.1 General principle

The end of the management of an e-mail belonging to an incoming service results in the backing up of some statistical data. More particularly, a recording is backed up in the "EMailsPerAgent" table.

The purpose of the “ E-mails per agent (Details)” report is to display these different recordings for the service and for each selected agent.

12.2.3.13.2 Content of the report

This report gives the detailed statistics for e-mails per agent for a given period.

The report displays the calls belonging to a particular Service an agents chosen.

the list of agents that can be selected consists of the agents defined in the system. This list may also include agents deleted from the system.

Agents can also be selected by selecting the teams to which these agents belong. In this case, only the current assignment of the agents to teams when the report is printed is taken into account: the assignment and disassignment log is not saved in the statistics.

The report displays the calls belonging to a particular Service an agents chosen.

The report contains :

- The time when the agent begins to process the e-mail,
- The processing time of the e-mail by the agent.

E-mails are grouped by team (if selection by team is chosen), by agent and by day. The total, average, and maximum values are computed for each group.

When the selection concerns non-separate teams, an agent belonging to several teams is only considered once in the general report summary. In this case, the values calculated in the general summary are not based on summaries per team, but rather on data per individual agent.

The data on which the report is based is contained in the 'EmailsPerAgent' table in the 'LongTermStatistics.mdb' database.

Moreover, team selection uses the data present in the "Teams" table of the "LongTermReporting.mdb" database. This table reflects the current link between the services, agents and teams defined within the system.

12.2.3.13.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the "EMailsPerAgent" table (see Section 12.3.3.18).

Tableau 12.32

Labels	Formula
Department	ServiceID
Agent	AgentId
Time	AgentScriptBeginTime
Handling duration	
Total	AgentScriptDuration

Summary

The labels that appear in the summary group together the data available in the corresponding detailed section.

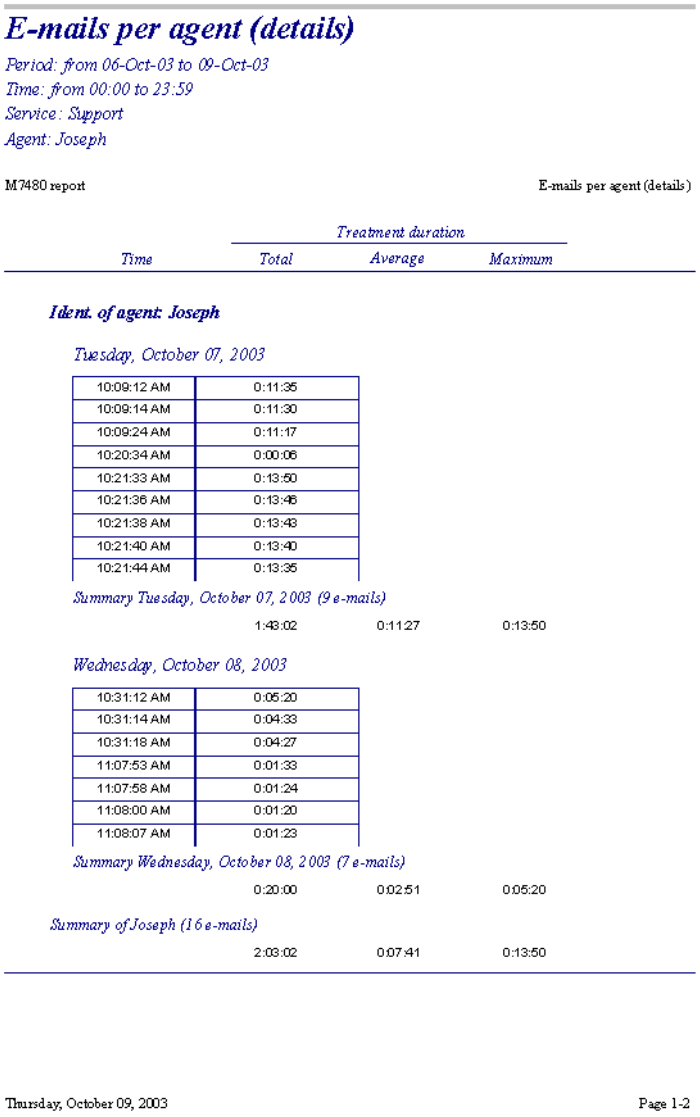
The number of e-mail is also available in the summary header.

Tableau 12.33

Labels	Formula
Handling duration	
Total	Sum(AgentScriptDuration)
Average	Avg(AgentScriptDuration)
Maximum	Max(AgentScriptDuration)
x calls	Count* (of elements in the section)

Example of "E-mails per agent (details)" report:

Selection by agent



E-mails per agent (details)

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: Support
Agent: Joseph

M7480 report — E-mails per agent (details)

Time	Treatment duration: Total	Average	Maximum
Ident. of agent: Joseph			
Tuesday, October 07, 2003			
10:09:12 AM	0:11:35		
10:09:14 AM	0:11:30		
10:09:24 AM	0:11:17		
10:20:34 AM	0:00:06		
10:21:33 AM	0:13:50		
10:21:36 AM	0:13:46		
10:21:38 AM	0:13:43		
10:21:40 AM	0:13:40		
10:21:44 AM	0:13:35		
Summary Tuesday, October 07, 2003 (9 e-mails)	1:43:02	0:11:27	0:13:50
Wednesday, October 08, 2003			
10:31:12 AM	0:05:20		
10:31:14 AM	0:04:33		
10:31:18 AM	0:04:27		
11:07:53 AM	0:01:33		
11:07:58 AM	0:01:24		
11:08:00 AM	0:01:20		
11:08:07 AM	0:01:23		
Summary Wednesday, October 08, 2003 (7 e-mails)	0:20:00	0:02:51	0:05:20
Summary of Joseph (16 e-mails)	2:03:02	0:07:41	0:13:50

Thursday, October 09, 2003 — Page 1-2

Figure 12.22 EXAMPLE OF "E-MAILS PER AGENT (DETAILS)" REPORT - SELECTION BY AGENT (1/2)

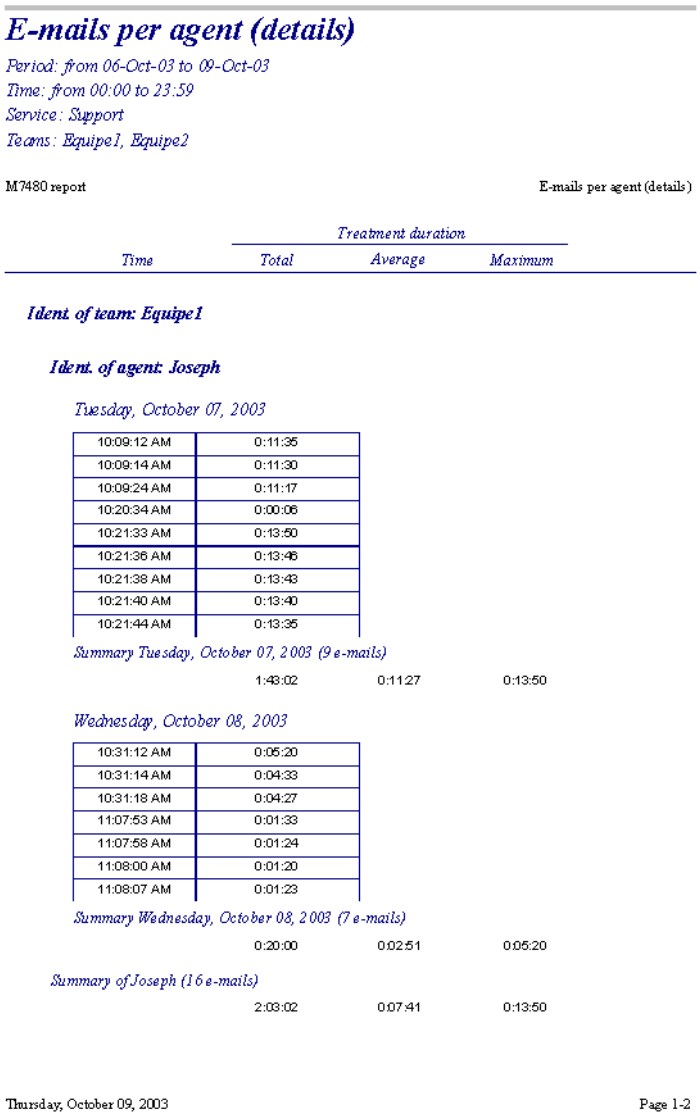
M7480 report E-mails per agent (details)

Time	Treatment duration		
	Total	Average	Maximum
General summary (16 e-mails)	2:03:02	0:07:41	0:13:50

Thursday, October 09, 2003 Page 2-2

FIGURE 12.22 EXAMPLE OF "E-MAILS PER AGENT (DETAILS)" REPORT - SELECTION BY AGENT (2/2)

Selection by team



E-mails per agent (details)

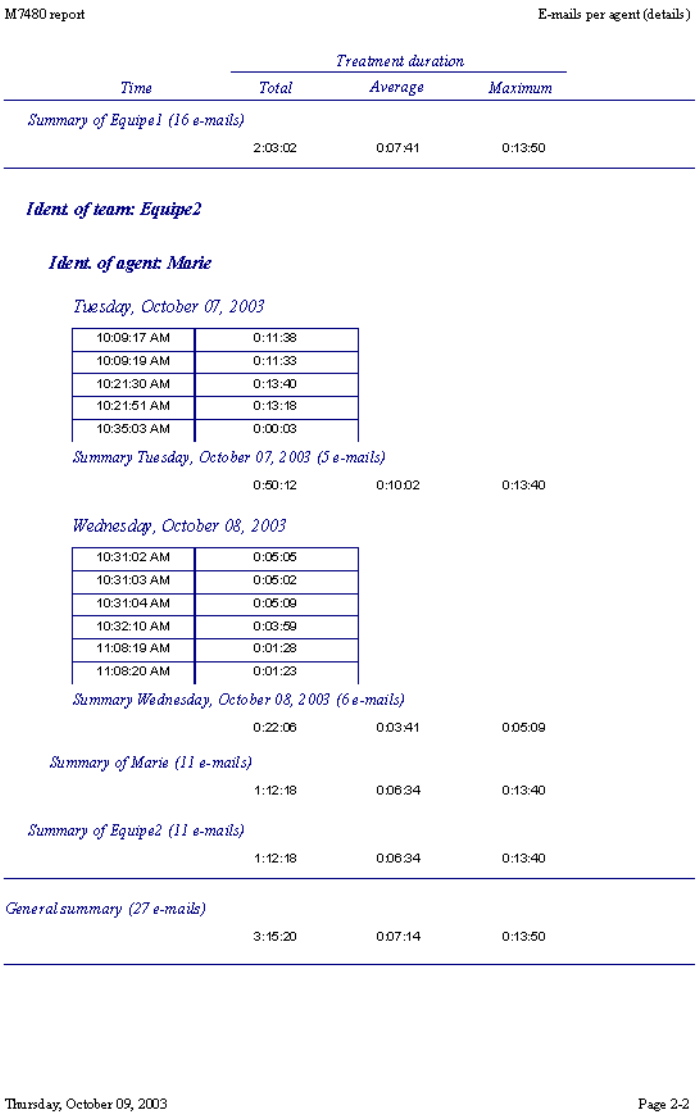
Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: Support
Teams: Equipe1, Equipe2

M7480 report — E-mails per agent (details)

Time	Treatment duration: Total	Average	Maximum
Ident. of team: Equipe1			
Ident. of agent: Joseph			
Tuesday, October 07, 2003			
10:09:12 AM	0:11:35		
10:09:14 AM	0:11:30		
10:09:24 AM	0:11:17		
10:20:34 AM	0:00:06		
10:21:33 AM	0:13:50		
10:21:36 AM	0:13:46		
10:21:38 AM	0:13:43		
10:21:40 AM	0:13:40		
10:21:44 AM	0:13:35		
Summary Tuesday, October 07, 2003 (9 e-mails)	1:43:02	0:11:27	0:13:50
Wednesday, October 08, 2003			
10:31:12 AM	0:05:20		
10:31:14 AM	0:04:33		
10:31:18 AM	0:04:27		
11:07:53 AM	0:01:33		
11:07:58 AM	0:01:24		
11:08:00 AM	0:01:20		
11:08:07 AM	0:01:23		
Summary Wednesday, October 08, 2003 (7 e-mails)	0:20:00	0:02:51	0:05:20
Summary of Joseph (16 e-mails)	2:03:02	0:07:41	0:13:50

Thursday, October 09, 2003 — Page 1-2

Figure 12.23 EXAMPLE OF "E-MAILS PER AGENT (DETAILS)" REPORT - SELECTION BY TEAM (1/2)



M7480 report E-mails per agent (details)

Time	Treatment duration: Total	Average	Maximum
Summary of Equipe1 (16 e-mails)	2:03:02	0:07:41	0:13:50

Ident. of team: Equipe2

Ident. of agent: Marie

Tuesday, October 07, 2003

10:09:17 AM	0:11:38
10:09:19 AM	0:11:33
10:21:30 AM	0:13:40
10:21:51 AM	0:13:18
10:35:03 AM	0:00:03

Summary Tuesday, October 07, 2003 (5 e-mails)	0:50:12	0:10:02	0:13:40

Wednesday, October 08, 2003

10:31:02 AM	0:05:05
10:31:03 AM	0:05:02
10:31:04 AM	0:05:09
10:32:10 AM	0:03:59
11:08:19 AM	0:01:28
11:08:20 AM	0:01:23

Summary Wednesday, October 08, 2003 (6 e-mails)	0:22:06	0:03:41	0:05:09
Summary of Marie (11 e-mails)	1:12:18	0:06:34	0:13:40
Summary of Equipe2 (11 e-mails)	1:12:18	0:06:34	0:13:40
General summary (27 e-mails)	3:15:20	0:07:14	0:13:50

Thursday, October 09, 2003 Page 2-2

FIGURE 12.23 EXAMPLE OF "E-MAILS PER AGENT (DETAILS)" REPORT - SELECTION BY TEAM (2/2)

12.2.3.14 PREDEFINED REPORT "WEB SESSIONS"

12.2.3.14.1 General principle

The end of a web session belonging to an incoming service results in the backing up of some statistical data. More particularly, a recording is backed up (or updated) in the consolidated "InboundCallsPerServicePer*" table.

The purpose of the "Web sessions" report is to display a summary for each level of precision (precision per quarter of an hour, half hour, hour, day, week and month) for the different calls received in the selected incoming service (filtered or not filtered).

12.2.3.14.2 Content of the report

This report gives the consolidated statistics for web sessions for a given period. The report displays the sessions belonging to a particular Service and the filtered data (see Sheet U-443) of this Service can also be displayed (if an association exists).

It is possible to select several filters, and there will be no general summary displayed at the end of the report.

This report contains, for each period of time (depending on the accuracy : per quarter hour, half hour, hour, day, week, or month) during which web sessions were made:

- The start date or time for this period
- total number of web sessions initiated during this period,
- average number of web sessions initiated during this period,
- maximum number of web sessions initiated during this period.

Depending on the precision selected, a daily summary (precision per quarter hour, half hour, or hour), monthly summary (precision per day or week) or annual summary (precision per month) is given, and in all cases a general summary is displayed for the service (if no filter is selected) or per filter (if one or more filters are selected).

The data on which the report is based is contained in the 'InboundCallsPerService' table in the 'LongTermStatistics.mdb' database.

12.2.3.14.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the "InboundCallsPerServicePer*" table (see Section 12.3.3.15).

Tableau 12.34

Labels	Formula
Department	ServiceID
Filter	FilterID
Begin	BeginTime
Number of web sessions	NbrWebSessions
Web session durations	
Average	TotalWebSessionDuration / NbrWebSessions
Maximum	MaxWebSessionDuration

Summary

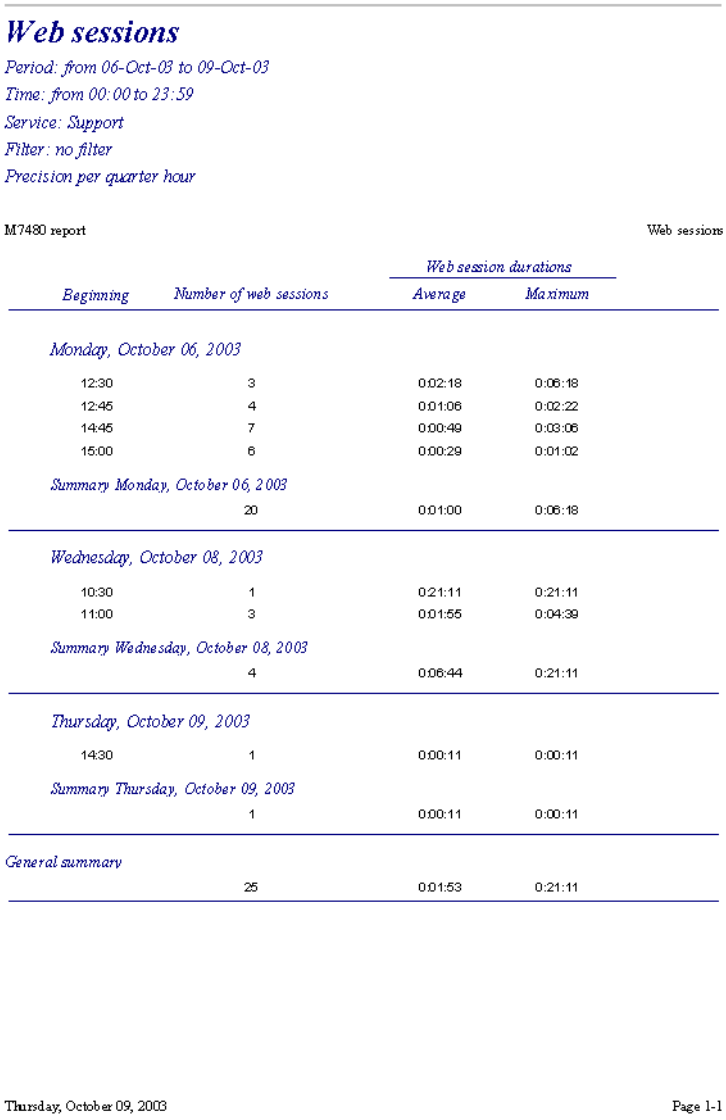
The labels that appear in the summary group together the data available in the detailed section in the corresponding precision level.

Tableau 12.35

Labels	Formula
Number of web sessions	Sum(NbrWebSessions)
Web session durations	
Average	Sum(TotalWebSessionDuration) / Sum(NbrWebSessions)
Maximum	Max(MaxWebSessionDuration)

Example of "Web sessions" report (precision per hour):

Selection by service



Web sessions

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: Support
Filter: no filter
Precision per quarter hour

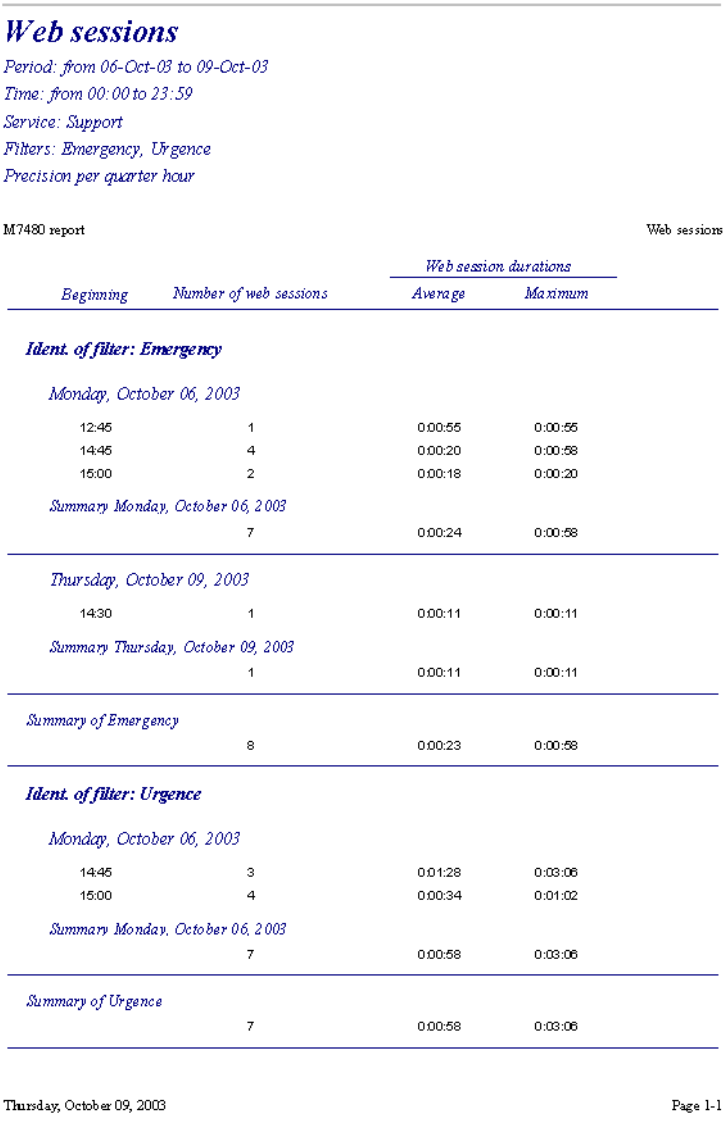
M7480 report — Web sessions

Beginning	Number of web sessions	Web session durations: Average	Web session durations: Maximum
Monday, October 06, 2003			
12:30	3	0:02:18	0:06:18
12:45	4	0:01:06	0:02:22
14:45	7	0:00:49	0:03:06
15:00	6	0:00:29	0:01:02
Summary Monday, October 06, 2003			
	20	0:01:00	0:06:18
Wednesday, October 08, 2003			
10:30	1	0:21:11	0:21:11
11:00	3	0:01:55	0:04:39
Summary Wednesday, October 08, 2003			
	4	0:06:44	0:21:11
Thursday, October 09, 2003			
14:30	1	0:00:11	0:00:11
Summary Thursday, October 09, 2003			
	1	0:00:11	0:00:11
General summary			
	25	0:01:53	0:21:11

Thursday, October 09, 2003 — Page 1-1

Figure 12.24 EXAMPLE OF "WEB SESSIONS" REPORT – SELECTION BY SERVICE

Selection by filter



Web sessions

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: Support
Filters: Emergency, Urgence
Precision per quarter hour

M7480 report — Web sessions

Beginning	Number of web sessions	Web session durations: Average	Web session durations: Maximum
Ident. of filter: Emergency			
Monday, October 06, 2003			
12:45	1	0:00:55	0:00:55
14:45	4	0:00:20	0:00:58
15:00	2	0:00:18	0:00:20
Summary Monday, October 06, 2003	7	0:00:24	0:00:58
Thursday, October 09, 2003			
14:30	1	0:00:11	0:00:11
Summary Thursday, October 09, 2003	1	0:00:11	0:00:11
Summary of Emergency	8	0:00:23	0:00:58
Ident. of filter: Urgence			
Monday, October 06, 2003			
14:45	3	0:01:28	0:03:06
15:00	4	0:00:34	0:01:02
Summary Monday, October 06, 2003	7	0:00:58	0:03:06
Summary of Urgence	7	0:00:58	0:03:06

Thursday, October 09, 2003 — Page 1-1

Figure 12.25 EXAMPLE OF "WEB SESSIONS" REPORT – SELECTION BY FILTER

12.2.3.15 PREDEFINED REPORT "WEB SESSIONS (DETAILS)"

12.2.3.15.1 General principle

The end of a web session belonging to an incoming service results in the backing up of some statistical data. More particularly, a recording is backed up in the "InboundWebsessions" table.

The purpose of the "Sessions Web (details)" report is to display these different recordings for the service and for each selected filter.

12.2.3.15.2 Content of the report

This report gives the detailed statistics for web sessions for a given period. These sessions belong to a predefined service and the filtered data (see Sheet U-443) of this Service may be displayed (a web session is included to the report only when associated with a voice call passing the filter).

It is possible to select several filters, and there will be no general summary displayed at the end of the report.

This report shows the details of each web session:

- begin time of the web session,
- duration of the web session,
- IP address of the machine connected to the contact centre via M5000 CC WebCall Service for this web session.

The sessions are grouped by filter (if several filters are selected) and by day. Average and maximum values are computed for each group.

The data on which the report is based is contained in the 'InboundWebSessions' table in the 'LongTermStatistics.mdb' database.

12.2.3.15.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the "InboundWebsessions" table (see Section 12.3.3.4).

Tableau 12.36

Labels	Formula
Department	ServiceID
Filter	FilterID
Time	WebSessionBeginTime
Web session duration	WebSessionDuration
IP address	WebIPAddress

Summary

The labels that appear in the summary group together the data available in the corresponding detailed section.

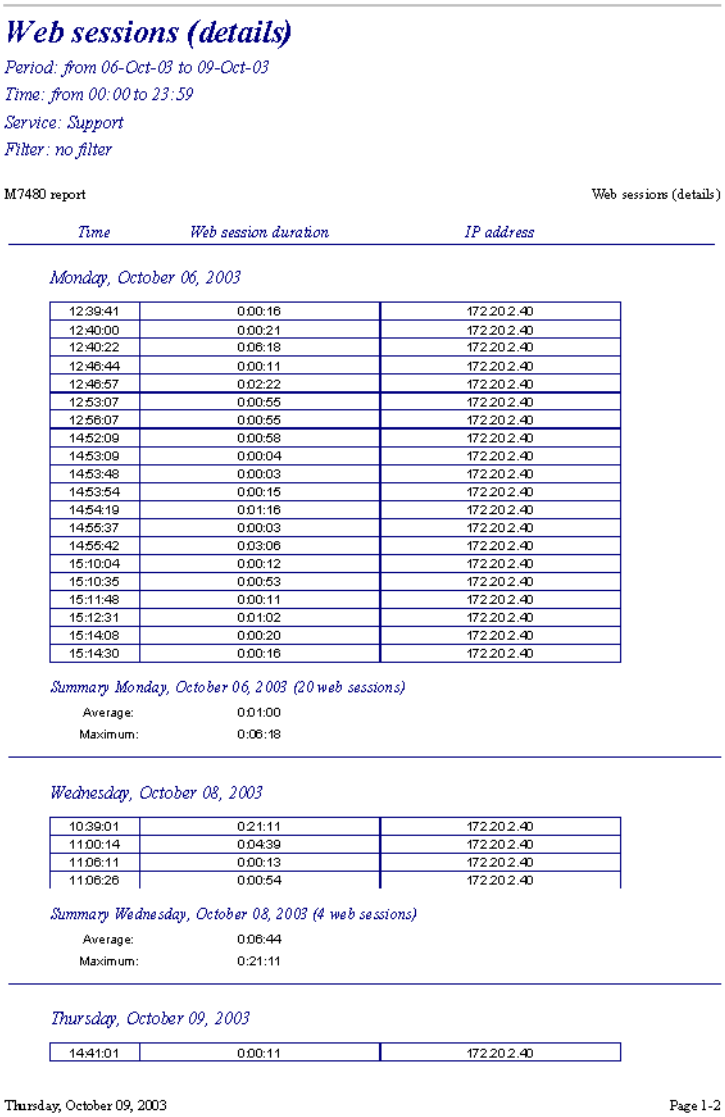
The number of web sessions is also available in the summary header.

Tableau 12.37

Labels	Formula	
	Average	Maximum
Web session duration	Avg(WebSessionDuration)	Max(WebSessionDuration)
x calls	Count* (of elements in the section)	

Example of "Web sessions (details)":

Selection by service



Web sessions (details)

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: Support
Filter: no filter

M7480 report — Web sessions (details)

Time	*Web session duration*	*IP address*
Monday, October 06, 2003		
12:39:41	0:00:16	172.20.2.40
12:40:00	0:00:21	172.20.2.40
12:40:22	0:06:18	172.20.2.40
12:46:44	0:00:11	172.20.2.40
12:46:57	0:02:22	172.20.2.40
12:53:07	0:00:55	172.20.2.40
12:56:07	0:00:55	172.20.2.40
14:52:09	0:00:58	172.20.2.40
14:53:09	0:00:04	172.20.2.40
14:53:48	0:00:03	172.20.2.40
14:53:54	0:00:15	172.20.2.40
14:54:19	0:01:16	172.20.2.40
14:55:37	0:00:03	172.20.2.40
14:55:42	0:03:06	172.20.2.40
15:10:04	0:00:12	172.20.2.40
15:10:35	0:00:53	172.20.2.40
15:11:48	0:00:11	172.20.2.40
15:12:31	0:01:02	172.20.2.40
15:14:08	0:00:20	172.20.2.40
15:14:30	0:00:16	172.20.2.40

Summary Monday, October 06, 2003 (20 web sessions)

Average: 0:01:00
Maximum: 0:06:18

Wednesday, October 08, 2003		
10:39:01	0:21:11	172.20.2.40
11:00:14	0:04:39	172.20.2.40
11:06:11	0:00:13	172.20.2.40
11:06:26	0:00:54	172.20.2.40

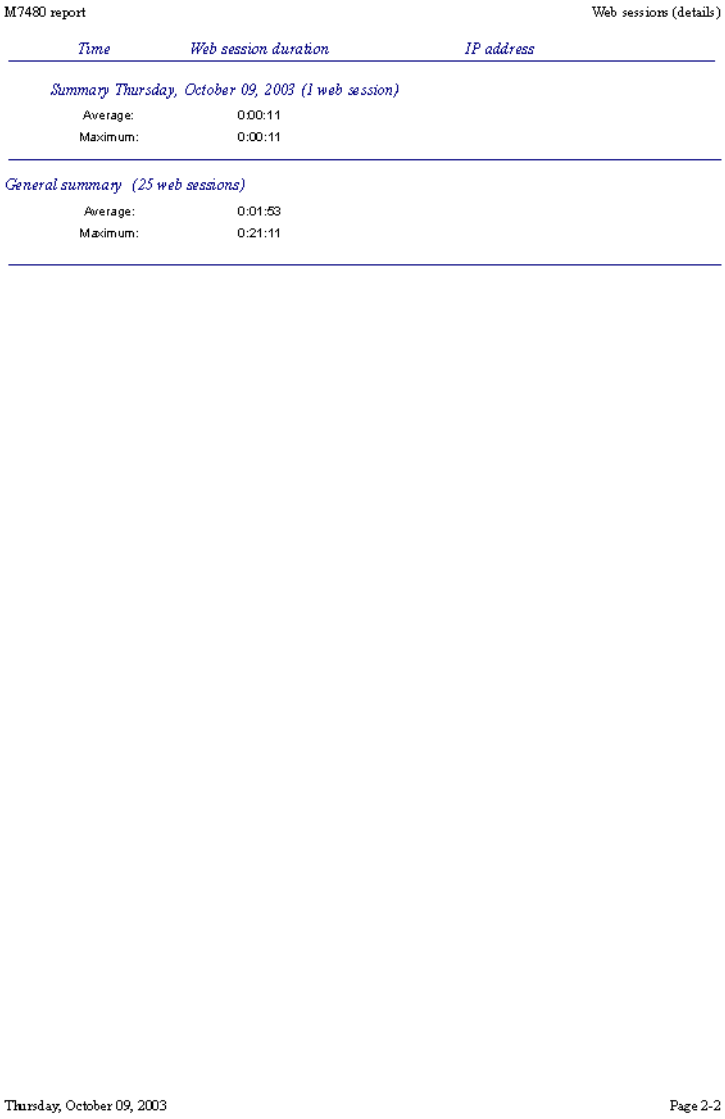
Summary Wednesday, October 08, 2003 (4 web sessions)

Average: 0:06:44
Maximum: 0:21:11

Thursday, October 09, 2003		
14:41:01	0:00:11	172.20.2.40

Thursday, October 09, 2003 — Page 1-2

Figure 12.26 EXAMPLE OF "WEB SESSIONS (DETAILS)" REPORT – SELECTION BY SERVICE (1/2)



M7480 report — Web sessions (details)

Time	*Web session duration*	*IP address*

Summary Thursday, October 09, 2003 (1 web session)

Average:	0:00:11
Maximum:	0:00:11

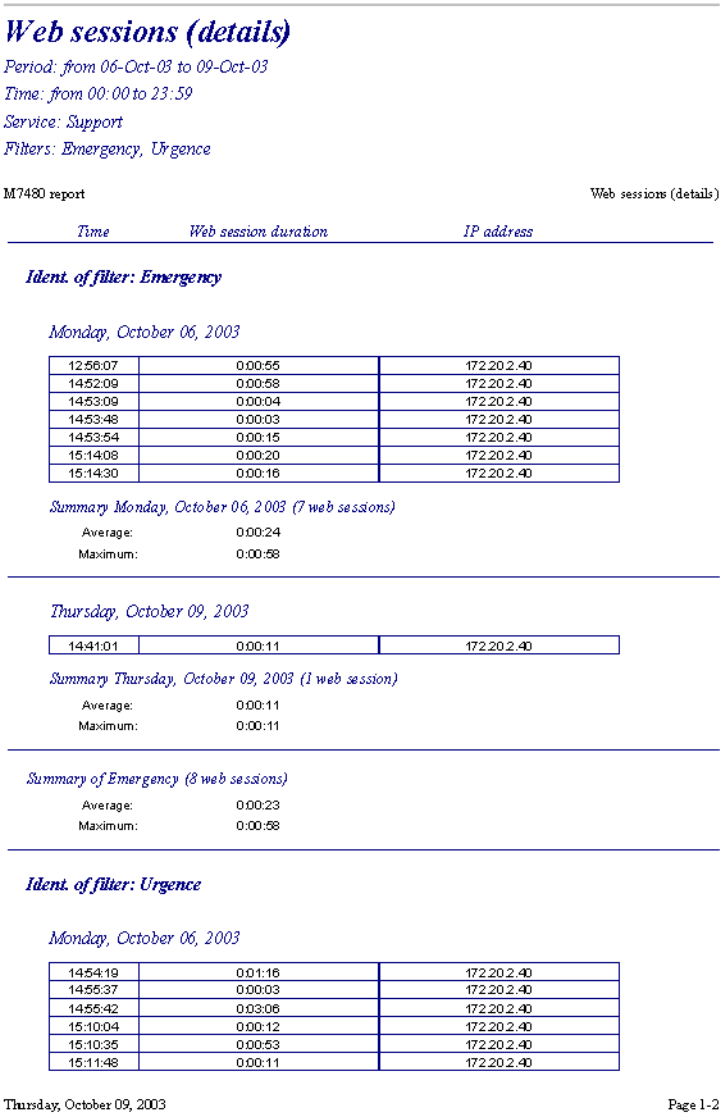
General summary (25 web sessions)

Average:	0:01:53
Maximum:	0:21:11

Thursday, October 09, 2003 — Page 2-2

FIGURE 12.26 EXAMPLE OF "WEB SESSIONS (DETAILS)" REPORT – SELECTION BY SERVICE (2/2)

Selection by filter



Web sessions (details)

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: Support
Filters: Emergency, Urgence

M7480 report — Web sessions (details)

Time	*Web session duration*	*IP address*

Ident. of filter: Emergency

Monday, October 06, 2003

12:56:07	0:00:55	172.20.2.40
14:52:09	0:00:58	172.20.2.40
14:53:09	0:00:04	172.20.2.40
14:53:48	0:00:03	172.20.2.40
14:53:54	0:00:15	172.20.2.40
15:14:08	0:00:20	172.20.2.40
15:14:30	0:00:16	172.20.2.40

Summary Monday, October 06, 2003 (7 web sessions)

Average: 0:00:24
Maximum: 0:00:58

Thursday, October 09, 2003

14:41:01	0:00:11	172.20.2.40

Summary Thursday, October 09, 2003 (1 web session)

Average: 0:00:11
Maximum: 0:00:11

Summary of Emergency (8 web sessions)

Average: 0:00:23
Maximum: 0:00:58

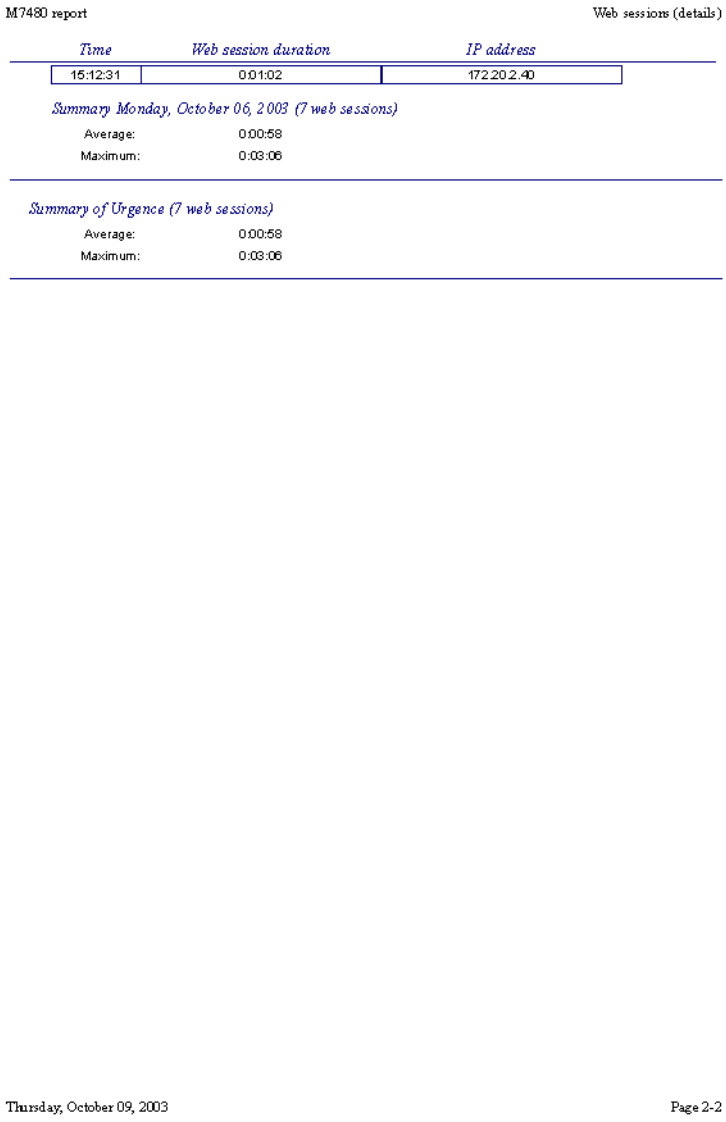
Ident. of filter: Urgence

Monday, October 06, 2003

14:54:19	0:01:16	172.20.2.40
14:55:37	0:00:03	172.20.2.40
14:55:42	0:03:06	172.20.2.40
15:10:04	0:00:12	172.20.2.40
15:10:35	0:00:53	172.20.2.40
15:11:48	0:00:11	172.20.2.40

Thursday, October 09, 2003 — Page 1-2

Figure 12.27 EXAMPLE OF "WEB SESSIONS (DETAILS)" REPORT – SELECTION BY FILTER (1/2)


M7480 report Web sessions (details)

Time	Web session duration	IP address
15:12:31	0:01:02	172.20.2.40

Summary Monday, October 06, 2003 (7 web sessions)

Average: 0:00:58
Maximum: 0:03:06

Summary of Urgence (7 web sessions)

Average: 0:00:58
Maximum: 0:03:06

Thursday, October 09, 2003 Page 2-2

FIGURE 12.27 EXAMPLE OF "WEB SESSIONS (DETAILS)" REPORT – SELECTION BY FILTER (2/2)

12.2.3.16 PREDEFINED REPORT "AGENT STATUSES AND ACTIVITIES (DETAILS)"

This report shows the detailed statistics for the agent statuses, their activities and activity codes. The information presented by this report does not depend on the identifier of a Service.

the list of agents that can be selected consists of the agents defined in the system. This list may also include agents deleted from the system.

Agents can also be selected by selecting the teams to which these agents belong. In this case, only the current assignment of the agents to teams when the report is printed is taken into account: the assignment and disassignment log is not saved in the statistics.

This selection by team automatically includes agents deleted from the system, but who were part of these teams when they were deleted.

The report contains :

- The start time for a new status(*) of the agent
- time for end of this status,
- the agent state,
- the agent's activity.
- The agent's activity code

(*) The agent is characterised by his status, activity, and activity code, as well as the global status of his extensions. But the global extension status has not been taken into account in this report. Therefore, only the changes in one of the first three elements (status, activity or code) corresponds to a new line of the report.

It is also possible to check whether the agent's status has been forcibly changed by the system. In fact, depending on the properties defined for each service, the agent may sometimes change automatically from "Not ready" to "Ready" or from "PCP" to "Ready". This is the case when the maximum durations of "Not ready" or/and in "PCP" statuses are defined in at least one service to which the agent is assigned. The system may also take the initiative of disconnecting the agent automatically if a certain number of consecutive calls have not been answered or if the M5000 CC Server notices that its telephone extension has become unreachable.

Thus, for each record that appears on the report, you will see whether or not the agent status described was ended by force.

Note: Regarding forced changes: This detailed report displays the number of periods that have been ended by force. Depending on the time and period when the report is printed, this number may differ from the number displayed in the corresponding consolidated report (which, on its own part, displays the number of periods started by force).

The data is grouped by team (if selection by team is selected), by day and by agent; the total durations in each status (regardless of any activity codes used) are calculated for each group.

When the selection concerns non-separate teams, an agent belonging to several teams is only considered once in the general report summary. In this case, the values calculated in the general summary are not based on summaries per team, but rather on data per individual agent.

Note: The request used in this report to filter the activities (the opening and closing of service) is different from the other reports. In most of the reports, this request is based on the beginning of the call, of the presentation, of the e-mail, etc. So the report only displays the data that started within the specified time interval. The request made for the "Agent Statuses and activities (details)" and "Service openings and closings (details)" reports is different. It includes all the data occurring within the specified time interval.

The data on which the report is based is contained in the "AgentGlobalStatuses" table in the 'LongTermStatistics.mdb' database. The fields used are :

- EventTime - PreviousDuration (the start time corresponds to the gap between the two fields)
- EventTime
- PreviousStatus
- PreviousActivity
- PreviousActivityCode
- PreviousDuration
- NewForcedChange

Moreover, team selection uses the data present in the "Teams" table of the "LongTermReporting.mdb" database. This table reflects the current link between the services, agents and teams defined within the system.

Example of report "Agent statuses and activities (details)":

Agents statuses and activities (details)

Period: from 08-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Agents: Georges

M7480 report — Agents statuses and activities (details)

Time	End	Status	Activity	Activity code	Duration	Terminated
Ident. of agent: Georges						
Thursday, October 09, 2003						
10/9/2003 2:51:21 PM	3:54:46 PM	Logout	Ready	-	1:03:25	-
10/9/2003 3:54:46 PM	3:54:53 PM	Login	Ready	-	0:00:07	-
10/9/2003 3:55:29 PM	3:55:31 PM	Login	Not Ready	Pause	0:00:38	-
10/9/2003 3:57:30 PM	3:57:45 PM	Login	Ready	-	0:02:14	-
10/9/2003 3:58:10 PM	3:58:12 PM	Login	Not Ready	Animation DPX	0:00:27	-
10/9/2003 3:58:17 PM	3:59:00 PM	Login	Ready	-	0:00:48	-
10/9/2003 3:59:00 PM	3:59:00 PM	Login	Not Ready	Pause	0:00:00	-
Summary Thursday, October 09, 2003						
		Login	Ready		0:03:09	
			Not Ready		0:01:05	
			PCP		0:00:00	
			Break		0:00:00	
		Total Login			0:04:14	
		Number of forced disconnections			0	
		Number of forced Ready			0	
Summary of Georges						
		Login	Ready		0:03:09	
			Not Ready		0:01:05	
			PCP		0:00:00	
			Break		0:00:00	
		Total Login			0:04:14	
		Number of forced disconnections			0	
		Number of forced Ready			0	

Figure 12.28 EXAMPLE OF "AGENT STATUSES AND ACTIVITIES (DETAILS)" REPORT (1/2)

M7480 report — Agents statuses and activities (details)

Time	End	Status	Activity	Activity code	Duration	Terminated
General summary						
		Login	Ready		0:04:19	
			Not Ready		0:01:43	
			PCP		0:00:00	
			Break		0:00:00	
		Total Login			0:06:02	
		Number of forced disconnections			0	
		Number of forced Ready			0	

FIGURE 12.28 EXAMPLE OF "AGENT STATUSES AND ACTIVITIES (DETAILS)" REPORT (2/2)

12.2.3.17 Predefined "Agents global status" report

12.2.3.17.1 General principle

A contact centre agent is characterised at any time by:

- His or her status (connected or disconnected)
- His or her activity (ready, not ready, or PCP)
- A possible code associated with his or her activity, and
- The status of his extension(s).

Each time any of these characteristics changes, a recording is backed up (or updated) in the consolidated "StatusesAndActivitiesPerAgentPer*" and "ActivityCodePerAgentPer*" tables of the statistical database. The purpose of the "Agents global status" report is to display a summary for each level of precision (precision per quarter of an hour, half hour, hour, day, week and month) for the different changes made for each selected agent.

12.2.3.17.2 Content of the report

The "Agents global status" report shows the consolidated statistics on the global status of agents. The information presented by this report is independent of any Service.

the list of agents that can be selected consists of the agents defined in the system. This list may also include agents deleted from the system.

Agents can also be selected by selecting the teams to which these agents belong. In this case, only the current assignment of the agents to teams when the report is printed is taken into account: the assignment and disassignment log is not saved in the statistics.

This selection by team automatically includes agents deleted from the system, but who were part of these teams when they were deleted.

This report contains, per agent selected and for each time interval (depending on the level of precision and time range chosen):

- The start date or time of this time interval
- the agent global status, calculated as described above,
- Any code associated with the activity
- total time during which the agent has been in each global status,
- number of periods during which the agent has been in each global status.

A view that does not take into account the activity codes is presented, followed by a view that takes into account the activity codes selected when requesting the printing of the report.

Depending on the precision chosen, a daily summary (precision per quarter hour, half hour, and hour), monthly (precision per day and week) or annual (precision per month) is given. A summary by team (if

selection by team is selected), by agent and a full summary are also displayed.

When the selection concerns non-separate teams, an agent belonging to several teams is only considered once in the general report summary. In this case, the values calculated in the general summary are not based on summaries per team, but rather on data per individual agent.

The data on which the report is based is contained in the "StatusesAndActivitiesPerAgentPer*" and "ActivityCodePerAgentPer*" tables(see Sections 12.3.3.20 and 12.3.3.21) in the 'LongTermStatistics.mdb' database.

Moreover, team selection uses the data present in the "Teams" table of the "LongTermReporting.mdb" database. This table reflects the current link between the services, agents and teams defined within the system.

When an agent changes activity, or if the global status of his extension is not free, the number of the corresponding global status changes in the report is not modified: in fact, in this case, the global status of the agent remains unchanged. On the other hand, the corresponding global status will be updated as the agent's status or activity changes.

Let us take the example below:

The agent is in the (In, Ready, Inbound calls (DCP)) status since 2 minutes. He changes to the (In, Not ready, Inbound calls (DCP)) status for 1 minute, then returns to (In, Ready, Inbound calls (DCP)). Finally, 30 seconds later, the agent on-hooks. In this case, the content of the report will change as follows:

Tableau 12.38

Agent's global status	Agent's activity	Number of "Inbound calls (DCP)" changes seen in the report	Duration of "Inbound calls (DCP)" seen in the report
Inbound calls (DCP)	Ready	1	-
Inbound calls (DCP)	Not Ready	1	00 :02 :00
Inbound calls (DCP)	Ready	1	00 :03 :00
Available	Ready	1	00 :03 :30

12.2.3.17.3 MEANING OF LABELS

Report table

The values displayed in the different columns are described in the section concerning the "StatusesAndActivitiesPerAgentPer*" and "ActivityCodePerAgentPer*" tables (see Sections 12.3.3.20and 12.3.3.21).

The values displayed in the “Activity code” column are labels associated with activity numeric codes, as defined in the system (see Sheet U-312) when the report is edited.

Tableau 12.39

Labels		Formula	
		Number of changes	Duration
Begin		BeginTime	
Connected	Ready & idle	NbrLoginReadyIdlePeriods	TotalLoginReadyIdleDuration
	Not Ready & Idle	NbrLoginNotReadyIdlePeriods	TotalLoginNotReadyDuration
	PCP & Idle	NbrLoginPCPIdlePeriods	TotalLoginPCPDuration
	Idle & free	NbrLoginBreakIdlePeriods	TotalLoginBreakDuration
	Inbound calls (DCP)	NbrDCPInboundPeriods	TotalDCPInboundDuration
	Outbound calls (DCP)	NbrDCPOutboundPeriods	TotalDCPOutboundDuration
	Private inbound call	NbrPrivateInPeriods	TotalReservedInboundDuration

Tableau 12.39

	Private outbound call	NbrPrivateOutPeriods	TotalReservedOutboundDuration
	Presentation of inbound calls (Reserved)	NbrReservedInboundPeriods	TotalPrivateInDuration
	Presentation of outbound calls (Reserved)	NbrReservedOutboundPeriods	TotalPrivateOutDuration
	Incoming call on hold	NbrHoldInboundPeriods	TotalHoldInboundDuration
	Outbound call on hold	NbrHoldOutboundPeriods	TotalOutboundDuration
Work duration		TotalLoginReadyDuration + TotalLoginNotReadyDuration + TotalLoginPCPDuration + TotalLoginBreakDuration + TotalDCPInboundDuration + TotalDCPOutboundDuration + TotalReservedInboundDuration + TotalReservedOutboundDuration + TotalPrivateInDuration + TotalPrivateOutDuration + TotalHoldInboundDuration + TotalOutboundDuration (total duration of connected statuses above)	
Forced disconnections		NbrForcedLogoutPeriods	
Forced ready		NbrForcedReadyPeriods	

Tableau 12.40

Global status	code	Number of changes	Duration
Activity + Code	Code	NbrPeriods	TotalDuration

Report summary

The labels that appear in the summary group together the data available in the detailed section in the corresponding precision level. Except for the details of the different activity codes.

Work duration is the total of the durations of all the "Total*Duration" recordings.

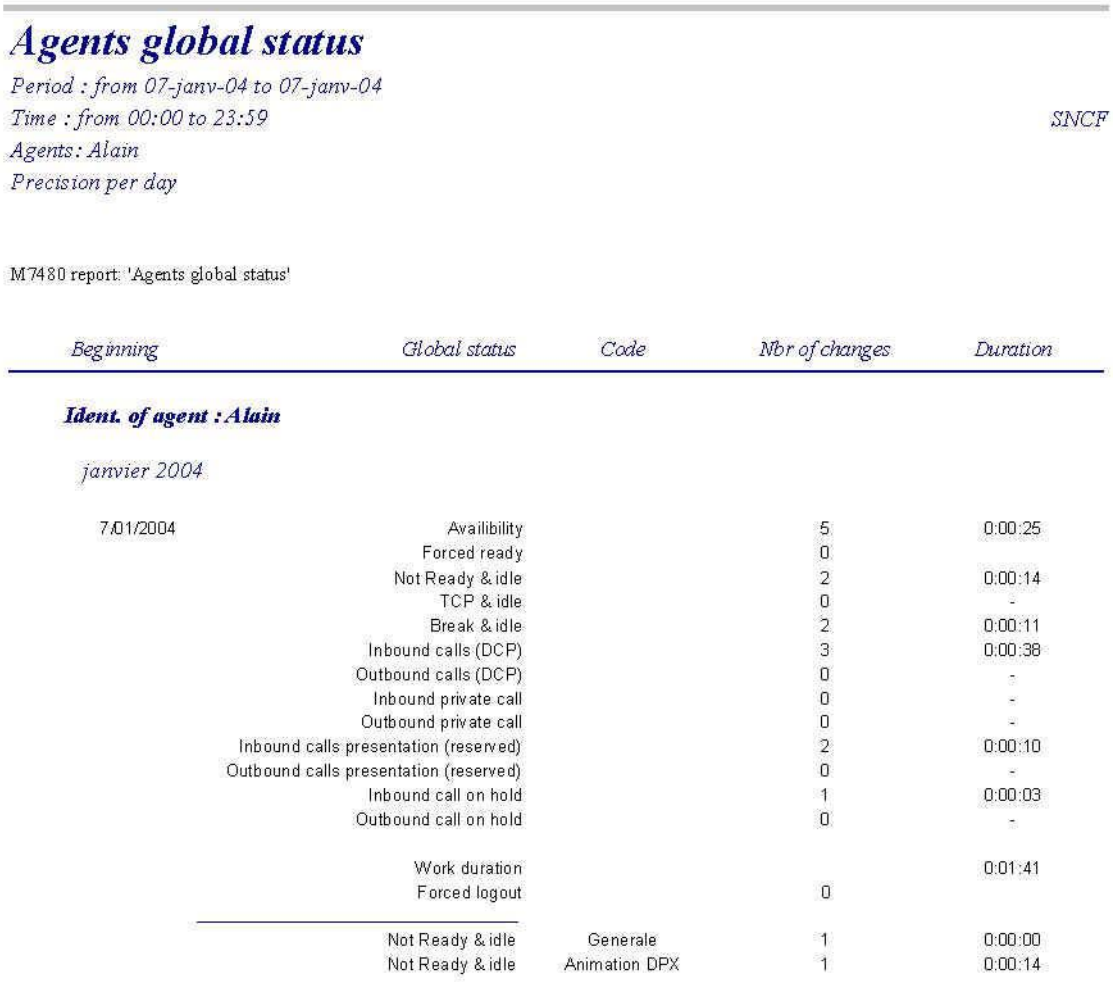
Tableau 12.41

Labels		**Formula**	
		Number of changes	Duration
Connected	Ready & idle	Sum(NbrLoginReadyIdlePeriods)	Sum(TotalLoginReadyIdleDuration)
	Not Ready & Idle	Sum(NbrLoginNotReadyIdlePeriods)	Sum(TotalLoginNotReadyDuration)
	PCP & Idle	Sum(NbrLoginPCPIdlePeriods)	Sum(TotalLoginPCPDuration)
	Idle & free	Sum(NbrLoginBreakIdlePeriods)	Sum(TotalLoginBreakDuration)

Tableau 12.41

	Inbound calls (DCP)	Sum(NbrDCPInboundPeriods)	Sum(TotalDCPInboundDuration)
	Outbound calls (DCP)	Sum(NbrDCPOutboundPeriods)	Sum(TotalDCPOutboundDuration)
	Private inbound call	Sum(NbrPrivateInPeriods)	Sum(TotalReservedInboundDuration)
	Private outbound call	Sum(NbrPrivateOutPeriods)	Sum(TotalReservedOutboundDuration)
	Presentation of inbound calls (Reserved)	Sum(NbrReservedInboundPeriods)	Sum(TotalPrivateInDuration)
	Presentation of outbound calls (Reserved)	Sum(NbrReservedOutboundPeriod)	Sum(TotalPrivateOutDuration)
	Incoming call on hold	Sum(NbrHoldInboundPeriods)	Sum(TotalHoldInboundDuration)
	Outbound call on hold	Sum(NbrHoldOutboundPeriods)	Sum(TotalOutboundDuration)
Work duration		Sum(TotalLoginReadyDuration) + Sum(TotalLoginNotReadyDuration) + Sum(TotalLoginPCPDuration) + Sum(TotalLoginBreakDuration) + Sum(TotalDCPInboundDuration) + Sum(TotalDCPOutboundDuration) + Sum(TotalReservedInboundDuration) + Sum(TotalReservedOutboundDuration) + Sum(TotalPrivateInDuration) + Sum(TotalPrivateOutDuration) + Sum(TotalHoldInboundDuration) + Sum(TotalOutboundDuration) (total duration of connected statuses above)	
Forced disconnections		Sum(NbrForcedLogoutPeriods)	
Forced ready		Sum(NbrForcedReadyPeriods)	

Example of "Agents status and activities" report, precision per day:



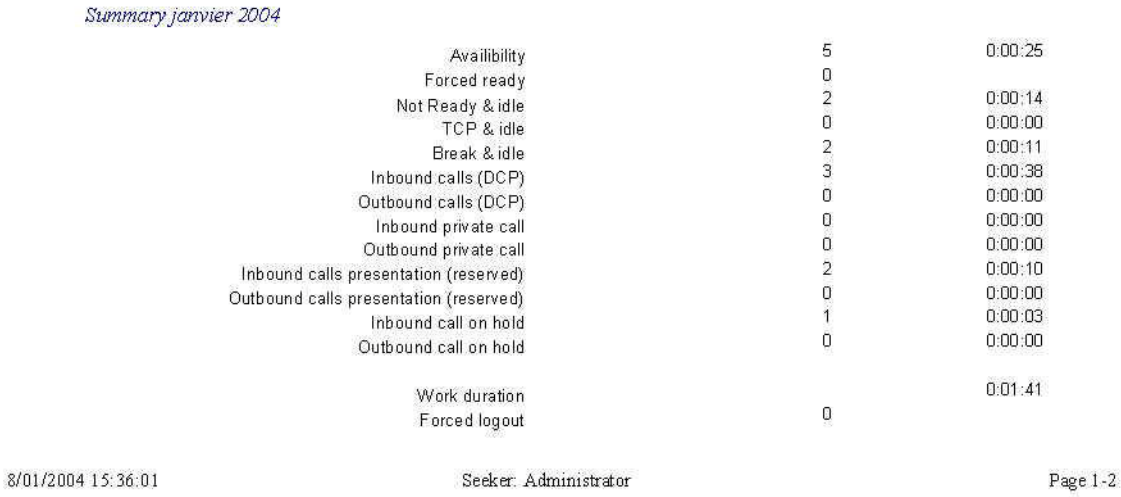
Agents global status

Period : from 07-janv-04 to 07-janv-04
Time : from 00:00 to 23:59 *SNCF*
Agents: Alain
Precision per day

M7480 report: 'Agents global status'

Beginning	*Global status*	*Code*	*Nbr of changes*	*Duration*
Ident. of agent : Alain				
janvier 2004				
7/01/2004	Availibility		5	0:00:25
	Forced ready		0	
	Not Ready & idle		2	0:00:14
	TCP & idle		0	-
	Break & idle		2	0:00:11
	Inbound calls (DCP)		3	0:00:38
	Outbound calls (DCP)		0	-
	Inbound private call		0	-
	Outbound private call		0	-
	Inbound calls presentation (reserved)		2	0:00:10
	Outbound calls presentation (reserved)		0	-
	Inbound call on hold		1	0:00:03
	Outbound call on hold		0	-
	Work duration			0:01:41
	Forced logout		0	
	Not Ready & idle	Generale	1	0:00:00
	Not Ready & idle	Animation DPX	1	0:00:14

Figure 12.29 EXAMPLE OF "AGENTS GLOBAL STATUS" REPORT (1/3)



Summary janvier 2004

Availibility	5	0:00:25
Forced ready	0	
Not Ready & idle	2	0:00:14
TCP & idle	0	0:00:00
Break & idle	2	0:00:11
Inbound calls (DCP)	3	0:00:38
Outbound calls (DCP)	0	0:00:00
Inbound private call	0	0:00:00
Outbound private call	0	0:00:00
Inbound calls presentation (reserved)	2	0:00:10
Outbound calls presentation (reserved)	0	0:00:00
Inbound call on hold	1	0:00:03
Outbound call on hold	0	0:00:00
Work duration		0:01:41
Forced logout	0	

8/01/2004 15:36:01 Seeker: Administrator Page 1-2

FIGURE 12.29 EXAMPLE OF "AGENTS GLOBAL STATUS" REPORT (2/3)

M7480 report: 'Agents global status'

Beginning	Global status	Code	Nbr of changes	Duration
Summary of Alain				
	Availibility		5	0:00:25
	Forced ready		0	
	Not Ready & idle		2	0:00:14
	TCP & idle		0	0:00:00
	Break & idle		2	0:00:11
	Inbound calls (DCP)		3	0:00:38
	Outbound calls (DCP)		0	0:00:00
	Inbound private call		0	0:00:00
	Outbound private call		0	0:00:00
	Inbound calls presentation (reserved)		2	0:00:10
	Outbound calls presentation (reserved)		0	0:00:00
	Inbound call on hold		1	0:00:03
	Outbound call on hold		0	0:00:00
	Work duration			0:01:41
	Forced logout		0	
General summary				
	Availibility		5	0:00:25

FIGURE 12.29 EXAMPLE OF "AGENTS GLOBAL STATUS" REPORT (3/3)

12.2.3.18 Predefined "Agents global status (details)" report

12.2.3.18.1 General principle

A contact centre agent is characterised at any time by:

- His or her status (connected or disconnected)
- His or her activity (ready, not ready, or PCP)
- A possible code associated with his or her activity, and
- The status of his extension(s).

Each time any of these characteristics changes, a recording is backed up in the "AgentGlobalStatuses" table of the statistical database. The purpose of the "Agents global status (details)" is to display the sequence of changes for each selected agent.

12.2.3.18.2 Content of the report

This report shows detailed statistics about the status of the agents, their activities, activity codes and the global status of their extensions . The information presented by this report does not depend on the identifier of a Service.

the list of agents that can be selected consists of the agents defined in the system. This list may also include agents deleted from the system.

Agents can also be selected by selecting the teams to which these agents belong. In this case, only the current assignment of the agents to teams when the report is printed is taken into account: the assignment and disassignment log is not saved in the statistics.

This selection by team automatically includes agents deleted from the system, but who were part of these teams when they were deleted.

The report contains:

- The start time for a new status(*) of the agent
- time for end of this status,
- the agent state,
- the global status of the agent's extensions,
- the agent's activity,
- the agent's activity code.

The data is grouped by team (if selection by team is chosen), by day and by agent; the total durations in each status (status, activity, activity code, global extension status) are calculated for each group.

When the selection concerns non-separate teams, an agent belonging to several teams is only considered once in the general report summary. In this case, the values calculated in the general summary are not based on summaries per team, but rather on data per individual agent.

The summaries present the total duration of each global status of the agents.

12.2.3.18.3 MEANING OF LABELS

Report table

The values displayed in the "Status", "Status of extensions", and "Activity" columns are described in the section about the "AgentGlobalStatuses" in the "LongTermStatistics.mdb" database (see Section 12.3.3.7).

The values displayed in the “Activity code” column are labels associated with activity numeric codes, as defined in the system (see Sheet U-312) when the report is edited.

Tableau 12.42

Labels	Formula
Ident. of agent	AgentID
Time	PreviousEventTime
End	EventTime
Status	PreviousStatus

Tableau 12.42

Extension status	PreviousGlobalExtensionStatus
Activity	PreviousActivity
Activity code	PreviousActivityCode
Duration	PreviousDuration
Observation	NewForcedChange

Report summary

The labels available in the summary group the data together according to the notion of agent global status. This notion is calculated on the basis of a convention: extension status has priority over agent status and activity. In other words:

- If [global extension status] is different from Free, then agent global status is equal to global extension status.
- otherwise, the agent's status is the same as status, activity, and activity code.

Examples:

Let us take the quadruplet: (Connected, Not Ready, Code = 0, Inbound call communication (DCP)).
In this case, the agent global status is Inbound call communication (DCP).

Let us take the quadruplet: (Connected, Not Ready, Code = 0, Free).
In this case, the agent global status is Connected, Not Ready, and Code 0.

Always by convention, the agent global status corresponding to the quadruplet (Connected, Ready, *, Free) is called Available, while the corresponding period in the summary is called Availability.

The work duration is the sum of the durations of all the recordings, except those corresponding to the quadruplets (Disconnected, *,*,Free).

Note: The notion of agent global status is also used to view an agent's day status.

Tableau 12.43

Labels		Formula
Connected	Ready & idle	Sum([PreviousDuration]) If [PreviousGlobalExtensionStatus]=0 and [PreviousActivity]=0 and [PreviousStatus]=0
	Not Ready & Idle	Sum([PreviousDuration]) If [PreviousGlobalExtensionStatus]=0 and [PreviousActivity]=1 and [PreviousStatus]=0
	PCP & Idle	Sum([PreviousDuration]) If [PreviousGlobalExtensionStatus]=0 and [PreviousActivity]=2 and [PreviousStatus]=0
	Idle & free	Sum([PreviousDuration]) If [PreviousGlobalExtensionStatus]=0 and [PreviousActivity]=3 and [PreviousStatus]=0
	Inbound calls (DCP)	Sum([PreviousDuration]) If [PreviousGlobalExtensionStatus]=1
	Outbound calls (DCP)	Sum([PreviousDuration]) If [PreviousGlobalExtensionStatus]=2
	Private inbound call	Sum([PreviousDuration]) If [PreviousGlobalExtensionStatus]=3
	Private outbound call	Sum([PreviousDuration]) If [PreviousGlobalExtensionStatus]=4
	Presentation of inbound calls (Reserved)	Sum([PreviousDuration]) If [PreviousGlobalExtensionStatus]=5
	Presentation of outbound calls (Reserved)	Sum([PreviousDuration]) If [PreviousGlobalExtensionStatus]=6
	Incoming call on hold	Sum([PreviousDuration]) If [PreviousGlobalExtensionStatus]=7
	Outbound call on hold	Sum([PreviousDuration]) If [PreviousGlobalExtensionStatus]=8
Work duration		Sum([PreviousDuration]) (total duration of connected statuses above)
Forced disconnections		Sum([NewForcedChange]) If [PreviousActivity]=0
Forced ready		Sum([NewForcedChange]) If [PreviousActivity]<>1 and [PreviousActivity]<>2 and [NewActivity]<>1

Example of "Agents global status (details)":

Agents global status (details)

Period : from 07-janv-04 to 07-janv-04
Time : from 00:00 to 23:59
Agents: Alain

SNCF

M7480 report: 'Agents global status (details)'

Ident. of agent : Alain

mercredi 7 janvier 2004

Time	End	Status	Extensions status	Activity	Activity code	Duration	Observations
7/01/2004 16:01:52	16:30:59	Logout	Idle	Ready	-	0:29:07	-
7/01/2004 16:30:59	16:31:04	Login	Idle	Ready	-	0:00:05	-
7/01/2004 16:31:04	16:31:07	Login	Inbound calls presentation	Ready	-	0:00:03	-
7/01/2004 16:31:07	16:31:22	Login	Inbound Calls (DCP)	Ready	-	0:00:15	-
7/01/2004 16:31:22	16:31:25	Login	Hold inbound calls	Ready	-	0:00:03	-
7/01/2004 16:31:25	16:31:27	Login	Inbound Calls (DCP)	Ready	-	0:00:02	-
7/01/2004 16:31:27	16:31:27	Login	Idle	Ready	-	0:00:00	-
7/01/2004 16:31:27	16:31:30	Login	Idle	Break	-	0:00:03	-
7/01/2004 16:31:30	16:31:44	Login	Idle	Not Ready	Animation DPX	0:00:14	-
7/01/2004 16:31:44	16:31:54	Login	Idle	Ready	-	0:00:10	-
7/01/2004 16:31:54	16:32:01	Login	Inbound calls presentation	Ready	-	0:00:07	-
7/01/2004 16:32:01	16:32:22	Login	Inbound Calls (DCP)	Ready	-	0:00:21	-
7/01/2004 16:32:22	16:32:22	Login	Idle	Ready	-	0:00:00	-
7/01/2004 16:32:22	16:32:30	Login	Idle	Break	-	0:00:08	-
7/01/2004 16:32:30	16:32:40	Login	Idle	Ready	-	0:00:10	-
7/01/2004 16:32:40	16:32:40	Login	Idle	Not Ready	Generale	0:00:00	-

Figure 12.30 EXAMPLE OF "AGENTS GLOBAL STATUS (DETAILS)" REPORT (1/3)

M7480 report: 'Agents global status (details)'

Time	End	Status	Extensions status	Activity	Activity code	Duration	Observations
Summary mercredi 7 janvier 2004							
		Connected		Availibility		0:00:25	
				Not Ready & idle		0:00:14	
				TCP & idle		0:00:00	
				Break & idle		0:00:11	
				Inbound calls (DCP)		0:00:38	
				Outbound calls (DCP)		0:00:00	
				Private inbound call		0:00:00	
				Private outbound call		0:00:00	
				Inbound calls presentation (reserved)		0:00:10	
				Outbound calls presentation (reserved)		0:00:00	
				Inbound call on hold		0:00:03	
				Outbound call on hold		0:00:00	
		Work duration				0:01:41	
		Forced logout				0	
		Forced ready				0	
Summary of Alain							
		Connected		Availibility		0:00:25	
				Not Ready & idle		0:00:14	
				TCP & idle		0:00:00	
				Break & idle		0:00:11	
				Inbound calls (DCP)		0:00:38	
				Outbound calls (DCP)		0:00:00	
				Private inbound call		0:00:00	
				Private outbound call		0:00:00	
				Inbound calls presentation (reserved)		0:00:10	
				Outbound calls presentation (reserved)		0:00:00	
				Inbound call on hold		0:00:03	
				Outbound call on hold		0:00:00	
		Work duration				0:01:41	
		Forced logout				0	
		Forced ready				0	

FIGURE 12.30 EXAMPLE OF "AGENTS GLOBAL STATUS (DETAILS)" REPORT (2/3)

M7480 report: 'Agents global status (details)'

Time	End	Status	Extensions status	Activity	Activity code	Duration	Observations
General summary							
		Connected		Availibility		0:00:25	
				Not Ready & idle		0:00:14	
				TCP & idle		0:00:00	
				Break & idle		0:00:11	
				Inbound calls (DCP)		0:00:38	
				Outbound calls (DCP)		0:00:00	
				Private inbound call		0:00:00	
				Private outbound call		0:00:00	
				Inbound calls presentation (reserved)		0:00:10	
				Outbound calls presentation (reserved)		0:00:00	
				Inbound call on hold		0:00:03	
				Outbound call on hold		0:00:00	
		Work duration				0:01:41	
		Forced logout				0	
		Forced ready				0	

FIGURE 12.30 EXAMPLE OF "AGENTS GLOBAL STATUS (DETAILS)" REPORT (3/3)

12.2.3.19 PREDEFINED REPORT "PRIVATE CALLS PER AGENT"

12.2.3.19.1 General principle

The end of a call not belonging to any outgoing service (ServiceID='') results in the backing up of some statistical data. More particularly, a recording is backed up (or updated) in the consolidated "CallsPerAgentPerServicePer*" table.

The purpose of the "Private calls per agent" report is to display a summary for each level of precision (precision per quarter of an hour, half hour, hour, day, week and month) for the different calls made and received by the selected agent.

12.2.3.19.2 Content of the report

This report gives the statistics for private incoming and outgoing calls per agent for a given period. These calls are for the agents selected.

the list of agents that can be selected consists of the agents defined in the system. This list may also include agents deleted from the system.

Agents can also be selected by selecting the teams to which these agents belong. In this case, only the current assignment of the agents to teams when the report is printed is taken into account: the assignment and disassignment log is not saved in the statistics.

This selection by team automatically includes agents deleted from the system, but who were part of these teams when they were deleted.

This report contains, for each period of time (depending on the accuracy : per quarter hour, half hour, hour, day, week, or month) during which calls were made :

- The start date or time for this period of time
- The number of incoming private calls answered
- The number of outgoing private calls
- The number of private calls
- The average duration of incoming private calls answered
- The total duration of incoming private calls answered
- The average duration of outgoing private calls
- The total duration of outgoing private calls
- The total duration of private calls

According to the precision chosen, a daily summary (precision per quarter hour, half hour, and hour), monthly (precision per day and week) or annual (precision per month).

A summary by team (if selection by team is selected), by agent and a full summary are also displayed.

When the selection concerns non-separate teams, an agent belonging to several teams is only considered once in the general report summary. In this case, the values calculated in the general summary are not based on summaries per team, but rather on data per individual agent.

The data on which this report is based is contained in the 'CallsPerAgentPerService*' tables in the 'LongTermStatistics.mdb' database.

Moreover, team selection uses the data present in the "Teams" table of the "LongTermReporting.mdb" database. This table reflects the current link between the services, agents and teams defined within the system.

12.2.3.19.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the " CallsPerAgentPerServicePer*" table (see Section 12.3.3.18).

Tableau 12.44

Labels	Formula
Agent	AgentId
Begin	BeginTime
Answered incoming calls	NbrInboundCallsAnswered

Tableau 12.44

Outgoing calls	NbrOutboundCalls
Total	NbrInboundCallsAnswered + NbrOutboundCalls
Conversation duration (inbound).	
Average	TotalConversationDurationInboundCalls / NbrInboundCallsAnswered
Total	TotalConversationDurationInboundCalls
Conversation duration (outbound).	
Average	TotalConversationDurationOutboundCalls / NbrOutboundCalls
Total	TotalConversationDurationOutboundCalls
Total conversation duration	TotalConversationDurationInboundCalls + TotalConversationDurationOutboundCalls
Unanswered incoming calls	NbrInboundCallsNotAnswered

Summary

The labels that appear in the summary group together the data available in the detailed section in the corresponding precision level.

Tableau 12.45

Labels	Formula
Answered incoming calls	Sum(NbrInboundCallsAnswered)
Outgoing calls	Sum(NbrOutboundCalls)
Total	Sum(NbrInboundCallsAnswered) + Sum(NbrOutboundCalls)
Conversation duration (inbound).	
Average	Sum(TotalConversationDurationInboundCalls) / Sum(NbrInboundCallsAnswered)
Total	Sum(TotalConversationDurationInboundCalls)
Conversation duration (outbound).	
Average	Sum(TotalConversationDurationOutboundCalls) / Sum(NbrOutboundCalls)
Total	Sum(TotalConversationDurationOutboundCalls)
Total conversation duration	Sum(TotalConversationDurationInboundCalls) + Sum(TotalConversationDurationOutboundCalls)
Unanswered incoming calls	Sum(NbrInboundCallsNotAnswered)

Sample report "Private calls per agent", precision per quarter hour:

Selection by agent

Private voice calls per agent

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Agent: Joseph
Precision per quarter hour

M7480 report — Private voice calls per agent

Beginning	Answered inbound calls	Outbound calls	Total	Conversation duration (inbound) Average	Conversation duration (inbound) Total	Conversation duration (outbound) Average	Conversation duration (outbound) Total	Total conversation duration	Not answered inbound calls
Ident. of agent: Joseph									
06 October 2003									
09:30	2	1	3	0:05:00	0:10:01	0:00:03	0:00:03	0:10:04	0
09:45	1	1	2	0:00:35	0:00:35	0:00:10	0:00:10	0:00:45	0
Summary 06 October 2003									
	3	2	5	0:03:32	0:10:36	0:00:06	0:00:13	0:10:49	0
07 October 2003									
09:45	1	1	2	0:00:21	0:00:21	0:00:06	0:00:06	0:00:27	2
Summary 07 October 2003									
	1	1	2	0:00:21	0:00:21	0:00:06	0:00:06	0:00:27	2
08 October 2003									
10:30	3	2	5	0:01:21	0:04:03	0:00:07	0:00:14	0:04:17	0
Summary 08 October 2003									
	3	2	5	0:01:21	0:04:03	0:00:07	0:00:14	0:04:17	0

09 October 2003 — Page 1-2

Figure 12.31 EXAMPLE OF "PRIVATE CALLS PER AGENT" REPORT - SELECTION BY AGENT (1/2)

M7480 report — Private voice calls per agent

Beginning	Answered inbound calls	Outbound calls	Total	Conversation duration (inbound) Average	Conversation duration (inbound) Total	Conversation duration (outbound) Average	Conversation duration (outbound) Total	Total conversation duration	Not answered inbound calls
Summary of Joseph									
	7	5	12	0:02:09	0:15:00	0:00:07	0:00:33	0:15:33	2
General summary									
	7	5	12	0:02:09	0:15:00	0:00:07	0:00:33	0:15:33	2

09 October 2003 — Page 2-2

FIGURE 12.31 EXAMPLE OF "PRIVATE CALLS PER AGENT" REPORT - SELECTION BY AGENT (2/2)

Selection by team

Private voice calls per agent

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Teams: Equipe1, Equipe2
Precision per quarter hour

M7480 report — Private voice calls per agent

Beginning	Answered inbound calls	Outbound calls	Total	Conversation duration (inbound) Average	Conversation duration (inbound) Total	Conversation duration (outbound) Average	Conversation duration (outbound) Total	Total conversation duration	Not answered inbound calls
Ident. of team: Equipe1									
Ident. of agent: Joseph									
06 October 2003									
09:30	2	1	3	0:05:00	0:10:01	0:00:03	0:00:03	0:10:04	0
09:45	1	1	2	0:00:35	0:00:35	0:00:10	0:00:10	0:00:45	0
Summary 06 October 2003									
	3	2	5	0:03:32	0:10:36	0:00:06	0:00:13	0:10:49	0
07 October 2003									
09:45	1	1	2	0:00:21	0:00:21	0:00:06	0:00:06	0:00:27	2
Summary 07 October 2003									
	1	1	2	0:00:21	0:00:21	0:00:06	0:00:06	0:00:27	2
08 October 2003									
10:30	3	2	5	0:01:21	0:04:03	0:00:07	0:00:14	0:04:17	0
Summary 08 October 2003									
	3	2	5	0:01:21	0:04:03	0:00:07	0:00:14	0:04:17	0

09 October 2003 — Page 1-3

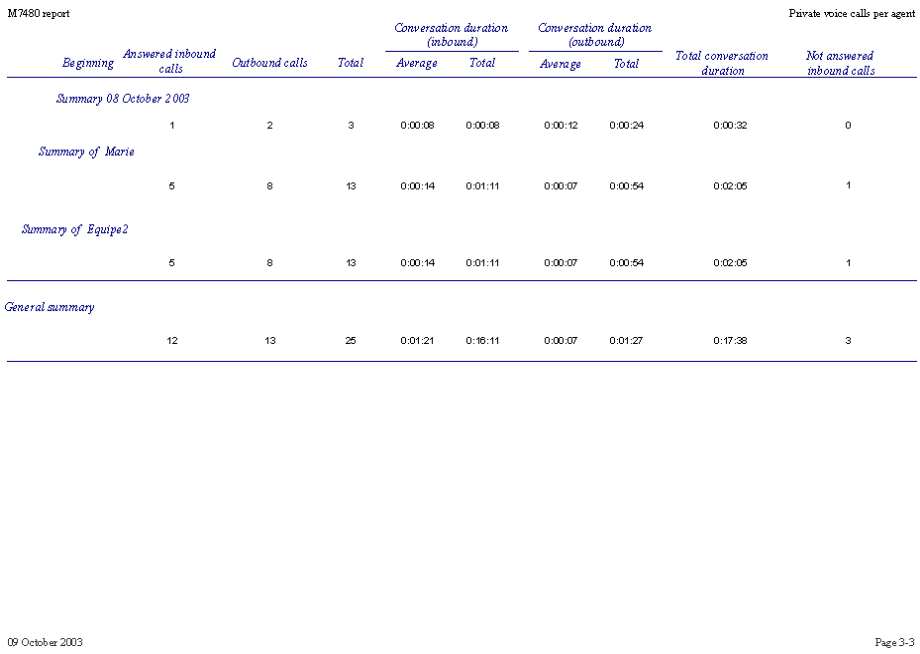
Figure 12.32 EXAMPLE OF "PRIVATE CALLS PER AGENT" REPORT - SELECTION BY TEAM (1/3)

M7480 report — Private voice calls per agent

Beginning	Answered inbound calls	Outbound calls	Total	Conversation duration (inbound) Average	Conversation duration (inbound) Total	Conversation duration (outbound) Average	Conversation duration (outbound) Total	Total conversation duration	Not answered inbound calls
Summary of Joseph									
	7	5	12	0:02:09	0:15:00	0:00:07	0:00:33	0:15:33	2
Summary of Equipe1									
	7	5	12	0:02:09	0:15:00	0:00:07	0:00:33	0:15:33	2
Ident. of team: Equipe2									
Ident. of agent: Marie									
06 October 2003									
09:30	2	1	3	0:00:10	0:00:21	0:00:16	0:00:16	0:00:37	0
09:45	1	2	3	0:00:26	0:00:26	0:00:04	0:00:07	0:00:33	0
Summary 06 October 2003									
	3	3	6	0:00:16	0:00:47	0:00:08	0:00:23	0:01:10	0
07 October 2003									
09:00	0	1	1	0:00:00	0:00:00	0:00:03	0:00:03	0:00:03	0
09:15	0	1	1	0:00:00	0:00:00	0:00:02	0:00:02	0:00:02	0
09:45	1	1	2	0:00:16	0:00:16	0:00:02	0:00:02	0:00:18	1
Summary 07 October 2003									
	1	3	4	0:00:16	0:00:16	0:00:02	0:00:07	0:00:23	1
08 October 2003									
10:30	1	2	3	0:00:08	0:00:08	0:00:12	0:00:24	0:00:32	0

09 October 2003 — Page 2-3

FIGURE 12.32 EXAMPLE OF "PRIVATE CALLS PER AGENT" REPORT - SELECTION BY TEAM (2/3)



M7480 report — Private voice calls per agent

Beginning	Answered inbound calls	Outbound calls	Total	Conversation duration (inbound) Average	Conversation duration (inbound) Total	Conversation duration (outbound) Average	Conversation duration (outbound) Total	Total conversation duration	Not answered inbound calls
Summary 08 October 2003									
	1	2	3	0:00:08	0:00:08	0:00:12	0:00:24	0:00:32	0
Summary of Marie									
	5	8	13	0:00:14	0:01:11	0:00:07	0:00:54	0:02:05	1
Summary of Equipe2									
	5	8	13	0:00:14	0:01:11	0:00:07	0:00:54	0:02:05	1
General summary									
	12	13	25	0:01:21	0:16:11	0:00:07	0:01:27	0:17:38	3

09 October 2003 — Page 3-3

FIGURE 12.32 EXAMPLE OF "PRIVATE CALLS PER AGENT" REPORT - SELECTION BY TEAM (3/3)

12.2.3.20 PREDEFINED REPORT "PRIVATE CALLS PER AGENT (DETAILS)"

12.2.3.20.1 General principle

The end of a call not belonging to any outgoing service (ServiceID='') results in the backing up of some statistical data. More particularly, a recording is backed up in the "VoiceCallsPerAgent" table.

The purpose of the “Private calls per agent (Details)” report is to display these different recordings for each selected agent.

12.2.3.20.2 Content of the report

This report gives the detailed statistics for private calls per agent for a given period. These calls are for the agents selected.

the list of agents that can be selected consists of the agents defined in the system. This list may also include agents deleted from the system.

Agents can also be selected by selecting the teams to which these agents belong. In this case, only the current assignment of the agents to teams when the report is printed is taken into account: the assignment and disassignment log is not saved in the statistics.

This selection by team automatically includes agents deleted from the system, but who were part of these teams when they were deleted.

The report contains :

- The arrival time for a private voice call
- The duration of the private voice call (excluding the ringing time)
- The total duration of the private voice call (the difference between the call start time and end time)
- The type of private voice call (incoming or outgoing)
- The caller number (or name, if available)
- The DNIS called by the caller.

Calls are grouped by team (if selection by team is chosen), by agent and by day. The total, average, and maximum values are computed for each time interval and group.

When the selection concerns non-separate teams, an agent belonging to several teams is only considered once in the general report summary. In this case, the values calculated in the general summary are not based on summaries per team, but rather on data per individual agent.

The data on which this report is based is contained in the 'VoiceCallsPerAgent*' tables in the

'LongTermStatistics.mdb' database.

Moreover, team selection uses the data present in the "Teams" table of the "LongTermReporting.mdb" database. This table reflects the current link between the services, agents and teams defined within the system.

12.2.3.20.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the " VoiceCallsPerAgent" table (see Section 12.3.3.5).

Tableau 12.46

Labels	Formula
Agent	AgentId
Time	CallBeginTime
Conversation	ConversationDuration
Total	TotalDuration
Type	Incoming
CLID	CLID
DNIS	DNIS

Summary

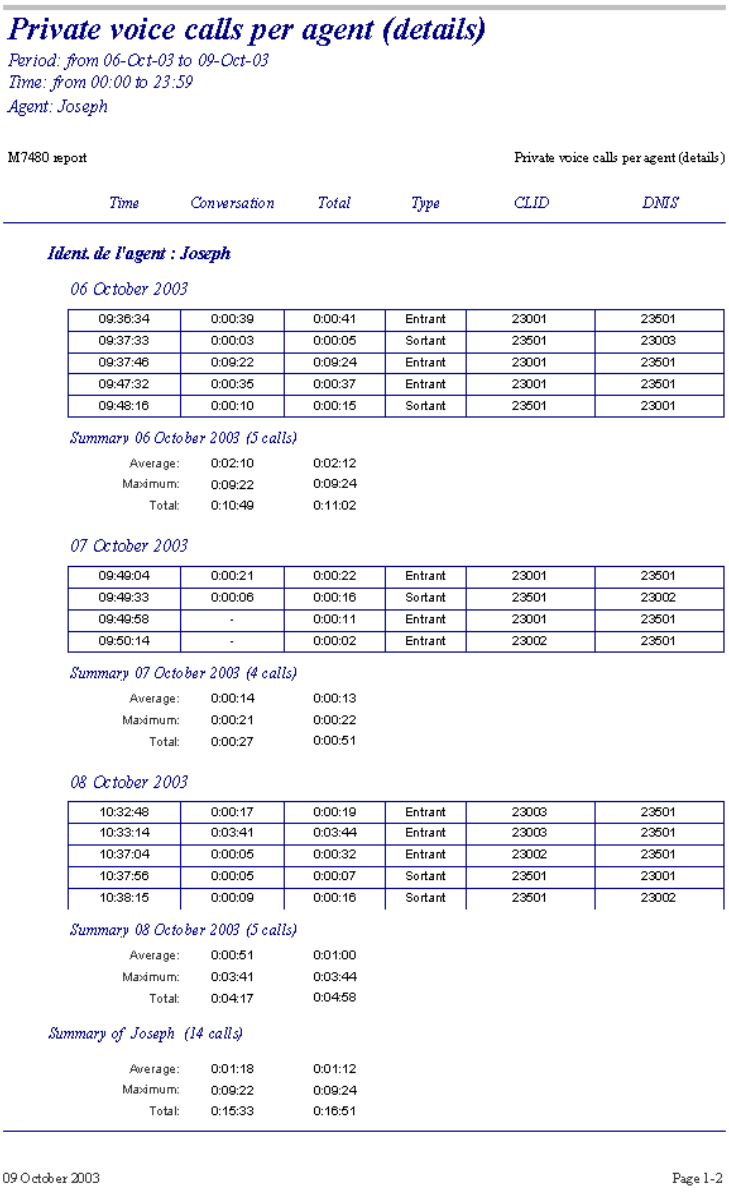
The labels that appear in the summary group together the data available in the corresponding detailed section.

Tableau 12.47

Labels	Formula		
	Average	Maximum	Total
Conversation	Avg(ConversationDuration)	Max(ConversationDuration)	Sum(ConversationDuration)
Total	Avg(TotalDuration)	Max(TotalDuration)	Sum(TotalDuration)
x calls	Count* (of elements in the section)		

Example of "Private calls per agent (details)" report:

Selection by agent



Private voice calls per agent (details)

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Agent: Joseph

M7480 report — Private voice calls per agent (details)

Time	Conversation	Total	Type	CLID	DNIS
Ident. de l'agent : Joseph					
06 October 2003					
09:36:34	0:00:39	0:00:41	Entrant	23001	23501
09:37:33	0:00:03	0:00:05	Sortant	23501	23003
09:37:46	0:09:22	0:09:24	Entrant	23001	23501
09:47:32	0:00:35	0:00:37	Entrant	23001	23501
09:48:16	0:00:10	0:00:15	Sortant	23501	23001
Summary 06 October 2003 (5 calls)					
Average:	0:02:10	0:02:12			
Maximum:	0:09:22	0:09:24			
Total:	0:10:49	0:11:02			
07 October 2003					
09:49:04	0:00:21	0:00:22	Entrant	23001	23501
09:49:33	0:00:06	0:00:16	Sortant	23501	23002
09:49:58	-	0:00:11	Entrant	23001	23501
09:50:14	-	0:00:02	Entrant	23002	23501
Summary 07 October 2003 (4 calls)					
Average:	0:00:14	0:00:13			
Maximum:	0:00:21	0:00:22			
Total:	0:00:27	0:00:51			
08 October 2003					
10:32:48	0:00:17	0:00:19	Entrant	23003	23501
10:33:14	0:03:41	0:03:44	Entrant	23003	23501
10:37:04	0:00:05	0:00:32	Entrant	23002	23501
10:37:56	0:00:05	0:00:07	Sortant	23501	23001
10:38:15	0:00:09	0:00:16	Sortant	23501	23002
Summary 08 October 2003 (5 calls)					
Average:	0:00:51	0:01:00			
Maximum:	0:03:41	0:03:44			
Total:	0:04:17	0:04:58			
Summary of Joseph (14 calls)					
Average:	0:01:18	0:01:12			
Maximum:	0:09:22	0:09:24			
Total:	0:15:33	0:16:51			

09 October 2003 — Page 1-2

Figure 12.33 EXAMPLE OF "PRIVATE CALLS PER AGENT (DETAILS)" REPORT - SELECTION BY AGENT (1/2)

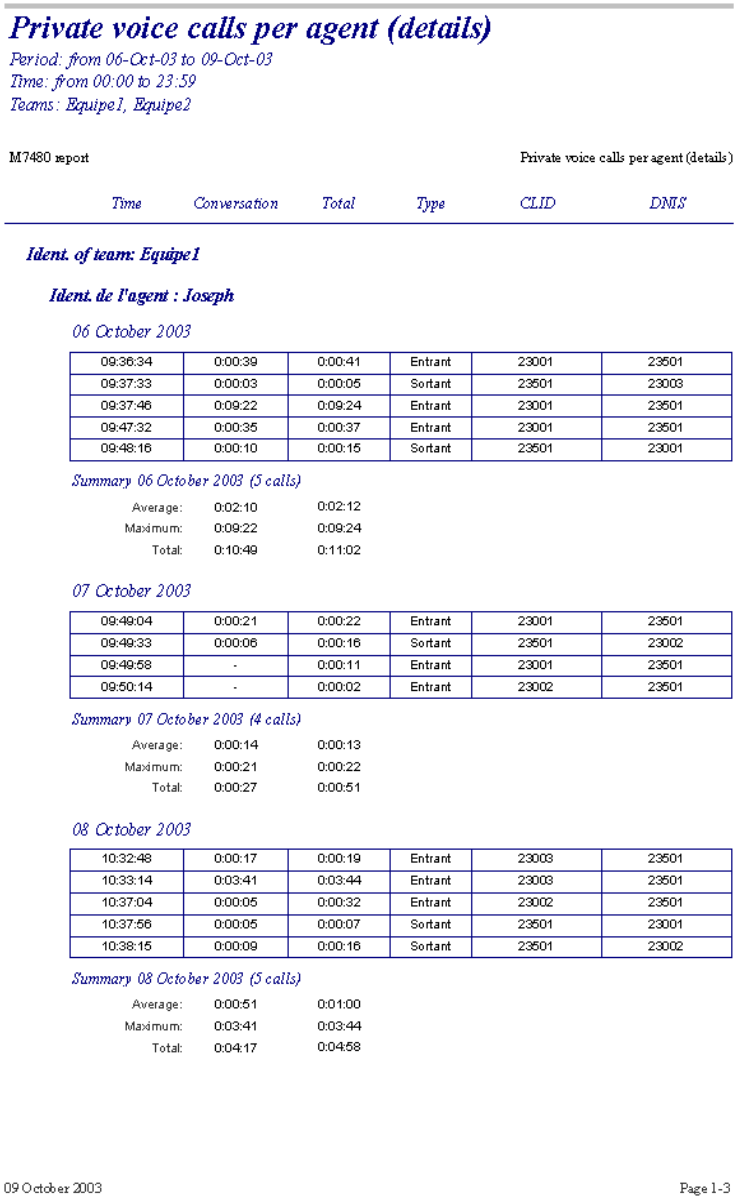
M7480 report — Private voice calls per agent (details)

Time	Conversation	Total	Type	CLID	DNIS
General summary (14 calls)					
Average:	0:01:18	0:01:12			
Maximum:	0:09:22	0:09:24			
Total:	0:15:33	0:16:51			

09 October 2003 — Page 2-2

FIGURE 12.33 EXAMPLE OF "PRIVATE CALLS PER AGENT (DETAILS)" REPORT - SELECTION BY AGENT (2/2)

Selection by team



Private voice calls per agent (details)

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Teams: Equipe1, Equipe2

M7480 report — Private voice calls per agent (details)

Ident. of team: Equipe1

Ident. de l'agent : Joseph

06 October 2003

Time	Conversation	Total	Type	CLID	DNIS
09:36:34	0:00:39	0:00:41	Entrant	23001	23501
09:37:33	0:00:03	0:00:05	Sortant	23501	23003
09:37:46	0:09:22	0:09:24	Entrant	23001	23501
09:47:32	0:00:35	0:00:37	Entrant	23001	23501
09:48:16	0:00:10	0:00:15	Sortant	23501	23001

Summary 06 October 2003 (5 calls)

Average:	0:02:10	0:02:12
Maximum:	0:09:22	0:09:24
Total:	0:10:49	0:11:02

07 October 2003

09:49:04	0:00:21	0:00:22	Entrant	23001	23501
09:49:33	0:00:06	0:00:16	Sortant	23501	23002
09:49:58	-	0:00:11	Entrant	23001	23501
09:50:14	-	0:00:02	Entrant	23002	23501

Summary 07 October 2003 (4 calls)

Average:	0:00:14	0:00:13
Maximum:	0:00:21	0:00:22
Total:	0:00:27	0:00:51

08 October 2003

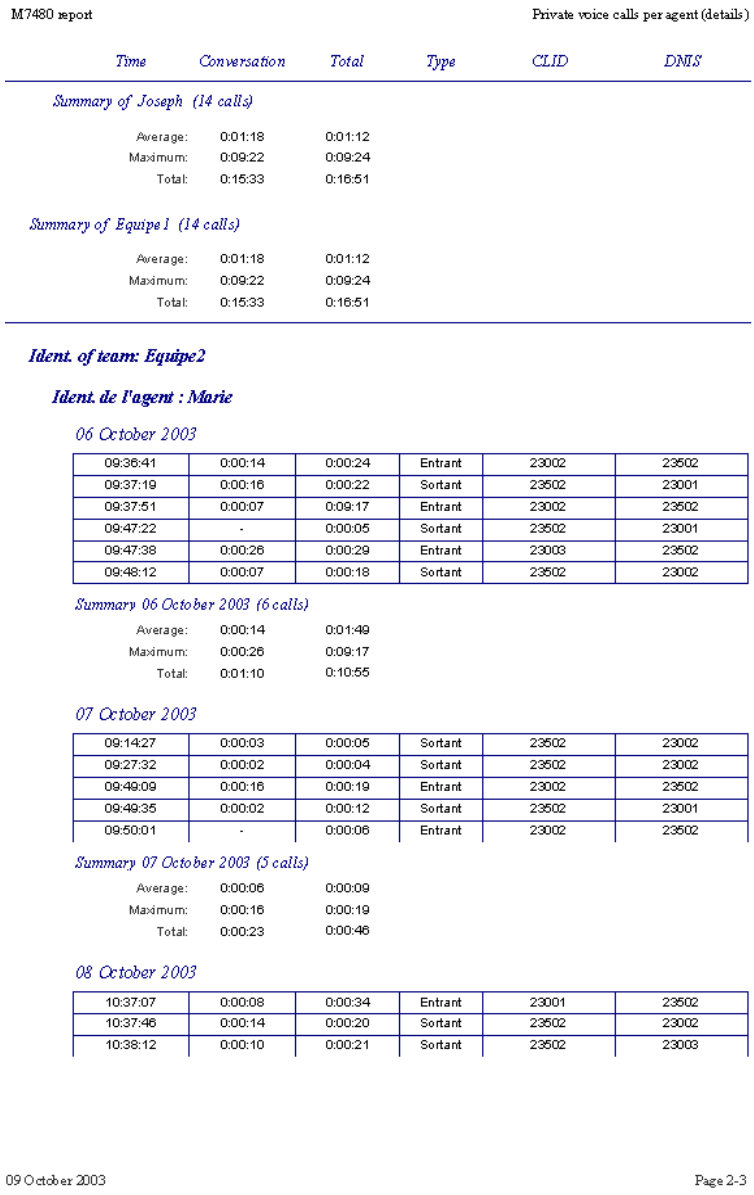
10:32:48	0:00:17	0:00:19	Entrant	23003	23501
10:33:14	0:03:41	0:03:44	Entrant	23003	23501
10:37:04	0:00:05	0:00:32	Entrant	23002	23501
10:37:56	0:00:05	0:00:07	Sortant	23501	23001
10:38:15	0:00:09	0:00:16	Sortant	23501	23002

Summary 08 October 2003 (5 calls)

Average:	0:00:51	0:01:00
Maximum:	0:03:41	0:03:44
Total:	0:04:17	0:04:58

09 October 2003 — Page 1-3

Figure 12.34 EXAMPLE OF "PRIVATE CALLS PER AGENT (DETAILS)" REPORT - SELECTION BY TEAM (1/3)



M7480 report — Private voice calls per agent (details)

Time	Conversation	Total	Type	CLID	DNIS

Summary of Joseph (14 calls)

Average:	0:01:18	0:01:12
Maximum:	0:09:22	0:09:24
Total:	0:15:33	0:16:51

Summary of Equipe1 (14 calls)

Average:	0:01:18	0:01:12
Maximum:	0:09:22	0:09:24
Total:	0:15:33	0:16:51

Ident. of team: Equipe2

Ident. de l'agent : Marie

06 October 2003

09:36:41	0:00:14	0:00:24	Entrant	23002	23502
09:37:19	0:00:16	0:00:22	Sortant	23502	23001
09:37:51	0:00:07	0:09:17	Entrant	23002	23502
09:47:22	-	0:00:05	Sortant	23502	23001
09:47:38	0:00:26	0:00:29	Entrant	23003	23502
09:48:12	0:00:07	0:00:18	Sortant	23502	23002

Summary 06 October 2003 (6 calls)

Average:	0:00:14	0:01:49
Maximum:	0:00:26	0:09:17
Total:	0:01:10	0:10:55

07 October 2003

09:14:27	0:00:03	0:00:05	Sortant	23502	23002
09:27:32	0:00:02	0:00:04	Sortant	23502	23002
09:49:09	0:00:16	0:00:19	Entrant	23002	23502
09:49:35	0:00:02	0:00:12	Sortant	23502	23001
09:50:01	-	0:00:06	Entrant	23002	23502

Summary 07 October 2003 (5 calls)

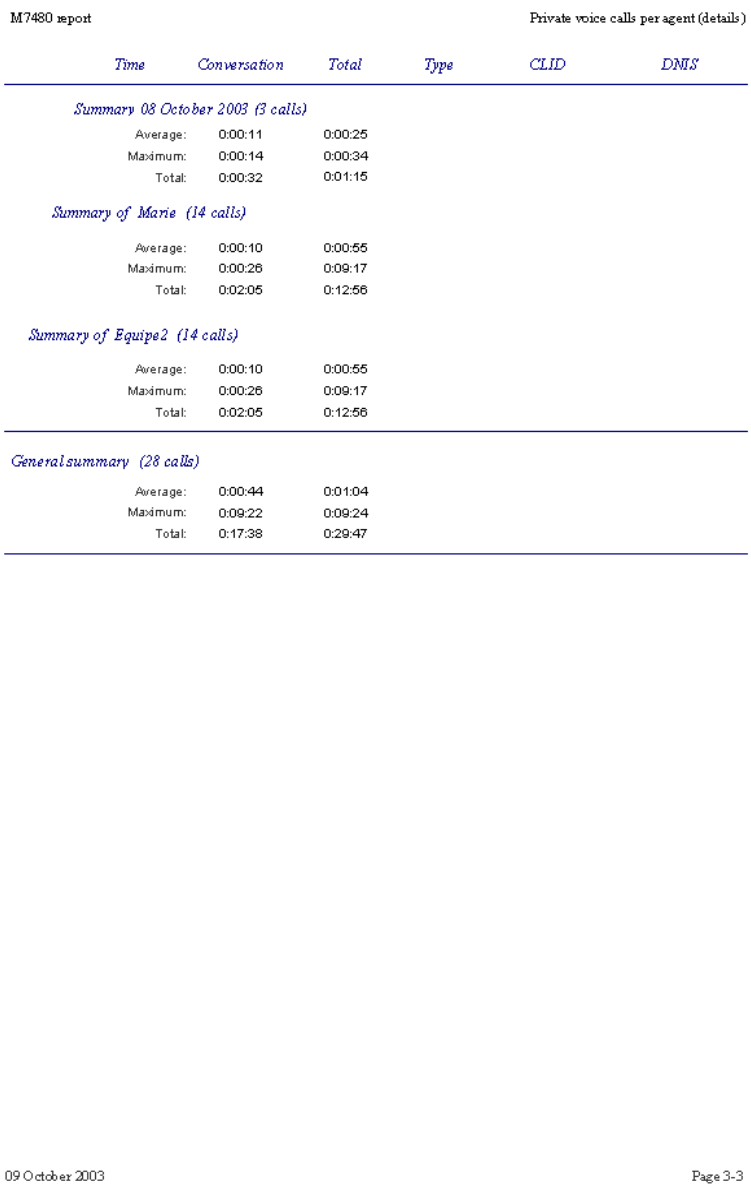
Average:	0:00:06	0:00:09
Maximum:	0:00:16	0:00:19
Total:	0:00:23	0:00:46

08 October 2003

10:37:07	0:00:08	0:00:34	Entrant	23001	23502
10:37:46	0:00:14	0:00:20	Sortant	23502	23002
10:38:12	0:00:10	0:00:21	Sortant	23502	23003

09 October 2003 — Page 2-3

FIGURE 12.34 EXAMPLE OF "PRIVATE CALLS PER AGENT (DETAILS)" REPORT - SELECTION BY TEAM (2/3)



M7480 report — Private voice calls per agent (details)

Time	Conversation	Total	Type	CLID	DNIS
Summary 08 October 2003 (3 calls)					
Average:	0:00:11	0:00:25			
Maximum:	0:00:14	0:00:34			
Total:	0:00:32	0:01:15			
Summary of Marie (14 calls)					
Average:	0:00:10	0:00:55			
Maximum:	0:00:26	0:09:17			
Total:	0:02:05	0:12:56			
Summary of Equipe2 (14 calls)					
Average:	0:00:10	0:00:55			
Maximum:	0:00:26	0:09:17			
Total:	0:02:05	0:12:56			
General summary (28 calls)					
Average:	0:00:44	0:01:04			
Maximum:	0:09:22	0:09:24			
Total:	0:17:38	0:29:47			

FIGURE 12.34 EXAMPLE OF "PRIVATE CALLS PER AGENT (DETAILS)" REPORT - SELECTION BY TEAM (3/3)

12.2.3.21 Predefined "Distributed inbound calls per agent" report

12.2.3.21.1 General principle

The end of a call belonging to an incoming service and distributed to an agent results in the backing up of some statistical data. More particularly, a recording is backed up (or updated) in the consolidated "CallsPerAgentPerServicePer*" and "AgentCallsDurationsPer*" tables.

The purpose of the "Distributed incoming calls per agent" report is to display a summary for each level of precision (precision per quarter of an hour, half hour, hour, day, week and month) for the different calls received by agents in the selected incoming service.

12.2.3.21.2 Content of the report

This report shows consolidated statistics concerning incoming calls distributed to agents and answered by them, per agent for a given period. The report displays the calls belonging to a particular Service an agents chosen.

the list of agents that can be selected consists of the agents defined in the system. This list may also include

agents deleted from the system.

Agents can also be selected by selecting the teams to which these agents belong. In this case, only the current assignment of the agents to teams when the report is printed is taken into account: the assignment and disassignment log is not saved in the statistics.

This selection by team automatically includes agents deleted from the system, but who were part of these teams when they were deleted.

This report contains, for each period of time (depending on the accuracy : per quarter hour, half hour, hour, day, week, or month) during which calls were answered by agents:

- The start date or time for this period
- The number of answered calls
- The number of unanswered calls
- The average presentation time before answer
- number of calls with a waiting duration less than a value X before being answered,
- The number of calls whose wait time before answer is between values X and Y
- The number of calls whose presentation time before answer is above a value Y
- The average conversation time
- The total conversation time
- The maximum conversation duration
- The number of calls put on hold
- The total on hold time
- The number of calls transferred by the agent to another agent.

Depending on the precision chosen, a daily summary (precision per quarter hour, half hour, and hour), monthly (precision per day and week) or annual (precision per month) may be provided. A summary by agent and a full summary by team (if selection by team is chosen) are also displayed.

When the selection concerns non-separate teams, an agent belonging to several teams is only considered once in the general report summary. In this case, the values calculated in the general summary are not based on summaries per team, but rather on data per individual agent.

The data on which this report is based is contained in the 'CallsPerAgentPerService*' and "AgentCallsDurations*" tables in the 'LongTermStatistics.mdb' database.

Moreover, team selection uses the data present in the "Teams" table of the "LongTermReporting.mdb" database. This table reflects the current link between the services, agents and teams defined within the system.

12.2.3.21.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the "CallsPerAgentPerServicePer*" and "AgentCallsDurationsPer*" tables (see Sections 12.3.3.18 and 12.3.3.19).

The choice of parameters with thresholds is made while editing the corresponding report.

Tableau 12.48

Labels	Formula
Department	ServiceID
Filter	FilterID
Begin	BeginTime
Answered	NbrInboundCallsAnswered
Not answered	NbrInboundCallsNotAnswered
Average presentation time	TotalRingingDurationAnsweredCalls / NbrInboundCallsAnswered
Answered calls (threshold)	

Tableau 12.48

Number	< x1	NbrCallsAnsweredRingingDuration	UpperBound <= x1 and UpperBound<>0
	x1 < x < x2		LowerBound>= x1 and UpperBound<=x2 and UpperBound<>0
	> x2		UpperBound >= x2
Conversation duration.			
Average		TotalConversationDurationInboundCalls / NbrInboundCallsAnswered	
Maximum		MaxConversationDurationInboundCalls	
Total		TotalConversationDurationInboundCalls	
Calls on hold			
Number		NbrInboundCallsPutOnHold	
Total time		TotalHoldDurationInboundCalls	
Calls transferred to agent		NbrInboundCallsTransferredToAgent	

Summary

The labels that appear in the summary group together the data available in the detailed section in the corresponding precision level.

Tableau 12.49

Labels		Formula	
Answered		Sum(NbrInboundCallsAnswered)	
Not answered		Sum(NbrInboundCallsNotAnswered)	
Average presentation time		Sum(TotalRingingDurationAnsweredCalls) / Sum(NbrInboundCallsAnswered)	
Answered calls (threshold)			
Number	< x1	Sum(NbrCallsAnsweredRingingDuration)	UpperBound <= x1 and UpperBound<>0
	x1 < x < x2		LowerBound>= x1 and UpperBound<=x2 and UpperBound<>0
	> x2		UpperBound >= x2
Conversation duration.			
Average		Sum(TotalConversationDurationInboundCalls) / Sum(NbrInboundCallsAnswered)	
Maximum		Max(MaxConversationDurationInboundCalls)	
Total		Sum(TotalConversationDurationInboundCalls)	
Calls on hold			
Number		Sum(NbrInboundCallsPutOnHold)	
Total time		Sum(TotalHoldDurationInboundCalls)	

Tableau 12.49

Calls transferred to agent	Sum(NbrInboundCallsTransferredToAgent)

Example of "Inbound distributed calls answered by agent" report (precision per hour):

Selection by agent

Distributed inbound voice calls per agent

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: Support
Agent: Joseph
Precision per quarter hour

M7480 report — Distributed inbound voice calls per agent

Beginning	Answered	Not answered	Average ringing duration	Answered calls (threshold) <=2s	2s<x<=4s	>4s	Conversation duration Average	Maximum	Total	Calls put on hold Number	Total duration	Calls transferred by agent
Ident. of agent: Joseph												
06 October 2003												
09:00	2	3	0:00:06	0	0	2	0:05:13	0:09:33	0:10:26	2	0:01:01	0
09:15	1	0	0:00:10	0	0	1	0:00:31	0:00:31	0:00:31	0	0:00:00	0
Summary 06 October 2003												
	3	3	0:00:08	0	0	3	0:03:39	0:09:33	0:10:57	2	0:01:01	0
07 October 2003												
09:30	1	3	0:00:07	0	0	1	0:00:14	0:00:14	0:00:14	0	0:00:00	0
Summary 07 October 2003												
	1	3	0:00:07	0	0	1	0:00:14	0:00:14	0:00:14	0	0:00:00	0
08 October 2003												
10:15	1	0	0:00:02	1	0	0	0:01:00	0:01:00	0:01:00	0	0:00:00	0
Summary 08 October 2003												
	1	0	0:00:02	1	0	0	0:01:00	0:01:00	0:01:00	0	0:00:00	0

09 October 2003 — Page 1-2

Figure 12.35 EXAMPLE OF "DISTRIBUTED INBOUND CALLS PER AGENT" REPORT - SELECTION BY AGENT (1/2)

M7480 report — Distributed inbound voice calls per agent

Beginning	Answered	Not answered	Average ringing duration	Answered calls (threshold) <=2s	2s<x<=4s	>4s	Conversation duration Average	Maximum	Total	Calls put on hold Number	Total duration	Calls transferred by agent
Summary of Joseph												
	5	6	0:00:06	1	0	4	0:02:26	0:09:33	0:12:11	2	0:01:01	0
General summary												
	5	6	0:00:06	1	0	4	0:02:26	0:09:33	0:12:11	2	0:01:01	0

09 October 2003 — Page 2-2

FIGURE 12.35 EXAMPLE OF "DISTRIBUTED INBOUND CALLS PER AGENT" REPORT - SELECTION BY AGENT (2/2)

Selection by team

Distributed inbound voice calls per agent

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: Support
Teams: Equipe1, Equipe2
Precision per quarter hour

M7480 report — Distributed inbound voice calls per agent

Beginning	Answered	Not answered	Average ringing duration	Answered calls (threshold) <=2s	2s<x<=4s	>4s	Conversation duration Average	Maximum	Total	Calls put on hold Number	Total duration	Calls transferred by agent
Ident. of team: Equipe1												
Ident. of agent: Joseph												
06 October 2003												
09:00	2	3	0:00:06	0	0	2	0:05:13	0:09:33	0:10:26	2	0:01:01	0
09:15	1	0	0:00:10	0	0	1	0:00:31	0:00:31	0:00:31	0	0:00:00	0
Summary 06 October 2003												
	3	3	0:00:08	0	0	3	0:03:39	0:09:33	0:10:57	2	0:01:01	0
07 October 2003												
09:30	1	3	0:00:07	0	0	1	0:00:14	0:00:14	0:00:14	0	0:00:00	0
Summary 07 October 2003												
	1	3	0:00:07	0	0	1	0:00:14	0:00:14	0:00:14	0	0:00:00	0
08 October 2003												
10:15	1	0	0:00:02	1	0	0	0:01:00	0:01:00	0:01:00	0	0:00:00	0
Summary 08 October 2003												
	1	0	0:00:02	1	0	0	0:01:00	0:01:00	0:01:00	0	0:00:00	0

09 October 2003 — Page 1-3

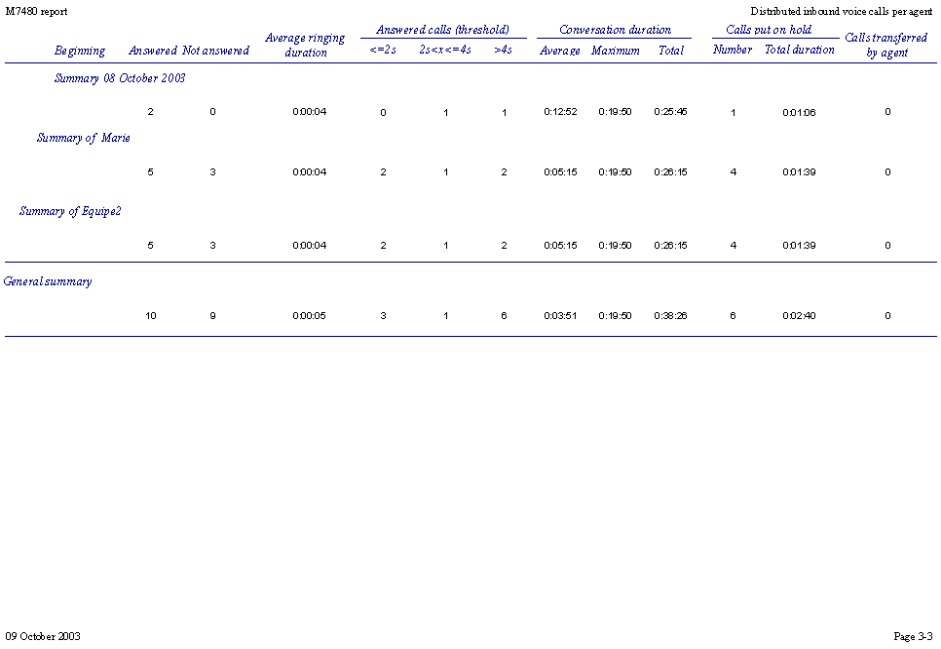
Figure 12.36 EXAMPLE OF "DISTRIBUTED INBOUND CALLS PER AGENT" REPORT - SELECTION BY TEAM (1/3)

M7480 report — Distributed inbound voice calls per agent

Beginning	Answered	Not answered	Average ringing duration	Answered calls (threshold) <=2s	2s<x<=4s	>4s	Conversation duration Average	Maximum	Total	Calls put on hold Number	Total duration	Calls transferred by agent
Summary of Joseph												
	5	6	0:00:06	1	0	4	0:02:26	0:09:33	0:12:11	2	0:01:01	0
Summary of Equipe1												
	5	6	0:00:06	1	0	4	0:02:26	0:09:33	0:12:11	2	0:01:01	0
Ident. of team: Equipe2												
Ident. of agent: Marie												
06 October 2003												
09:00	1	2	0:00:01	1	0	0	0:00:10	0:00:10	0:00:10	1	0:00:04	0
09:15	1	0	0:00:02	1	0	0	0:00:06	0:00:06	0:00:06	1	0:00:13	0
Summary 06 October 2003												
	2	2	0:00:02	2	0	0	0:00:08	0:00:10	0:00:16	2	0:00:17	0
07 October 2003												
09:30	1	1	0:00:06	0	0	1	0:00:14	0:00:14	0:00:14	1	0:00:16	0
Summary 07 October 2003												
	1	1	0:00:06	0	0	1	0:00:14	0:00:14	0:00:14	1	0:00:16	0
08 October 2003												
10:15	1	0	0:00:05	0	0	1	0:05:55	0:05:55	0:05:55	1	0:01:06	0
10:30	1	0	0:00:04	0	1	0	0:19:50	0:19:50	0:19:50	0	0:00:00	0

09 October 2003 — Page 2-3

FIGURE 12.36 EXAMPLE OF "DISTRIBUTED INBOUND CALLS PER AGENT" REPORT - SELECTION BY TEAM (2/3)



M7480 report — Distributed inbound voice calls per agent

Beginning	Answered	Not answered	Average ringing duration	Answered calls (threshold) <=2s	2s<x<=4s	>4s	Conversation duration Average	Maximum	Total	Calls put on hold Number	Total duration	Calls transferred by agent
Summary 08 October 2003												
	2	0	0:00:04	0	1	1	0:12:52	0:19:50	0:25:45	1	0:01:06	0
Summary of Marie												
	5	3	0:00:04	2	1	2	0:05:15	0:19:50	0:26:15	4	0:01:39	0
Summary of Equipe2												
	5	3	0:00:04	2	1	2	0:05:15	0:19:50	0:26:15	4	0:01:39	0
General summary												
	10	9	0:00:05	3	1	6	0:03:51	0:19:50	0:38:26	6	0:02:40	0

09 October 2003 — Page 3-3

FIGURE 12.36 EXAMPLE OF "DISTRIBUTED INBOUND CALLS PER AGENT" REPORT - SELECTION BY TEAM (3/3)

12.2.3.22 PREDEFINED "DISTRIBUTED INBOUND CALLS by AGENT (DETAILS)" REPORT

12.2.3.22.1 General principle

The end of a call belonging to an incoming service results in the backing up of some statistical data. More particularly, a recording is backed up in the "VoiceCallsPerAgent" table.

The purpose of the “Distributed calls per agent (Details)” report is to display these different recordings for the service and for each selected agent.

12.2.3.22.2 Content of the report

This report gives the statistics for distributed inbound calls by agent for a given period. These calls are for a particular Service and the agents selected.

the list of agents that can be selected consists of the agents defined in the system. This list may also include agents deleted from the system.

Agents can also be selected by selecting the teams to which these agents belong. In this case, only the current assignment of the agents to teams when the report is printed is taken into account: the assignment and disassignment log is not saved in the statistics.

This selection by team automatically includes agents deleted from the system, but who were part of these teams when they were deleted.

The report contains :

- The call arrival time
- The call duration (excluding the ringing time and the waiting time, but including conferences)
- The on-hold time (call put on hold by the agent).
- The total outgoing call duration (interval between the call start time and end time)
- The transfer destination, if the call has been transferred to the agent.

When the report is edited, an option allows you to replace the number by name if available.

Calls are grouped by team (if selection by team is chosen), by agent and by day. The total, average, and maximum values are computed for each time interval and group.

When the selection concerns non-separate teams, an agent belonging to several teams is only considered once in the general report summary. In this case, the values calculated in the general summary are not based on summaries per team, but rather on data per individual agent.

The data on which this report is based is contained in the 'VoiceCallsPerAgent*' tables in the 'LongTermStatistics.mdb' database.

Moreover, team selection uses the data present in the "Teams" table of the "LongTermReporting.mdb" database. This table reflects the current link between the services, agents and teams defined within the system.

12.2.3.22.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the " VoiceCallsPerAgent" table (see Section 12.3.3.5).

Tableau 12.50

Labels	Formula
Department	ServiceID
Agent	AgentId
Time	CallBeginTime
Ring	RingingDuration
Conversation	ConversationDuration
Hold	HoldDuration
Total	TotalDuration

Tableau 12.50

Transferred to	TransferDestination or (depending on the option, and if available) concatenation of TransferDestinationFirstName and TransferDestinationLastName.

Summary

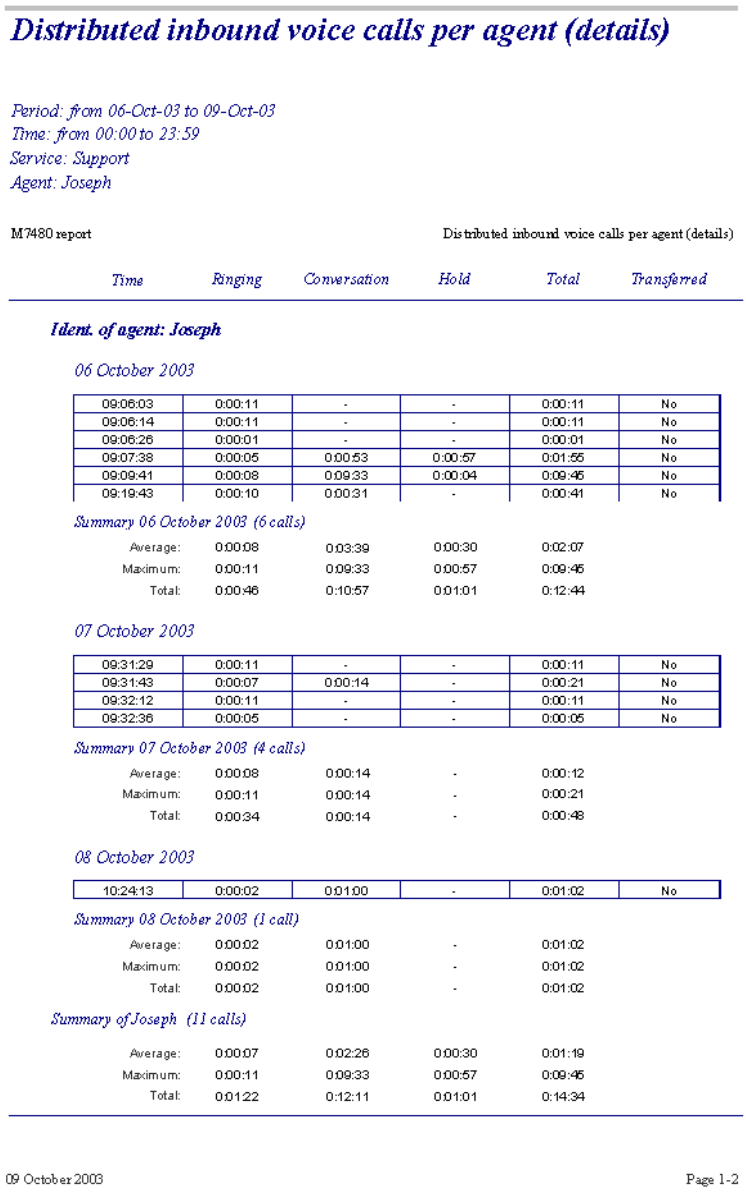
The labels that appear in the summary group together the data available in the corresponding detailed section. The number of calls is also available in the summary header.

Tableau 12.51

Labels	Formula		
	Average	Maximum	Total
Ring	Avg(RingingDuration)	Max(RingingDuration)	Sum(RingingDuration)
Conversation	Avg(ConversationDuration)	Max(ConversationDuration)	Sum(ConversationDuration)
Hold	Avg(HoldDuration)	Max(HoldDuration)	Sum(HoldDuration)
Total	Avg(TotalDuration)	Max(TotalDuration)	Sum(TotalDuration)
x calls	Count* (of elements in the section)		

Example of report "Incoming distributed calls answered by agent (details)":

Selection by agent



Distributed inbound voice calls per agent (details)

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: Support
Agent: Joseph

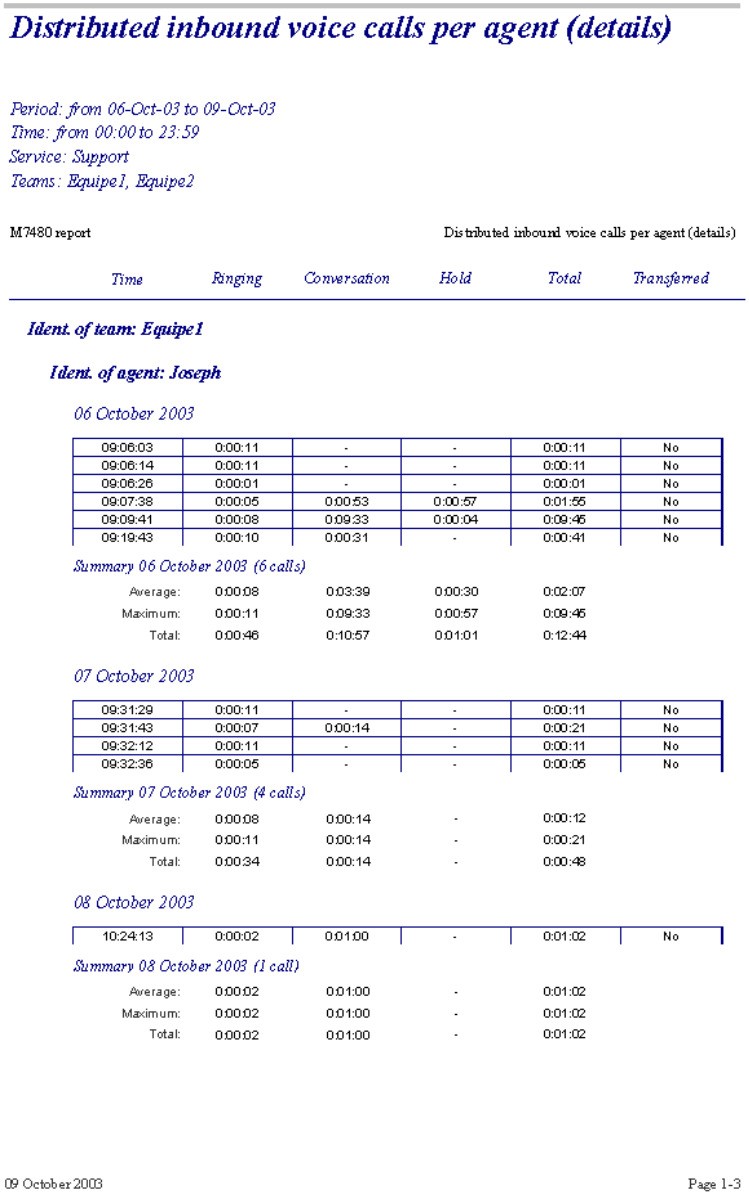
M7480 report — Distributed inbound voice calls per agent (details)

Time	Ringing	Conversation	Hold	Total	Transferred
Ident. of agent: Joseph					
06 October 2003					
09:06:03	0:00:11	-	-	0:00:11	No
09:06:14	0:00:11	-	-	0:00:11	No
09:06:26	0:00:01	-	-	0:00:01	No
09:07:38	0:00:05	0:00:53	0:00:57	0:01:55	No
09:09:41	0:00:08	0:09:33	0:00:04	0:09:45	No
09:19:43	0:00:10	0:00:31	-	0:00:41	No
Summary 06 October 2003 (6 calls)					
Average:	0:00:08	0:03:39	0:00:30	0:02:07	
Maximum:	0:00:11	0:09:33	0:00:57	0:09:45	
Total:	0:00:46	0:10:57	0:01:01	0:12:44	
07 October 2003					
09:31:29	0:00:11	-	-	0:00:11	No
09:31:43	0:00:07	0:00:14	-	0:00:21	No
09:32:12	0:00:11	-	-	0:00:11	No
09:32:36	0:00:05	-	-	0:00:05	No
Summary 07 October 2003 (4 calls)					
Average:	0:00:08	0:00:14	-	0:00:12	
Maximum:	0:00:11	0:00:14	-	0:00:21	
Total:	0:00:34	0:00:14	-	0:00:48	
08 October 2003					
10:24:13	0:00:02	0:01:00	-	0:01:02	No
Summary 08 October 2003 (1 call)					
Average:	0:00:02	0:01:00	-	0:01:02	
Maximum:	0:00:02	0:01:00	-	0:01:02	
Total:	0:00:02	0:01:00	-	0:01:02	
Summary of Joseph (11 calls)					
Average:	0:00:07	0:02:26	0:00:30	0:01:19	
Maximum:	0:00:11	0:09:33	0:00:57	0:09:45	
Total:	0:01:22	0:12:11	0:01:01	0:14:34	

09 October 2003 — Page 1-2

Figure 12.37 EXAMPLE OF "DISTRIBUTED INBOUND CALLS PER AGENT (DETAILS)" REPORT - SELECTION BY AGENT (1/1)

Selection by team



Distributed inbound voice calls per agent (details)

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: Support
Teams: Equipe1, Equipe2

M7480 report — Distributed inbound voice calls per agent (details)

Ident. of team: Equipe1

Ident. of agent: Joseph

06 October 2003

Time	Ringing	Conversation	Hold	Total	Transferred
09:06:03	0:00:11	-	-	0:00:11	No
09:06:14	0:00:11	-	-	0:00:11	No
09:06:26	0:00:01	-	-	0:00:01	No
09:07:38	0:00:05	0:00:53	0:00:57	0:01:55	No
09:09:41	0:00:08	0:09:33	0:00:04	0:09:45	No
09:19:43	0:00:10	0:00:31	-	0:00:41	No

Summary 06 October 2003 (6 calls)

Average:	0:00:08	0:03:39	0:00:30	0:02:07
Maximum:	0:00:11	0:09:33	0:00:57	0:09:45
Total:	0:00:46	0:10:57	0:01:01	0:12:44

07 October 2003

09:31:29	0:00:11	-	-	0:00:11	No
09:31:43	0:00:07	0:00:14	-	0:00:21	No
09:32:12	0:00:11	-	-	0:00:11	No
09:32:36	0:00:05	-	-	0:00:05	No

Summary 07 October 2003 (4 calls)

Average:	0:00:08	0:00:14	-	0:00:12
Maximum:	0:00:11	0:00:14	-	0:00:21
Total:	0:00:34	0:00:14	-	0:00:48

08 October 2003

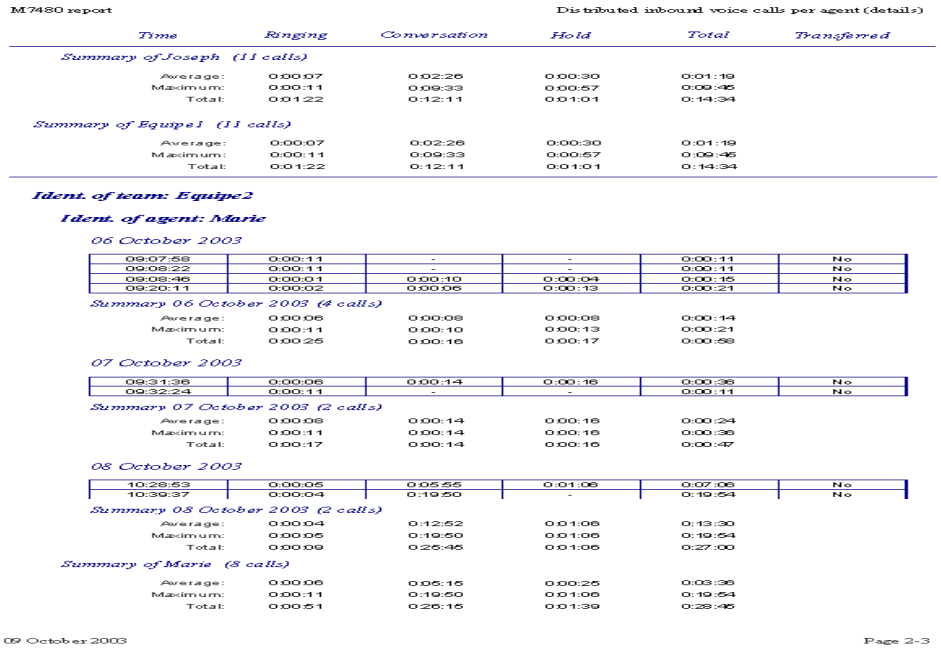
10:24:13	0:00:02	0:01:00	-	0:01:02	No

Summary 08 October 2003 (1 call)

Average:	0:00:02	0:01:00	-	0:01:02
Maximum:	0:00:02	0:01:00	-	0:01:02
Total:	0:00:02	0:01:00	-	0:01:02

09 October 2003 — Page 1-3

Figure 12.38 EXAMPLE OF "DISTRIBUTED INBOUND CALLS PER AGENT (DETAILS)" REPORT - SELECTION BY TEAM (1/2)



M7480 report — Distributed inbound voice calls per agent (details)

Time	Ringing	Conversation	Hold	Total	Transferred
Summary of Joseph (11 calls)					
Average:	0:00:07	0:02:26	0:00:30	0:01:19	
Maximum:	0:00:11	0:09:33	0:00:57	0:09:45	
Total:	0:01:22	0:12:11	0:01:01	0:14:34	
Summary of Equipe1 (11 calls)					
Average:	0:00:07	0:02:26	0:00:30	0:01:19	
Maximum:	0:00:11	0:09:33	0:00:57	0:09:45	
Total:	0:01:22	0:12:11	0:01:01	0:14:34	
Ident. of team: Equipe2					
Ident. of agent: Marie					
06 October 2003					
09:07:58	0:00:11	-	-	0:00:11	No
09:08:22	0:00:11	-	-	0:00:11	No
09:08:46	0:00:01	0:00:10	0:00:04	0:00:15	No
09:20:11	0:00:02	0:00:06	0:00:13	0:00:21	No
Summary 06 October 2003 (4 calls)					
Average:	0:00:06	0:00:08	0:00:08	0:00:14	
Maximum:	0:00:11	0:00:10	0:00:13	0:00:21	
Total:	0:00:25	0:00:16	0:00:17	0:00:58	
07 October 2003					
09:31:38	0:00:06	0:00:14	0:00:16	0:00:36	No
09:32:24	0:00:11	-	-	0:00:11	No
Summary 07 October 2003 (2 calls)					
Average:	0:00:08	0:00:14	0:00:16	0:00:24	
Maximum:	0:00:11	0:00:14	0:00:16	0:00:36	
Total:	0:00:17	0:00:14	0:00:16	0:00:47	
08 October 2003					
10:28:53	0:00:05	0:05:55	0:01:08	0:07:08	No
10:39:37	0:00:04	0:19:50	-	0:19:54	No
Summary 08 October 2003 (2 calls)					
Average:	0:00:04	0:12:52	0:01:08	0:13:30	
Maximum:	0:00:05	0:19:50	0:01:08	0:19:54	
Total:	0:00:09	0:25:46	0:01:08	0:27:00	
Summary of Marie (8 calls)					
Average:	0:00:06	0:05:15	0:00:25	0:03:36	
Maximum:	0:00:11	0:19:50	0:01:08	0:19:54	
Total:	0:00:51	0:26:16	0:01:39	0:28:46	

09 October 2003 — Page 2-3

FIGURE 12.38 EXAMPLE OF "DISTRIBUTED INBOUND CALLS PER AGENT (DETAILS)" REPORT - SELECTION BY TEAM (2/2)

12.2.3.23 PREDEFINED REPORT "PROFESSIONAL OUTBOUND CALLS PER AGENT"

12.2.3.23.1 General principle

The end of a call belonging to an outgoing service and associated with an agent results in the backing up of some statistical data. More particularly, a recording is backed up (or updated) in the consolidated "CallsPerAgentPerServicePer*" table.

The purpose of the "Outgoing professional calls per agent" report is to display a summary for each level of precision (precision per quarter of an hour, half hour, hour, day, week and month) for the different calls made by agents in the selected outgoing service.

12.2.3.23.2 Content of the report

This report gives the consolidated statistics of outgoing professional calls per agent for a given period. These calls are for a particular Service and the agents selected.

the list of agents that can be selected consists of the agents defined in the system. This list may also include agents deleted from the system.

Agents can also be selected by selecting the teams to which these agents belong. In this case, only the current assignment of the agents to teams when the report is printed is taken into account: the assignment and disassignment log is not saved in the statistics.

This selection by team automatically includes agents deleted from the system, but who were part of these teams when they were deleted.

This report contains, for each period of time (depending on the accuracy : per quarter hour, half hour, hour, day, week, or month) during which calls were made :

- The start date or time for this period of time
- The number of outgoing calls initiated during this period
- The average conversation time
- The maximum conversation duration
- The total conversation time
- The number of calls put on hold
- The total on-hold duration.

Depending on the precision chosen, a daily summary (precision per quarter hour, half hour, and hour), monthly (precision per day and week) or annual (precision per month) is given.

A summary by team (if selection by team is selected), by agent and a full summary are also displayed.

When the selection concerns non-separate teams, an agent belonging to several teams is only considered once in the general report summary. In this case, the values calculated in the general summary are not based on summaries per team, but rather on data per individual agent.

The data on which the report is based is contained in the 'CallsPerAgentPerService*" tables in the 'LongTermStatistics.mdb' database.

Moreover, team selection uses the data present in the "Teams" table of the "LongTermReporting.mdb" database. This table reflects the current link between the services, agents and teams defined within the system.

12.2.3.23.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the " CallsPerAgentPerServicePer*" table (see Section 12.3.3.18).

The choice of parameters with thresholds is made while editing the corresponding report.

Tableau 12.52

Labels	Formula
Department	ServiceID
Agent	AgentId
Begin	BeginTime
Outgoing calls	NbrOutboundCalls

Tableau 12.52

Conversation duration.	
Average	TotalConversationDurationOutboundCalls / NbrOutboundCalls
Maximum	MaxConversationDurationOutboundCalls
Total	TotalConversationDurationOutboundCalls
Calls on hold	
Number	NbrOutboundCallsPutOnHold
Total time	TotalHoldDurationOutboundCalls
Number of transferred calls	NbrOutboundCallsTransferredToAgent

Summary

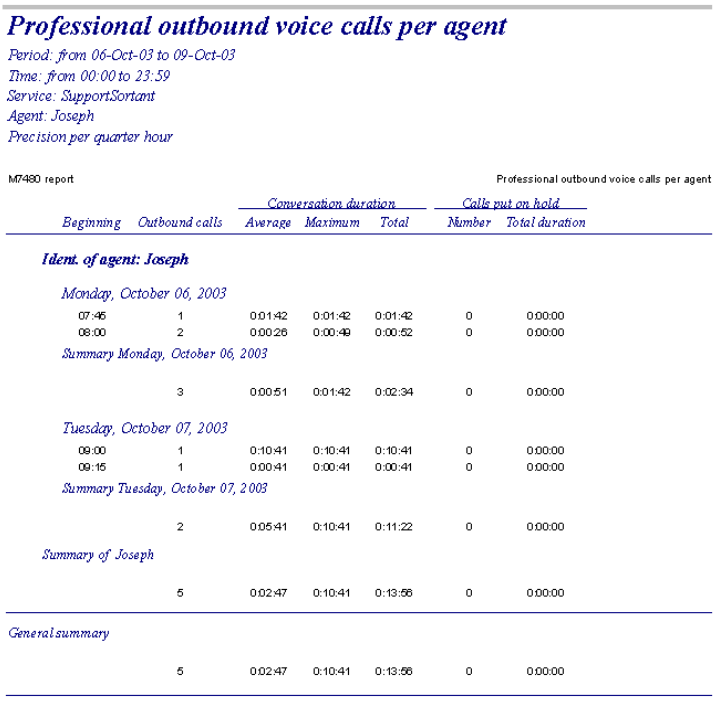
The labels that appear in the summary group together the data available in the detailed section in the corresponding precision level.

Tableau 12.53

Labels	Formula
Outgoing calls	Sum(NbrOutboundCalls)
Conversation duration.	
Average	Sum(TotalConversationDurationOutboundCalls) / Sum(NbrOutboundCalls)
Maximum	Max(MaxConversationDurationOutboundCalls)
Total	Sum(TotalConversationDurationOutboundCalls)
Calls on hold	
Number	Sum(NbrOutboundCallsPutOnHold)
Total duration	Sum(TotalHoldDurationOutboundCalls)
Number of transferred calls	Sum(NbrOutboundCallsTransferredToAgent)

Example report "Professional outbound calls per agent, precision per quarter hour:

Selection by agent



Professional outbound voice calls per agent

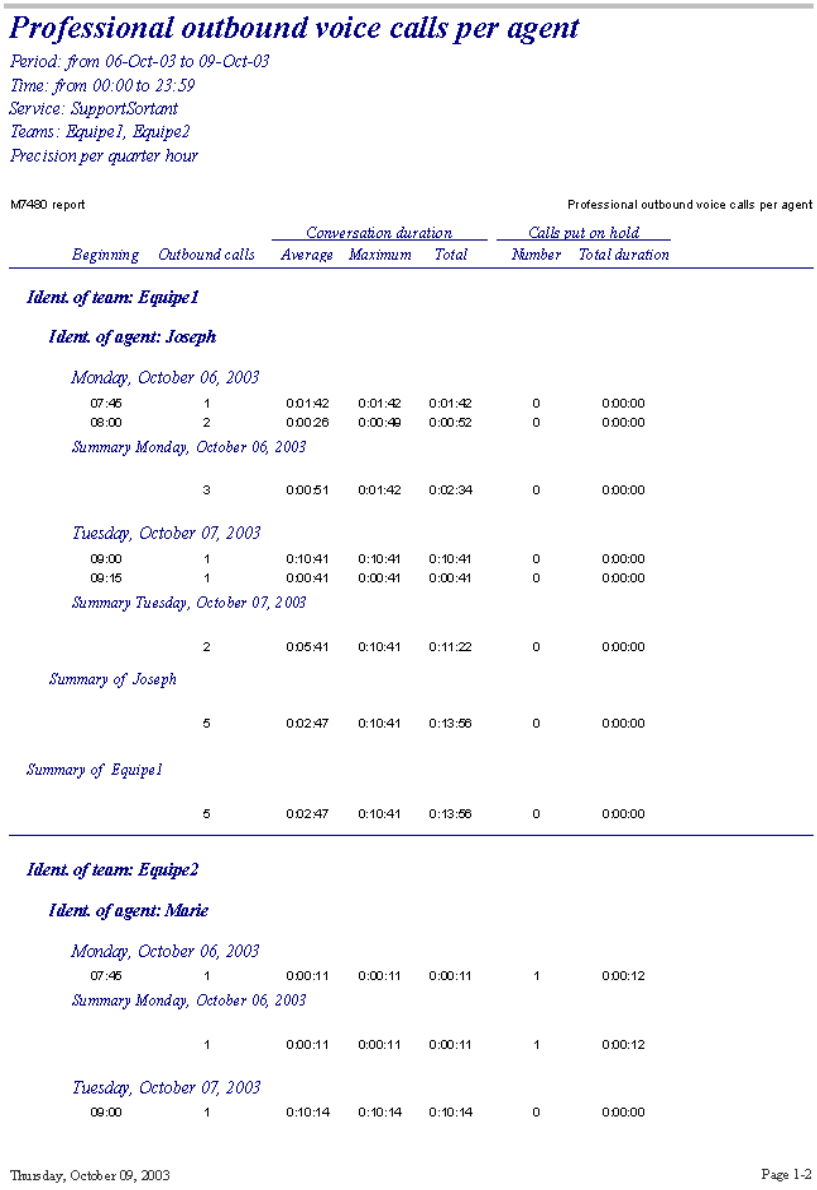
Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: SupportSortant
Agent: Joseph
Precision per quarter hour

M7480 report — Professional outbound voice calls per agent

Beginning	Outbound calls	Conversation duration: Average	Conversation duration: Maximum	Conversation duration: Total	Calls put on hold: Number	Calls put on hold: Total duration
Ident. of agent: Joseph						
Monday, October 06, 2003						
07:45	1	0:01:42	0:01:42	0:01:42	0	0:00:00
08:00	2	0:00:26	0:00:49	0:00:52	0	0:00:00
Summary Monday, October 06, 2003						
	3	0:00:51	0:01:42	0:02:34	0	0:00:00
Tuesday, October 07, 2003						
09:00	1	0:10:41	0:10:41	0:10:41	0	0:00:00
09:15	1	0:00:41	0:00:41	0:00:41	0	0:00:00
Summary Tuesday, October 07, 2003						
	2	0:05:41	0:10:41	0:11:22	0	0:00:00
Summary of Joseph						
	5	0:02:47	0:10:41	0:13:56	0	0:00:00
General summary						
	5	0:02:47	0:10:41	0:13:56	0	0:00:00

Figure 12.39 PREDEFINED "OUTBOUND PROFESSIONAL CALLS PER AGENT" REPORT – SELECTION BY AGENT

Selection by team



Professional outbound voice calls per agent

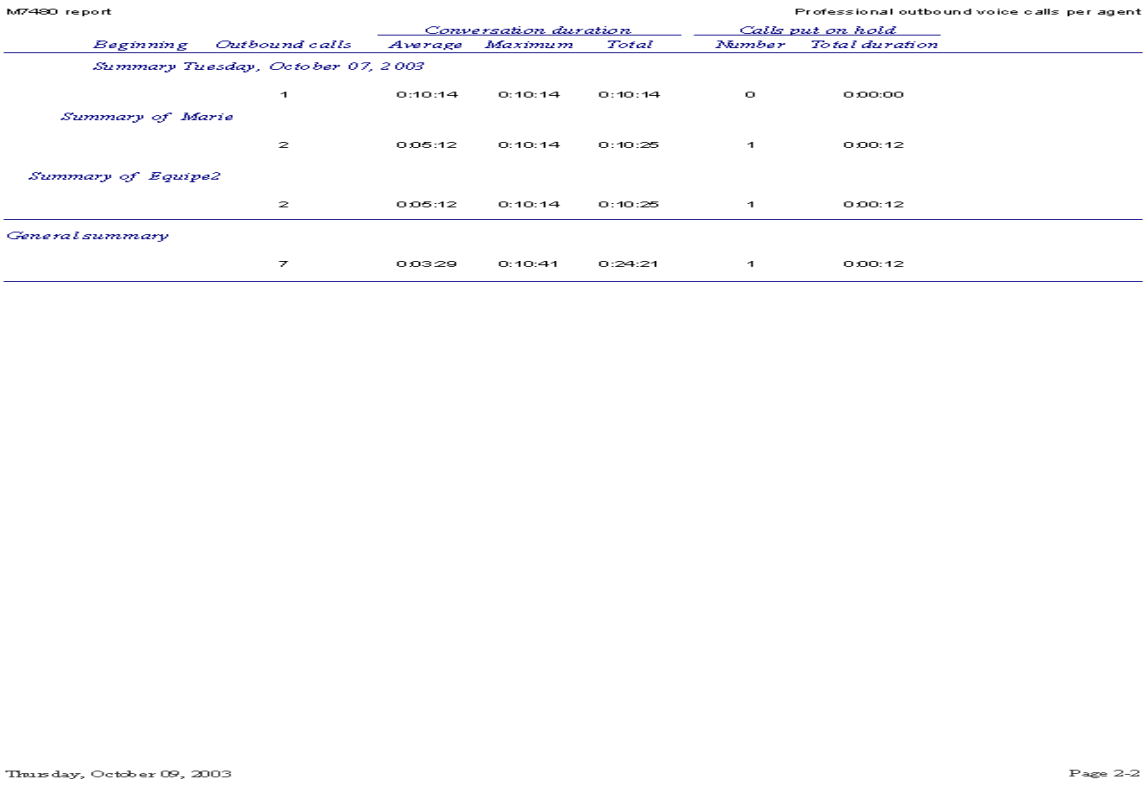
Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: SupportSortant
Teams: Equipe1, Equipe2
Precision per quarter hour

M7480 report — Professional outbound voice calls per agent

Beginning	Outbound calls	Conversation duration: Average	Conversation duration: Maximum	Conversation duration: Total	Calls put on hold: Number	Calls put on hold: Total duration
Ident. of team: Equipe1						
Ident. of agent: Joseph						
Monday, October 06, 2003						
07:45	1	0:01:42	0:01:42	0:01:42	0	0:00:00
08:00	2	0:00:26	0:00:49	0:00:52	0	0:00:00
Summary Monday, October 06, 2003	3	0:00:51	0:01:42	0:02:34	0	0:00:00
Tuesday, October 07, 2003						
09:00	1	0:10:41	0:10:41	0:10:41	0	0:00:00
09:15	1	0:00:41	0:00:41	0:00:41	0	0:00:00
Summary Tuesday, October 07, 2003	2	0:05:41	0:10:41	0:11:22	0	0:00:00
Summary of Joseph	5	0:02:47	0:10:41	0:13:56	0	0:00:00
Summary of Equipe1	5	0:02:47	0:10:41	0:13:56	0	0:00:00
Ident. of team: Equipe2						
Ident. of agent: Marie						
Monday, October 06, 2003						
07:45	1	0:00:11	0:00:11	0:00:11	1	0:00:12
Summary Monday, October 06, 2003	1	0:00:11	0:00:11	0:00:11	1	0:00:12
Tuesday, October 07, 2003						
09:00	1	0:10:14	0:10:14	0:10:14	0	0:00:00

Thursday, October 09, 2003 — Page 1-2

Figure 12.40 EXAMPLE OF "OUTBOUND PROFESSIONAL CALLS PER AGENT" REPORT - SELECTION BY TEAM (1/2)



M7480 report — Professional outbound voice calls per agent

Beginning	Outbound calls	Conversation duration			Calls put on hold	
		Average	Maximum	Total	Number	Total duration
Summary Tuesday, October 07, 2003						
	1	0:10:14	0:10:14	0:10:14	0	0:00:00
Summary of Marie						
	2	0:05:12	0:10:14	0:10:25	1	0:00:12
Summary of Equipe2						
	2	0:05:12	0:10:14	0:10:25	1	0:00:12
General summary						
	7	0:03:29	0:10:41	0:24:21	1	0:00:12

Thursday, October 09, 2003 — Page 2-2

FIGURE 12.40 EXAMPLE OF "OUTBOUND PROFESSIONAL CALLS PER AGENT" REPORT - SELECTION BY TEAM (2/2)

12.2.3.24 PREDEFINED REPORT "PROFESSIONAL OUTBOUND CALLS PER AGENT (DETAILS)"

12.2.3.24.1 General principle

The end of a call belonging to an incoming service results in the backing up of some statistical data. More particularly, a recording is backed up in the "VoiceCallsPerAgent" table.

The purpose of the “Outgoing professional calls per agent (Details)” report is to display these different recordings for the service and for each selected agent.

12.2.3.24.2 Content of the report

This report gives the statistics of outgoing professional calls per agent for a given period. These calls are for a particular Service and the agents selected.

the list of agents that can be selected consists of the agents defined in the system. This list may also include agents deleted from the system.

Agents can also be selected by selecting the teams to which these agents belong. In this case, only the current assignment of the agents to teams when the report is printed is taken into account: the assignment and disassignment log is not saved in the statistics.

This selection by team automatically includes agents deleted from the system, but who were part of these teams when they were deleted.

The report contains :

- The outgoing call initiation time
- The call duration (excluding the on-hold time)
- The on-hold time (call put on hold by the agent)
- The total outgoing call duration (difference between the call start time and end time).

Calls are grouped by team (if selection by team is chosen), by agent and by day. The total, average, and maximum values are computed for each time interval and group.

When the selection concerns non-separate teams, an agent belonging to several teams is only considered once in the general report summary. In this case, the values calculated in the general summary are not based on summaries per team, but rather on data per individual agent.

The data on which this report is based is contained in the 'VoiceCallsPerAgent*' tables in the 'LongTermStatistics.mdb' database.

Moreover, team selection uses the data present in the "Teams" table of the "LongTermReporting.mdb" database. This table reflects the current link between the services, agents and teams defined within the system.

12.2.3.24.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the " VoiceCallsPerAgent" table (see Section 12.3.3.5).

Tableau 12.54

Labels	Formula
Department	ServiceID
Agent	AgentId
Time	CallBeginTime
Conversation	ConversationDuration
Hold	HoldDuration
Total	TotalDuration

Summary

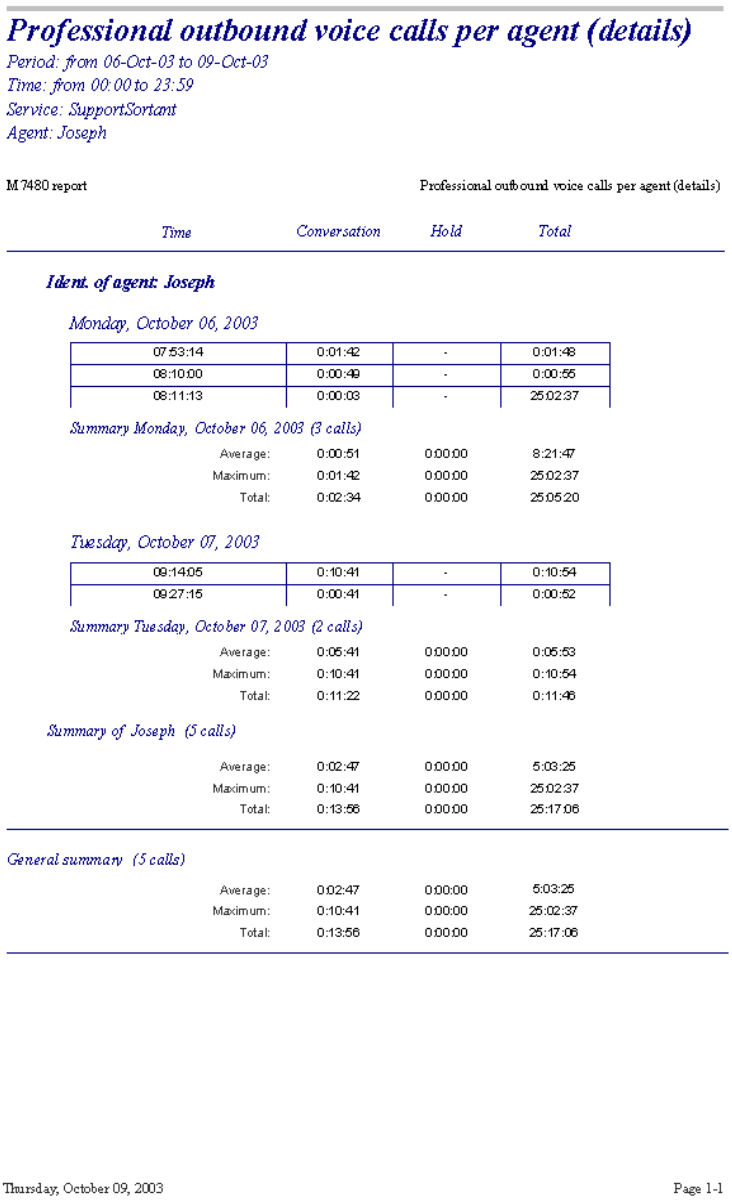
The labels that appear in the summary group together the data available in the corresponding detailed section.

Tableau 12.55

Labels	Formula		
	Average	Maximum	Total
Conversation	Avg(ConversationDuration)	Max(ConversationDuration)	Sum(ConversationDuration)
On hold	Avg(HoldDuration)	Max(HoldDuration)	Sum(HoldDuration)
Total	Avg(TotalDuration)	Max(TotalDuration)	Sum(TotalDuration)
x calls	Count* (of elements in the section)		

Example report "Professional outbound calls per agent (details)":

Selection by agent



Professional outbound voice calls per agent (details)

Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: SupportSortant
Agent: Joseph

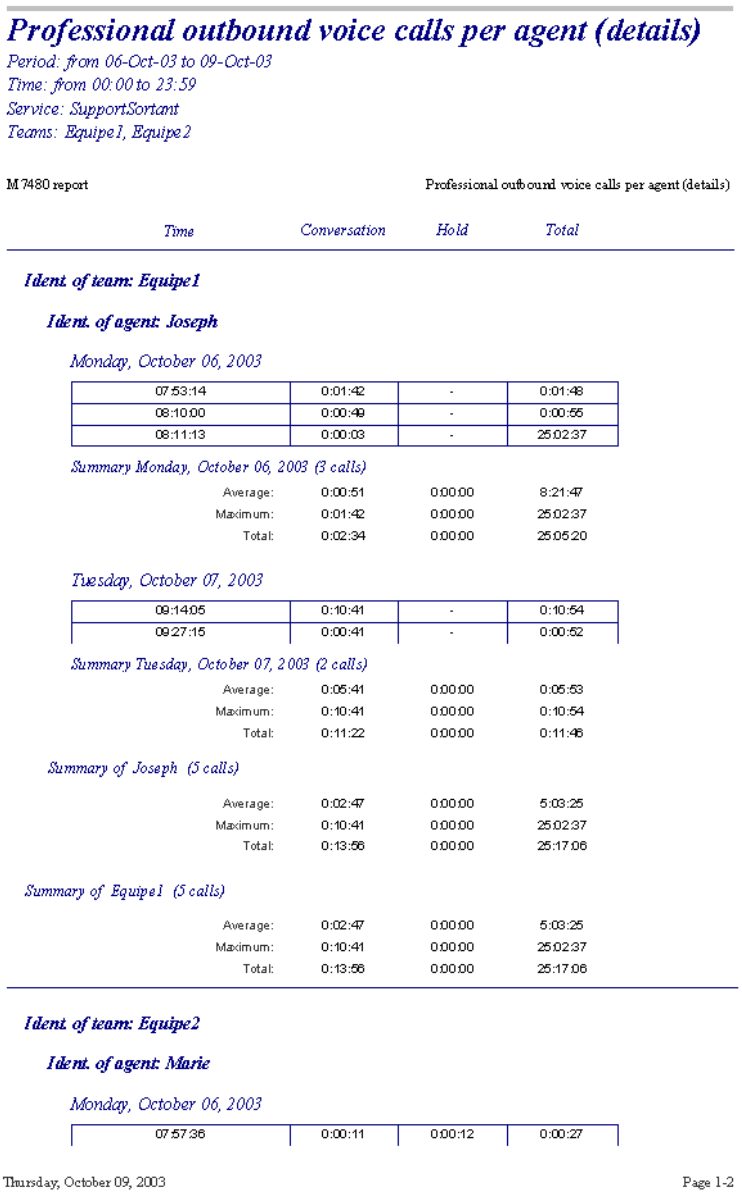
M7480 report — Professional outbound voice calls per agent (details)

Time	Conversation	Hold	Total
Ident. of agent: Joseph			
Monday, October 06, 2003			
07:53:14	0:01:42	-	0:01:48
08:10:00	0:00:49	-	0:00:55
08:11:13	0:00:03	-	25:02:37
Summary Monday, October 06, 2003 (3 calls)			
Average:	0:00:51	0:00:00	8:21:47
Maximum:	0:01:42	0:00:00	25:02:37
Total:	0:02:34	0:00:00	25:05:20
Tuesday, October 07, 2003			
09:14:05	0:10:41	-	0:10:54
09:27:15	0:00:41	-	0:00:52
Summary Tuesday, October 07, 2003 (2 calls)			
Average:	0:05:41	0:00:00	0:05:53
Maximum:	0:10:41	0:00:00	0:10:54
Total:	0:11:22	0:00:00	0:11:46
Summary of Joseph (5 calls)			
Average:	0:02:47	0:00:00	5:03:25
Maximum:	0:10:41	0:00:00	25:02:37
Total:	0:13:56	0:00:00	25:17:06
General summary (5 calls)			
Average:	0:02:47	0:00:00	5:03:25
Maximum:	0:10:41	0:00:00	25:02:37
Total:	0:13:56	0:00:00	25:17:06

Thursday, October 09, 2003 — Page 1-1

Figure 12.41 EXAMPLE OF "OUTBOUND PROFESSIONAL CALLS PER AGENT (DETAILS)" REPORT – SELECTION BY AGENT

Selection by team



Professional outbound voice calls per agent (details)

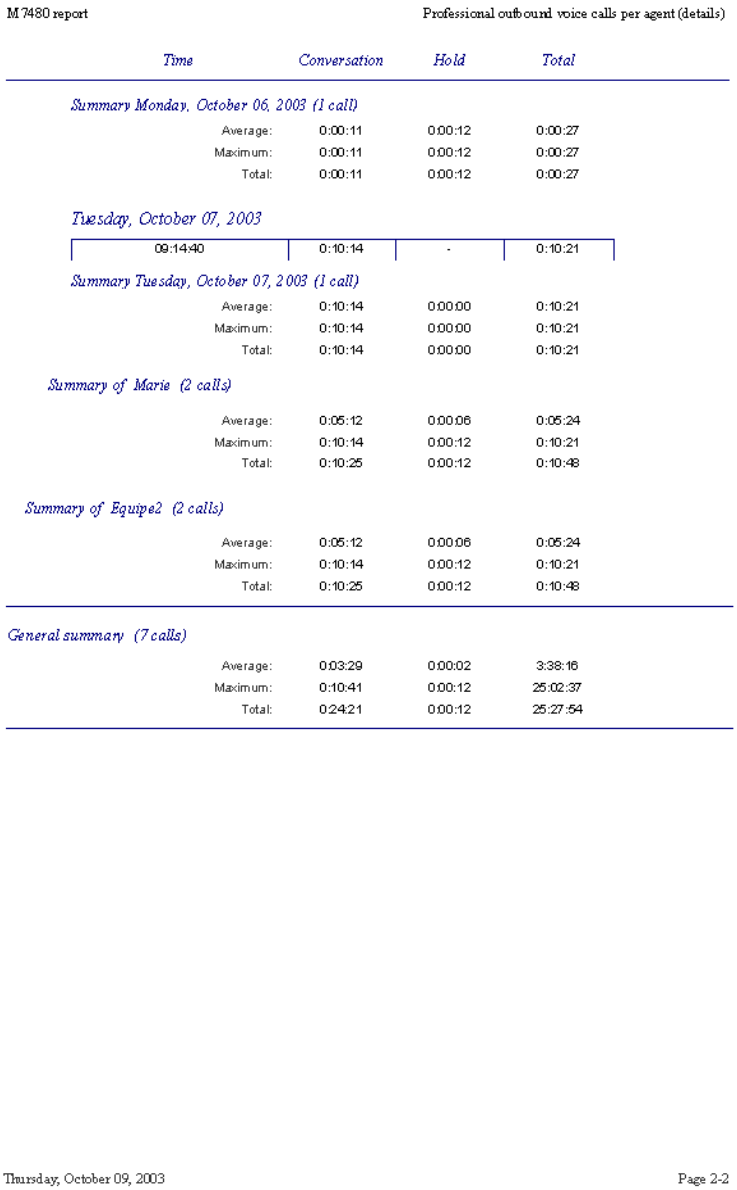
Period: from 06-Oct-03 to 09-Oct-03
Time: from 00:00 to 23:59
Service: SupportSortant
Teams: Equipe1, Equipe2

M7480 report — Professional outbound voice calls per agent (details)

Time	Conversation	Hold	Total
Ident. of team: Equipe1			
Ident. of agent: Joseph			
Monday, October 06, 2003			
07:53:14	0:01:42	-	0:01:48
08:10:00	0:00:49	-	0:00:55
08:11:13	0:00:03	-	25:02:37
Summary Monday, October 06, 2003 (3 calls)			
Average:	0:00:51	0:00:00	8:21:47
Maximum:	0:01:42	0:00:00	25:02:37
Total:	0:02:34	0:00:00	25:05:20
Tuesday, October 07, 2003			
09:14:05	0:10:41	-	0:10:54
09:27:15	0:00:41	-	0:00:52
Summary Tuesday, October 07, 2003 (2 calls)			
Average:	0:05:41	0:00:00	0:05:53
Maximum:	0:10:41	0:00:00	0:10:54
Total:	0:11:22	0:00:00	0:11:46
Summary of Joseph (5 calls)			
Average:	0:02:47	0:00:00	5:03:25
Maximum:	0:10:41	0:00:00	25:02:37
Total:	0:13:56	0:00:00	25:17:06
Summary of Equipe1 (5 calls)			
Average:	0:02:47	0:00:00	5:03:25
Maximum:	0:10:41	0:00:00	25:02:37
Total:	0:13:56	0:00:00	25:17:06
Ident. of team: Equipe2			
Ident. of agent: Marie			
Monday, October 06, 2003			
07:57:36	0:00:11	0:00:12	0:00:27

Thursday, October 09, 2003 — Page 1-2

Figure 12.42 EXAMPLE OF "OUTBOUND PROFESSIONAL CALLS PER AGENT (DETAILS)" REPORT - SELECTION BY TEAM (1/2)



M 7480 report — Professional outbound voice calls per agent (details)

Time	Conversation	Hold	Total
Summary Monday, October 06, 2003 (1 call)			
Average:	0:00:11	0:00:12	0:00:27
Maximum:	0:00:11	0:00:12	0:00:27
Total:	0:00:11	0:00:12	0:00:27
Tuesday, October 07, 2003			
09:14:40	0:10:14	-	0:10:21
Summary Tuesday, October 07, 2003 (1 call)			
Average:	0:10:14	0:00:00	0:10:21
Maximum:	0:10:14	0:00:00	0:10:21
Total:	0:10:14	0:00:00	0:10:21
Summary of Marie (2 calls)			
Average:	0:05:12	0:00:06	0:05:24
Maximum:	0:10:14	0:00:12	0:10:21
Total:	0:10:25	0:00:12	0:10:48
Summary of Equipe2 (2 calls)			
Average:	0:05:12	0:00:06	0:05:24
Maximum:	0:10:14	0:00:12	0:10:21
Total:	0:10:25	0:00:12	0:10:48
General summary (7 calls)			
Average:	0:03:29	0:00:02	3:38:16
Maximum:	0:10:41	0:00:12	25:02:37
Total:	0:24:21	0:00:12	25:27:54

Thursday, October 09, 2003 — Page 2-2

FIGURE 12.42 EXAMPLE OF "OUTBOUND PROFESSIONAL CALLS PER AGENT (DETAILS)" REPORT - SELECTION BY TEAM (2/2)

12.2.3.25 PREDEFINED REPORT "IVR PORTS SATURATION PERIODS"

12.2.3.25.1 General principle

The end of an IVR port saturation period results in the backing up of some data in the statistics. More particularly, a recording is backed up in the "CallServerSaturationPeriods" table.

The purpose of the “IVR port saturation period” is to display these different recordings.

Note: After the introduction of conference type IP resources, real-time statuses and reports associated with the “IVR port load” and “IVR saturation periods” do not differentiate between IVR resources and Conference IVR.
Therefore, if a media server is using IP and conference IP type resources, the data evaluated for the reports and real-time status will take account of the amount of data received on all the IVR resources (IP and Conf. IP).
There is no distinction between these two types of resources.

12.2.3.25.2 Content of the report

This report shows the periods during which all the resources of the M5000 CC Media Server have been busy (in “HandlingCall” status).

The report contains :

- The saturation start time
- The saturation end time
- The saturation duration.

The IVR port loads are grouped per day; the total and maximum saturation times are calculated for each group.

The data on which this report is based is contained in the 'CallServerSaturationPeriods' tables in the 'LongTermStatistics.mdb' database.

12.2.3.25.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the "CallServerSaturationPeriods" table (see Section 12.3.3.10).

Tableau 12.56

Labels	Formula
CallServer	CallServerName
Saturation	
Start time	SaturationBeginTime
End time	[SaturationBeginTime] + [SaturationDuration]
Duration	SaturationDuration

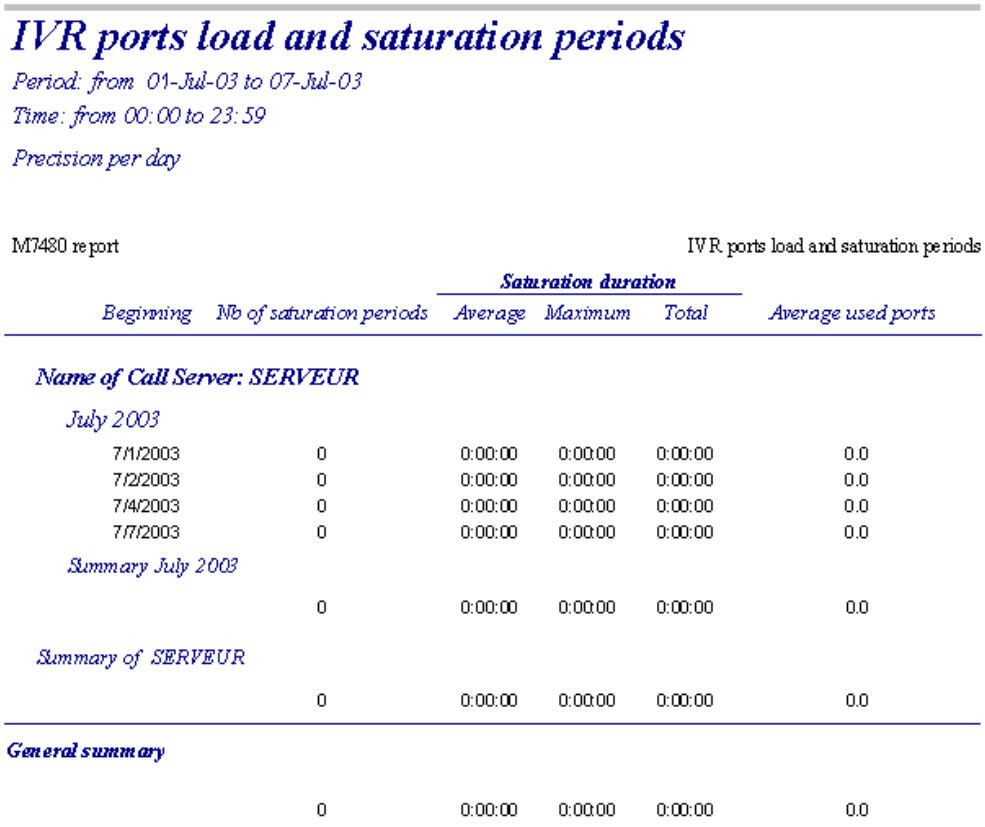
Summary

The labels that appear in the summary group together the data available in the corresponding detailed section.

Tableau 12.57

Labels	Formula	
	Total	Maximum
Duration	Sum([SaturationDuration])	Max([SaturationDuration])

Example of report "IVR ports saturation periods":



IVR ports load and saturation periods

Period: from 01-Jul-03 to 07-Jul-03

Time: from 00:00 to 23:59

Precision per day

M7480 report — IVR ports load and saturation periods

Beginning	Nb of saturation periods	Saturation duration: Average	Saturation duration: Maximum	Saturation duration: Total	Average used ports
Name of Call Server: SERVEUR					
July 2003					
7/1/2003	0	0:00:00	0:00:00	0:00:00	0.0
7/2/2003	0	0:00:00	0:00:00	0:00:00	0.0
7/4/2003	0	0:00:00	0:00:00	0:00:00	0.0
7/7/2003	0	0:00:00	0:00:00	0:00:00	0.0
Summary July 2003					
	0	0:00:00	0:00:00	0:00:00	0.0
Summary of SERVEUR					
	0	0:00:00	0:00:00	0:00:00	0.0
General summary					
	0	0:00:00	0:00:00	0:00:00	0.0

Figure 12.43 EXAMPLE OF REPORT: "IVR PORT SATURATION PERIODS"

12.2.3.26 PREDEFINED REPORT "LOAD IVR PORTS"

12.2.3.26.1 General principle

The evaluation of the IVR port load results in the backing up of some data in the statistics. More particularly, a recording is backed up in the "CallServerPortsLoad" table.

The purpose of the “IVR port load” is to display these different recordings.

Note: After the introduction of conference type IP resources, real-time statuses and reports associated with the “IVR port load” and “IVR saturation periods” do not differentiate between IVR resources and Conference IVR.
Therefore, if a media server is using IP and conference IP type resources, the data evaluated for the reports and real-time status will take account of the amount of data received on all the IVR resources (IP and Conf. IP).
There is no distinction between these two types of resources.

12.2.3.26.2 Content of the report

This report shows detailed statistics concerning the use of IVR ports of the M5000 CC Media Server. The report contains :

- The evaluation time
- The M5000 CC Media Server name
- The average number of ports used during the last time interval.

The IVR port loads are grouped per day and per M5000 CC Media Server, and a global summary is also displayed. For each group, the average number of ports used is calculated.

The data on which this report is based is contained in the 'CallServerPortsLoad' tables in the 'LongTermStatistics.mdb' database.

Calculating the average number of ports used:

The value "EvaluationDuration" indicates the time that has elapsed since the last time the average number of

ports used was calculated. On the other hand, the value "CallsIVRDuration" indicates the total time spent on an IVR extension by the calls processed since the last time the average was calculated.

To calculate the current average number of ports used, just perform the calculation "CallsIVRDuration" / "EvaluationDuration".

Note: For clarity sake, the calculation of the average number of ports used is different from the one done in the reporting standard.

12.2.3.26.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the "CallServerPortsLoad" table (see Section 12.3.3.9).

Tableau 12.58

Labels	Formula
CallServer	CallServerName
Time	EvaluationTime
Average number of ports used	[CallsIVRDuration]/[EvaluationDuration]

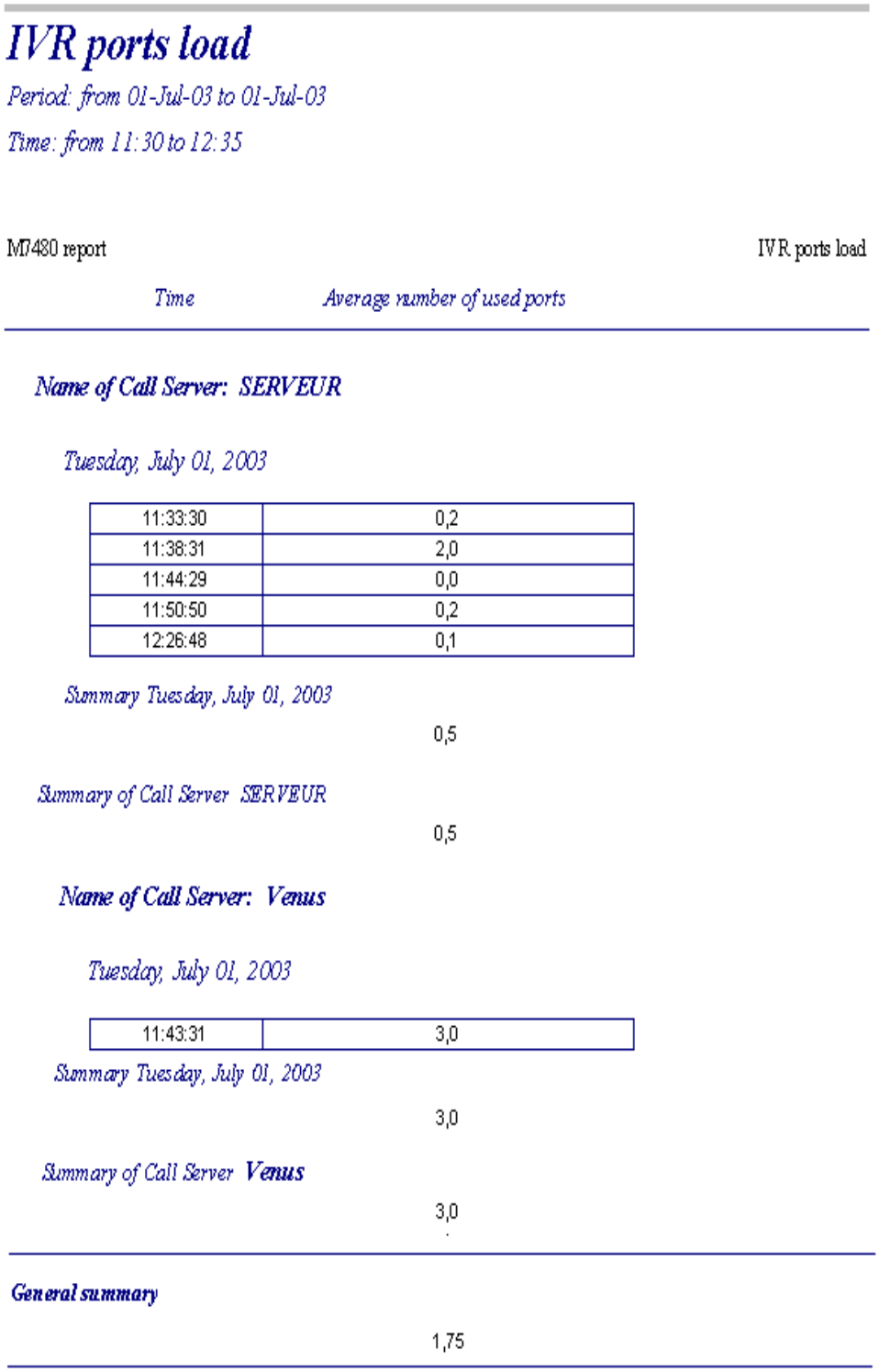
Summary

The labels that appear in the summary group together the data available in the corresponding detailed section.

Tableau 12.59

Labels	Formula
Average number of ports used	Sum([CallsIVRDuration])/Sum([EvaluationDuration])

Example of report "IVR ports load":



IVR ports load

Period: from 01-Jul-03 to 01-Jul-03

Time: from 11:30 to 12:35

M7480 report — IVR ports load

Time	*Average number of used ports*
Name of Call Server: SERVEUR	
Tuesday, July 01, 2003	
11:33:30	0,2
11:38:31	2,0
11:44:29	0,0
11:50:50	0,2
12:26:48	0,1
Summary Tuesday, July 01, 2003	0,5
Summary of Call Server SERVEUR	0,5
Name of Call Server: Venus	
Tuesday, July 01, 2003	
11:43:31	3,0
Summary Tuesday, July 01, 2003	3,0
Summary of Call Server ***Venus***	3,0
General summary	1,75

Figure 12.44 EXAMPLE OF REPORT: "IVR PORT LOAD"

12.2.3.27 PREDEFINED REPORT "IVR PORTS LOAD AND SATURATION PERIODS"

12.2.3.27.1 General principle

The evaluation of the IVR port load and/or end of an IVR port saturation period results in the backing up of some data in the statistics. More particularly, a recording is backed up (or updated) in the consolidated "PortsLoadAndSaturationPerCallServerPer*" table.

The purpose of the “IVR port load and saturation period” report is to display a summary per precision level (precision per quarter of an hour, half hour, hour, day, week and month) for the different data.

Note: After the introduction of conference type IP resources, real-time statuses and reports associated with the “IVR port load” and “IVR saturation periods” do not differentiate between IVR resources and Conference IVR.
Therefore, if a media server is using IP and conference IP type resources, the data evaluated for the reports and real-time status will take account of the amount of data received on all the IVR resources (IP and Conf. IP).
There is no distinction between these two types of resources.

12.2.3.27.2 Content of the report

This report shows consolidated statistics on the IVR port load and saturation periods for a given period. The report displays the data by M5000 CC Media Server.

This report contains, for each period of time (depending on the accuracy: per quarter hour, half hour, hour, day, week, or month) during which port load or saturation data were saved:

- The start date or time of this interval
- The number of saturation periods which occurred as from this interval
- The average number of saturation periods which occurred as from this interval
- The maximum number of saturation periods which occurred as from this interval
- The total saturation time as from this interval
- The average number of ports used during this interval.

Depending on the precision chosen, a daily summary (precision per quarter hour, half hour, and hour), monthly (precision per day and week) or annual (precision per month) may be provided. A summary per M5000 CC Media Server and a full summary are also displayed.

The data on which the report is based is contained in the PortsLoadAndSaturationPerCallServer*' tables in the 'LongTermStatistics.mdb' database.

Calculating the average number of ports used:

Therefore, the average number of ports used corresponds to "TotalIVRDuration" / "TotalEvaluationDuration".

12.2.3.27.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the “PortsLoadAndSaturationPerCallServerPer*” table (see Section 12.3.3.23).

Tableau 12.60

Labels	Formula
CallServer	CallServerName
Begin	BeginTime
Number of saturation periods	TotalNbrSaturation
Saturation duration	
Average	TotalSaturationDuration / TotalNbrSaturation
Maximum	MaxSaturationDuration
Total	TotalSaturationDuration
Average ports used	TotalIVRCallsDuration / TotalEvaluationDuration

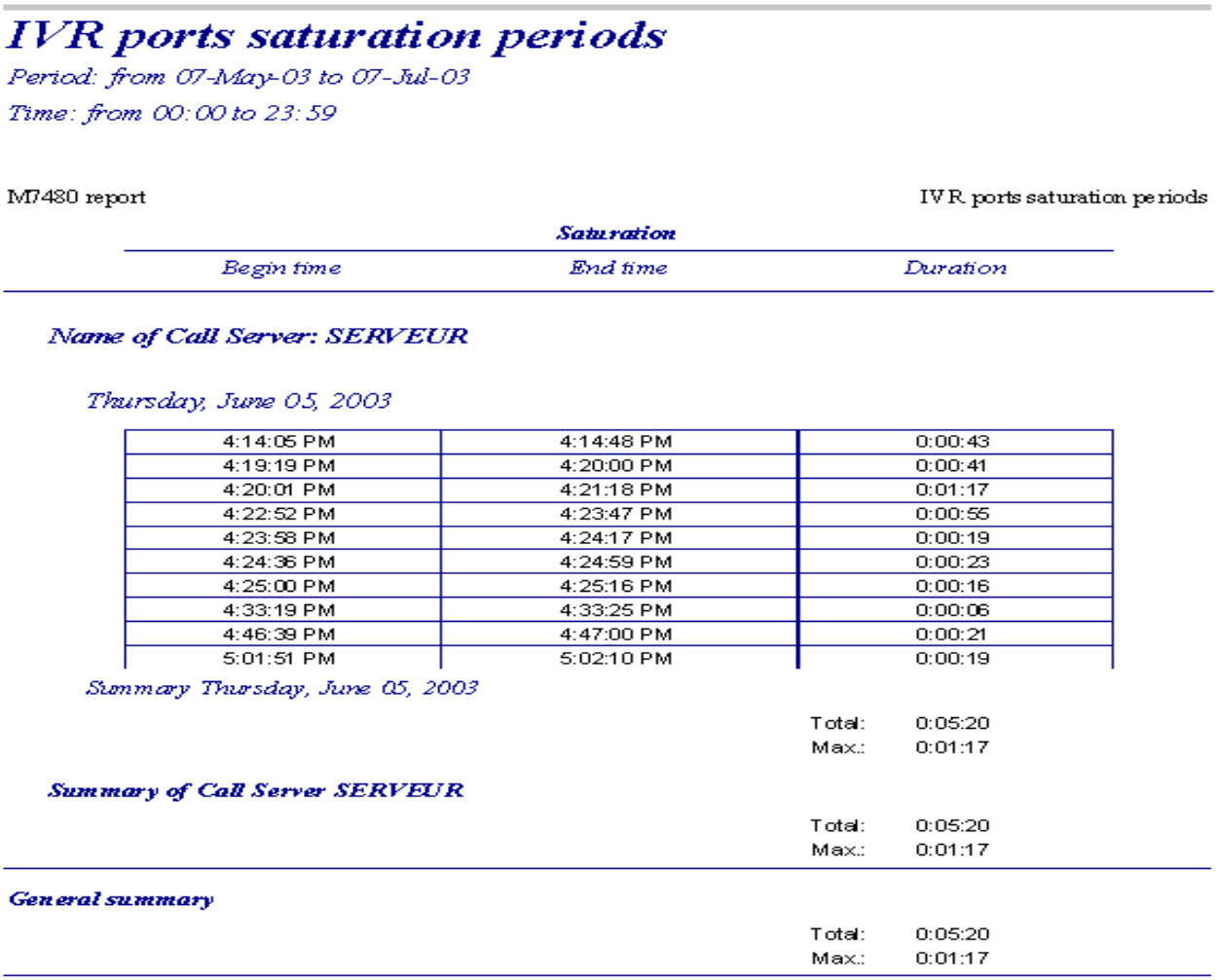
Summary

The labels that appear in the summary group together the data available in the corresponding detailed section.

Tableau 12.61

Labels	Formula
Number of saturation periods	Sum(TotalNbrSaturation)
Saturation duration	
Average	Sum(TotalSaturationDuration) / Sum(TotalNbrSaturation)
Maximum	Max(MaxSaturationDuration)
Total	Sum(TotalSaturationDuration)
Average ports used	Sum(TotalIVRCallsDuration) / Sum(TotalEvaluationDuration)

Example of report "IVR ports load and saturation periods":



IVR ports saturation periods

Period: from 07-May-03 to 07-Jul-03

Time: from 00:00 to 23:59

M7480 report — IVR ports saturation periods

	Saturation	
Begin time	*End time*	*Duration*
Name of Call Server: SERVEUR		
Thursday, June 05, 2003		
4:14:05 PM	4:14:48 PM	0:00:43
4:19:19 PM	4:20:00 PM	0:00:41
4:20:01 PM	4:21:18 PM	0:01:17
4:22:52 PM	4:23:47 PM	0:00:55
4:23:58 PM	4:24:17 PM	0:00:19
4:24:36 PM	4:24:59 PM	0:00:23
4:25:00 PM	4:25:16 PM	0:00:16
4:33:19 PM	4:33:25 PM	0:00:06
4:46:39 PM	4:47:00 PM	0:00:21
5:01:51 PM	5:02:10 PM	0:00:19
Summary Thursday, June 05, 2003		
	Total:	0:05:20
	Max.:	0:01:17
Summary of Call Server SERVEUR		
	Total:	0:05:20
	Max.:	0:01:17
General summary		
	Total:	0:05:20
	Max.:	0:01:17

Figure 12.45 EXAMPLE OF REPORT: "IVR PORT LOAD AND SATURATION PERIODS"

12.2.3.28 PREDEFINED REPORT "SERVICE CLOSING PERIODS" (REJECT 21)

12.2.3.28.1 General principle

The end of a closing period belonging to an incoming service results in the backing up of some statistical data. More particularly, a recording is backed up (or updated) in the consolidated "ClosingStatusPerServicePer *" table.

The purpose of the "Service closing periods" report is to display a summary for each level of precision (precision per quarter of an hour, half hour, hour, day, week and month) for the different sessions received in the selected incoming service.

This report is applicable only when the Reject 21 function is configured and used by M5000 CC.

12.2.3.28.2 Content of the report

This report shows consolidated statistics concerning the closing periods of a Service during a given period.

This report contains, for each period of time (depending on the accuracy: per quarter hour, half hour, hour, day, week, or month) during which Service closings have occurred:

- The start date or time of this interval
- The number of periods during which the general closing rules (defined by the M5000 CC Administrator

application) are checked

- The total duration of the periods during which the general closing rules are checked
- The number of periods during which the service closing rules (defined by the M5000 CC Service Manager) are checked
- The total duration of the periods during which the Service closing rules are checked
- the number of periods during which the service remained closed due to the rule on minimum closing period,
- the total duration of the minimum closing periods,
- The number of periods during which the Service was closed manually
- The total duration of the manual closing periods
- The total number of closing periods
- The total closing duration.

Depending on the precision chosen, a daily summary (precision per quarter hour, half hour, and hour), monthly (precision per day and week) or annual (precision per month) may be provided. A full summary is also displayed.

The data on which the report is based is contained in the 'ClosingStatusPerServicePer*' tables in the 'LongTermStatistics.mdb' database.

12.2.3.28.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the "ClosingStatusPerServicePer" table (see Section 12.3.3.22).

Tableau 12.62

Labels	Formula	
	Number	Duration
Department	ServiceID	
Begin	BeginTime	
General closing rules		
FreqA	NbrGeneralFrequencyVerified	TotalGeneralFrequencyDuration
RapAp	NbrGeneralCallsRatioVerified	TotalGeneralCallsRatioDuration
RapAg	NbrGeneralAgentsRatioVerified	TotalGeneralAgentsRatioDuration
ATrans	NbrGeneralCallsToTransferVerified	TotalGeneralCallsToTransferDuration
LgAtt	NbrGeneralLgWaitTimeVerified	TotalGeneralLgWaitTimeDuration
Time	NbrGeneralTimeRuleVerified	TotalGeneralTimeRuleDuration
Service closing rules		
FreqA	[NbrFrequencyVerified]-[NbrGeneralFrequencyVerified]	[TotalFrequencyDuration]-[TotalGeneralFrequencyDuration]
RapAp	[NbrCallsRatioVerified]-[NbrGeneralCallsRatioVerified]	[TotalCallsRatioDuration]-[TotalGeneralCallsRatioDuration]
RapAg	[NbrAgentsRatioVerified]-[NbrGeneralAgentsRatioVerified]	[TotalAgentsRatioDuration]-[TotalGeneralAgentsRatioDuration]
ATrans	[NbrCallsToTransferVerified]-[NbrGeneralCallsToTransferVerified]	TotalCallsToTransferDuration]-[TotalGeneralCallsToTransferDuration]
LgAtt	[NbrLgWaitTimeVerified]-[NbrGeneralLgWaitTimeVerified]	[TotalLgWaitTimeDuration]-[TotalGeneralLgWaitTimeDuration]
Time	[NbrTimeRuleVerified]-[NbrGeneralTimeRuleVerified]	[TotalTimeRuleDuration]-[TotalGeneralTimeRuleDuration]
Minimum closing	NbrMinimumClosed	TotalMinimumClosedDuration
Manual	([NbrServiceGotClosed]-([NbrFrequencyVerified]+[NbrCallsRatioVerified]+[NbrAgentsRatioVerified]+[NbrCallsToTransferVerified]+[NbrLgWaitTimeVerified]+[NbrTimeRuleVerified]+[NbrMinimumClosed]))	([TotalClosedDuration]-([TotalFrequencyDuration]+[TotalCallsRatioDuration]+[TotalAgentsRatioDuration]+[TotalCallsToTransferDuration]+[TotalLgWaitTimeDuration]+[TotalTimeRuleDuration]+[TotalMinimumClosedDuration]))
Total closing	NbrServiceGotClosed	TotalClosedDuration

Summary

The labels that appear in the summary group together the data available in the corresponding detailed section.

Tableau 12.63

Labels	Formula	
	Total number	Total duration
General closing rules		
FreqA	Sum(NbrGeneralFrequencyVerified)	Sum(TotalGeneralFrequencyDuration)
RapAp	Sum(NbrGeneralCallsRatioVerified)	Sum(TotalGeneralCallsRatioDuration)
RapAg	Sum(NbrGeneralAgentsRatioVerified)	Sum(TotalGeneralAgentsRatioDuration)
ATrans	Sum(NbrGeneralCallsToTransferVerified)	Sum(TotalGeneralCallsToTransferDuration)
LgAtt	Sum(NbrGeneralLgWaitTimeVerified)	Sum(TotalGeneralLgWaitTimeDuration)
Time	Sum(NbrGeneralTimeRuleVerified)	Sum(TotalGeneralTimeRuleDuration)
Service closing rules		
FreqA	Sum([NbrFrequencyVerified]-[NbrGeneralFrequencyVerified])	Sum([TotalFrequencyDuration]-[TotalGeneralFrequencyDuration])
RapAp	Sum([NbrCallsRatioVerified]-[NbrGeneralCallsRatioVerified])	Sum([TotalCallsRatioDuration]-[TotalGeneralCallsRatioDuration])
RapAg	Sum([NbrAgentsRatioVerified]-[NbrGeneralAgentsRatioVerified])	Sum([TotalAgentsRatioDuration]-[TotalGeneralAgentsRatioDuration])
ATrans	Sum([NbrCallsToTransferVerified]-[NbrGeneralCallsToTransferVerified])	Sum(TotalCallsToTransferDuration]-[TotalGeneralCallsToTransferDuration])
LgAtt	Sum([NbrLgWaitTimeVerified]-[NbrGeneralLgWaitTimeVerified])	Sum([TotalLgWaitTimeDuration]-[TotalGeneralLgWaitTimeDuration])
Time	Sum([NbrTimeRuleVerified]-[NbrGeneralTimeRuleVerified])	Sum([TotalTimeRuleDuration]-[TotalGeneralTimeRuleDuration])
Minimum closing	Sum(NbrMinimumClosed)	Sum(TotalMinimumClosedDuration)
Manual	Sum(([NbrServiceGotClosed]-([NbrFrequencyVerified]+ [NbrCallsRatioVerified]+ [NbrAgentsRatioVerified]+ [NbrCallsToTransferVerified]+ [NbrLgWaitTimeVerified]+ [NbrTimeRuleVerified]+ [NbrMinimumClosed])))	Sum(([TotalClosedDuration]-([TotalFrequencyDuration]+ [TotalCallsRatioDuration]+ [TotalAgentsRatioDuration]+ [TotalCallsToTransferDuration]+ [TotalLgWaitTimeDuration]+ [TotalTimeRuleDuration]+ [TotalMinimumClosedDuration])))
Total closing	Sum(NbrServiceGotClosed)	Sum(TotalClosedDuration)

Example of "Service closing periods" report (precision per half hour):

Service closing periods

Period: from 07-Jun-03 to 07-Jul-03
Time: from 00:00 to 23:59
Service: AAT
Precision per day

M7480 report — Service closing periods

Beginning	General closing rules						Service closing rules						Manual	Total closing
	CFreq	CRatio	ARatio	ToTrans	LgWait	Time	CFreq	CRatio	ARatio	ToTrans	LgWait	Time		
June 2003														
6/12/2003														
Number:	-	-	-	-	4	-	-	1	-	-	-	-	1	6
Duration:	-	-	-	-	0:01:22	-	-	0:00:20	-	-	-	-	0:07:09	0:08:51
6/20/2003														
Number:	-	6	-	-	-	-	-	2	-	6	-	-	-	14
Duration:	-	0:02:21	-	-	-	-	-	0:00:41	-	0:02:11	-	-	-	0:05:13
Summary June 2003														
Total number:	0	6	0	0	4	0	0	3	0	6	0	0	1	20
Total duration:	0:00:00	0:02:21	0:00:00	0:00:00	0:01:22	0:00:00	0:00:00	0:01:01	0:00:00	0:02:11	0:00:00	0:00:00	0:07:09	0:14:04

General summary

Total number:	0	6	0	0	4	0	0	3	0	6	0	0	1	20
Total duration:	0:00:00	0:02:21	0:00:00	0:00:00	0:01:22	0:00:00	0:00:00	0:01:01	0:00:00	0:02:11	0:00:00	0:00:00	0:07:09	0:14:04

Legend

CFreq = *Call frequency rule*
CRatio = *Calls ratio rule*
ARatio = *Agents ratio rule*
ToTrans = *Number of calls to transfer rule*
LgWait = *Longest waiting time rule*
Time = *Time rule*

Figure 12.46 EXAMPLE OF REPORT "SERVICE CLOSING PERIODS"

12.2.3.29 PREDEFINED REPORT "SERVICE OPENINGS AND CLOSINGS (DETAILS)"

12.2.3.29.1 General principle

The end of a closing period belonging to an incoming service results in the backing up of some statistical data. More particularly, a recording is backed up in the "ServiceOpeningClosingStatuses" table.

The purpose of the “Service opening and closing (Details)” report is to display these different recordings for the selected service.

12.2.3.29.2 Content of the report

This report shows detailed statistics on the closing and opening periods of a Service. In addition, statistics on the various modes used over time are specified.

The report has 4 columns:

- Status time: represents the time at which the status and/or cause of the status changed.
- Service status: represents the status of the Service (Open or Closed) (see § 1.4).
- Duration: the period after which the status/status cause can be changed.
- Status cause: represents the reason for which the status is worth the value indicated. (The various reasons possible are specified below).

Values possible for the status cause:

- Service not in "Production": there is no version in Production for the Service.
- Closing by the M5000 CC Administrator application: the M5000 CC Administrator has changed to closed manual mode.
- Closing by M5000 CC Service Manager: the M5000 CC Service Manager is in closed manual mode and the M5000 CC Administrator is either in open System mode or in automatic mode, but no rule is applied.
- Opening by M5000 CC Service Manager: the M5000 CC Service Manager is in open manual mode and the M5000 CC Administrator is either in open System mode or in automatic mode, but no rule is checked.
- Rule(s) not verified: the M5000 CC Administrator is not in closed System mode and the M5000 CC Service Manager is in automatic mode. None of the M5000 CC Service Manager rules is checked and if the M5000 CC Administrator is in automatic mode, none of its rules are checked either. The Service is closed for more than 10 seconds.
- Time rule (Man.): the M5000 CC Administrator imposes no closing, the M5000 CC Service Manager is in automatic mode and the agent report rule is checked.
- Longest waiting time rule (Man.): the M5000 CC Administrator imposes no closing, the M5000 CC Service Manager is in automatic mode and the longest waiting time rule is checked.
- Number of pending calls rule (Man.): the M5000 CC Administrator imposes no closing, the M5000 CC Service Manager is in automatic mode and the number of waiting calls rule is checked.
- Call report rule (Man.): the M5000 CC Administrator imposes no closing, the M5000 CC Service Manager is in automatic mode and the call report rule is checked.
- Agent report rule (Man.): the M5000 CC Administrator imposes no closing, the M5000 CC Service Manager is in automatic mode and the agent report rule is checked.
- Call frequency rule (Man.): the M5000 CC Administrator imposes no closing, the M5000 CC Service Manager is in automatic mode and the call frequency rule is checked.
- Time rule (Adm.): The M5000 CC Administrator is in automatic mode and the time rule is checked.
- Longest waiting time rule (Adm.): The M5000 CC Administrator is in automatic mode and the longest waiting time rule is checked.
- Number of pending calls rule (Adm.): The M5000 CC Administrator is in automatic mode and the number of waiting calls rule is checked.
- Call report rule (Adm.): The M5000 CC Administrator is in automatic mode and the call report rule is checked.
- Agent report rule (Adm.): The M5000 CC Administrator is in automatic mode and the agent report rule is checked.
- Call frequency rule (Adm.): The M5000 CC Administrator is in automatic mode and the call frequency rule is checked.
- Minimum closing time: the M5000 CC Administrator is not in closed System mode and the M5000 CC Service Manager is in automatic mode. None of the M5000 CC Service Manager rules is checked and if the M5000 CC Administrator is in automatic mode, none of its rules is checked. The Service is closed for more than 10 seconds.

Information summary:

At the end of the grouping per time period and at the end of the report, a summary of the section is available. It contains the following information:

- The Service was open during: contains the total time during which the Service was open (regardless of the cause)
- The Service was open x times: indicates the number of times the Service was opened (changing from closed or no status defined to open mode)
- The Service was closed during: contains the total time during which the Service was closed (regardless of the cause)
- The Service was closed x times: indicates the number of times the Service was closed (changing from open or no status defined to closed mode)
- Service not in "Production": indicates the total time during which the Service was closed as it had no version in Production and the number of times the Service was closed for this reason.
- Service in closed manual Adm.: indicates the total time during which the Service was closed as the M5000 CC Administrator was in closed system mode and the number of times the Service was closed for this reason.
- Service in open manual Service Man. mode: indicates the total time during which the status cause was "Opening by the M5000 CC Service Manager" and the number of times the Service was opened for this reason.
- Service in closed manual Service Man. mode: indicates the total time during which the status cause was "Closing by the M5000 CC Service Manager" and the number of times the Service was closed for this reason.
- Service in automatic open mode: indicates the total time during which the status cause was “Rule(s) not verified” and the number of times the Service was opened for this reason.
- Service in the automatic closed mode (Per Man.): indicates the total time during which the status cause was "Automatic closing by the M5000 CC Service Manager" and the number of times the Service was closed for this reason.
- Service in the automatic closed mode (By Adm.): indicates the total time during which the status cause was "Automatic closing by the M5000 CC Administrator" and the number of times the Service was closed for this reason.
- Service in the automatic closed mode (Min closing time): indicates the total time during which the reason for the status was "Minimum closing time rule" and the number of times the Service was closed for this reason.
- Service in the automatic closed mode (Total): indicates the total time during which the Service was closed automatically and the number of times the Service was closed for this reason.

Comments :

- The values for the number of openings and closings of the Service are calculated based on the "NewStatus" and "NewMode" fields. The details of the various openings and closings are however calculated based on "PreviousStatus", "PreviousMode" and "PreviousDuration" fields, as the duration of the current mode is not currently known. Therefore, it is possible to have a situation in which the number of openings and/or closings can exceed by one the number of openings/closings which can be included in the detailed section.
- The user can note that in certain cases, the data are spaced out using a blank. In fact, a space indicates that the Server has just changed to production mode or that Reject 21 has just been activated for this Service. In this case, a record is saved in the "ServiceOpeningClosingStatuses" table (see Section 12.3.3.8) or the only information available concerns the "NewStatus" and "NewMode" fields, which are not used in the detailed section. This is why a space is displayed instead.
- The request used in this report to filter the activities (the opening and closing of service) is different from the other reports. In most of the reports, this request is based on the beginning of the call, of the presentation, of the e-mail, etc. So the report only displays the data that started within the specified time interval. The request made for the "Agent Statuses and activities (details)" and "Service openings and closings (details)" reports is different. It includes all the data occurring within the specified time interval.

Data:

The data on which this report is based is contained in the 'ServiceOpeningClosingStatuses' tables in the 'LongTermStatistics.mdb' database.

12.2.3.29.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the

"ServiceOpeningClosingStatuses" table (see Section 12.3.3.8).

Tableau 12.64

Labels	Formula
Department	ServiceID
Time	PreviousChangeTime
Service status	PreviousStatus
Duration	PreviousDuration
Status cause	[PreviousStatus];[PreviousMode]

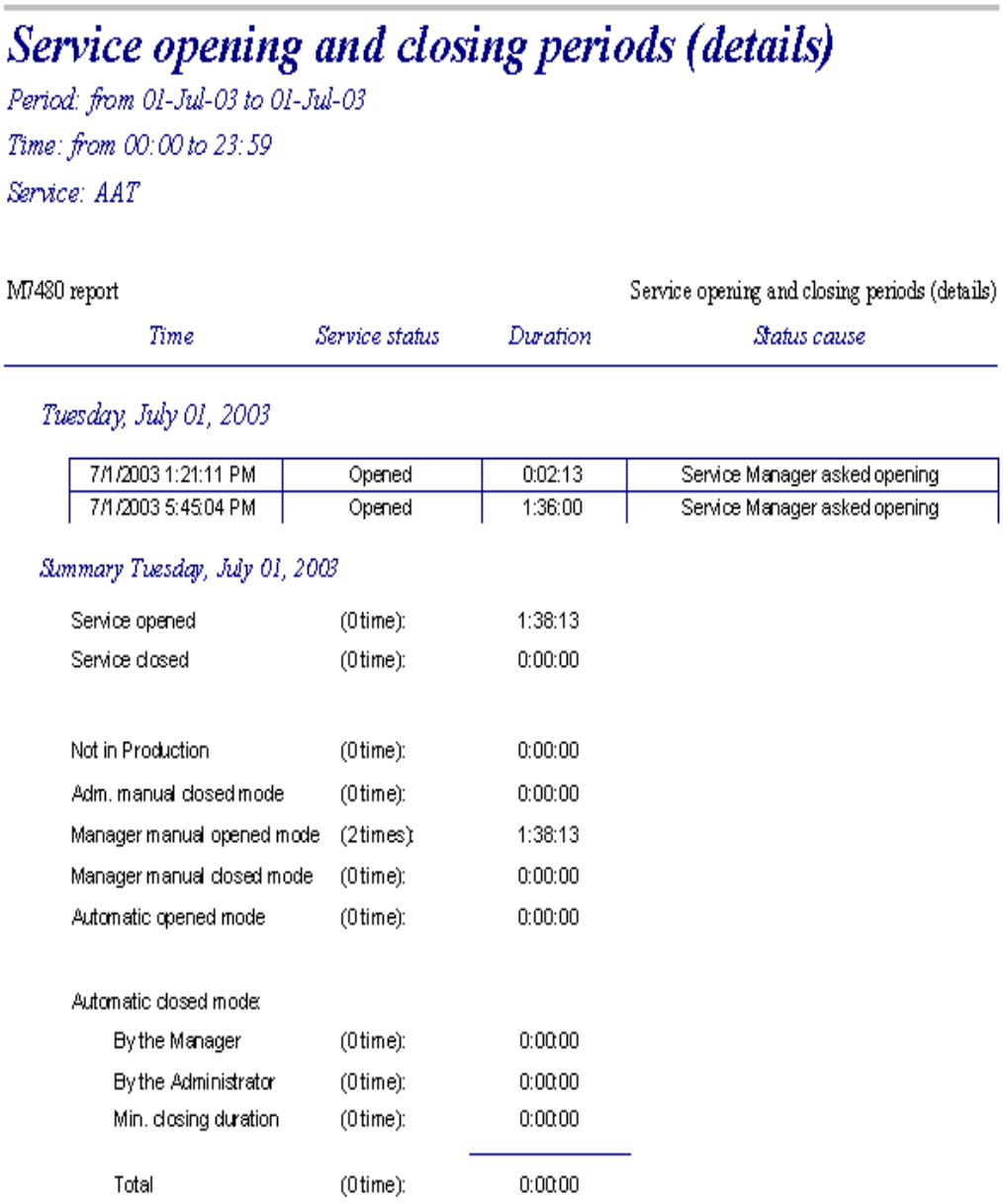
Summary

The labels that appear in the summary group together the data available in the corresponding detailed section.

Tableau 12.65

Labels	Formula	
	x times	Duration
Service open	Sum(IIf([PreviousStatus]=1 And [NewStatus]<>1;1;0))	Sum(IIf([PreviousStatus]=1;[PreviousDuration];0))
Service closed	Sum(IIf([PreviousStatus]=2 And [NewStatus]<>2;1;0))	Sum(IIf([PreviousStatus]=2;[PreviousDuration];0))
Not in Production	Sum(IIf([PreviousMode]=1;1;0))	(Sum(IIf([PreviousMode]=1;[PreviousDuration];0))
Manual closed adm. mode	Sum(IIf(([PreviousMode]=2) And ([PreviousStatus]=2);1;0))	Sum(IIf(([PreviousMode]=2) And ([PreviousStatus]=2);[PreviousDuration];0))
Manual open manager mode	Sum(IIf(([PreviousMode]=3) And ([PreviousStatus]=1);1;0))	Sum(IIf(([PreviousMode]=3) And ([PreviousStatus]=1);[PreviousDuration];0))
Manual closed manager mode	Sum(IIf(([PreviousMode]=3) And ([PreviousStatus]=2);1;0))	Sum(IIf(([PreviousMode]=3) And ([PreviousStatus]=2);[PreviousDuration];0))
Automatic open mode	Sum(IIf(([PreviousMode]=17) And ([PreviousStatus]=1);1;0))	Sum(IIf(([PreviousMode]=17) And ([PreviousStatus]=1);[PreviousDuration];0))
Automatic closed mode		
By manager	Sum(IIf(([PreviousMode]>=4) And ([PreviousMode]<=9) And ([PreviousStatus]=2);1;0))	Sum(IIf(([PreviousMode]>=4) And ([PreviousMode]<=9) And ([PreviousStatus]=2);[PreviousDuration];0))
By administrator	Sum(IIf(([PreviousMode]>=10) And ([PreviousMode]<=15) And ([PreviousStatus]=2);1;0))	Sum(IIf(([PreviousMode]>=10) And ([PreviousMode]<=15) And ([PreviousStatus]=2);[PreviousDuration];0))
Min. closing duration	Sum(IIf(([PreviousMode]=16) And ([PreviousStatus]=2);1;0))	Sum(IIf(([PreviousMode]=16) And ([PreviousStatus]=2);[PreviousDuration];0))
Total	Sum(IIf(([PreviousMode]>=4) And ([PreviousMode]<=16) And ([PreviousStatus]=2);1;0))	Sum(IIf(([PreviousMode]>=4) And ([PreviousMode]<=16) And ([PreviousStatus]=2);[PreviousDuration];0))

Predefined report "Service openings and closings (details)":



Service opening and closing periods (details)

Period: from 01-Jul-03 to 01-Jul-03

Time: from 00:00 to 23:59

Service: AAT

M7480 report — Service opening and closing periods (details)

Time	Service status	Duration	Status cause
Tuesday, July 01, 2003			
7/1/2003 1:21:11 PM	Opened	0:02:13	Service Manager asked opening
7/1/2003 5:45:04 PM	Opened	1:36:00	Service Manager asked opening

Summary Tuesday, July 01, 2003

Service opened	(0 time):	1:38:13
Service closed	(0 time):	0:00:00
Not in Production	(0 time):	0:00:00
Adm. manual closed mode	(0 time):	0:00:00
Manager manual opened mode	(2 times):	1:38:13
Manager manual closed mode	(0 time):	0:00:00
Automatic opened mode	(0 time):	0:00:00
Automatic closed mode:		
By the Manager	(0 time):	0:00:00
By the Administrator	(0 time):	0:00:00
Min. closing duration	(0 time):	0:00:00
Total	(0 time):	0:00:00

Figure 12.47 EXAMPLE OF REPORT: "SERVICE OPENINGS AND CLOSINGS (DETAILS)"

12.2.3.30 PREDEFINED "ALARMS (DETAILS)" REPORT

12.2.3.30.1 General principle

The end of an alarm belonging to an incoming service results in the backing up of some statistical data. More particularly, a recording is backed up in the "ServiceAlarms" table.

The purpose of the "Alarms (details)" report is to display these different recordings for the service and for each selected filter.

12.2.3.30.2 Content of the report

This report shows detailed statistics on the alarms attained in a service, as well as those related to filters (see U-443Sheet) in this service.

It is possible to select several filters. In this case, the data is grouped by filter, and there will be no general summary displayed at the end of the report.

This report contains, for each time interval during which an alarm occurred in a service:

- The start time for this interval
- The end time for this interval
- The total period during which the alarm activation rule is verified,
- The alarm activation rule display property
- The absolute threshold
- The relative threshold.

The data on which this report is based is contained in the "ServiceAlarms" table in the 'LongTermStatistics.mdb' database.

12.2.3.30.3 MEANING OF LABELS

Report table

The values displayed in the different pages of the report are described in the section concerning the "ServiceAlarms" table (see Section 12.3.3.24).

Tableau 12.66

Labels	Formula
Begin	BeginTime
End	EventTime
Duration	AlarmDuration
Properties	If StatusId <200, StatusId If StatusId >=200, [CustomCounterId];[CustomCounterType]
Absolute threshold	If [AssociatedStatusId]=-1 AscendingProperty AlarmThreshold
Relative threshold	If [AssociatedStatusId]<>-1, AscendingProperty AlarmThreshold "%" If AssociatedStatusId<200, [AssociatedStatusId] If AssociatedStatusId>=200, [AssociatedCustomCounterId];[AssociatedCustomCounterType]

Report summary

This report does not contain any summary.

Example of "Alarms (details)":

Selection by service

Alarms (details)

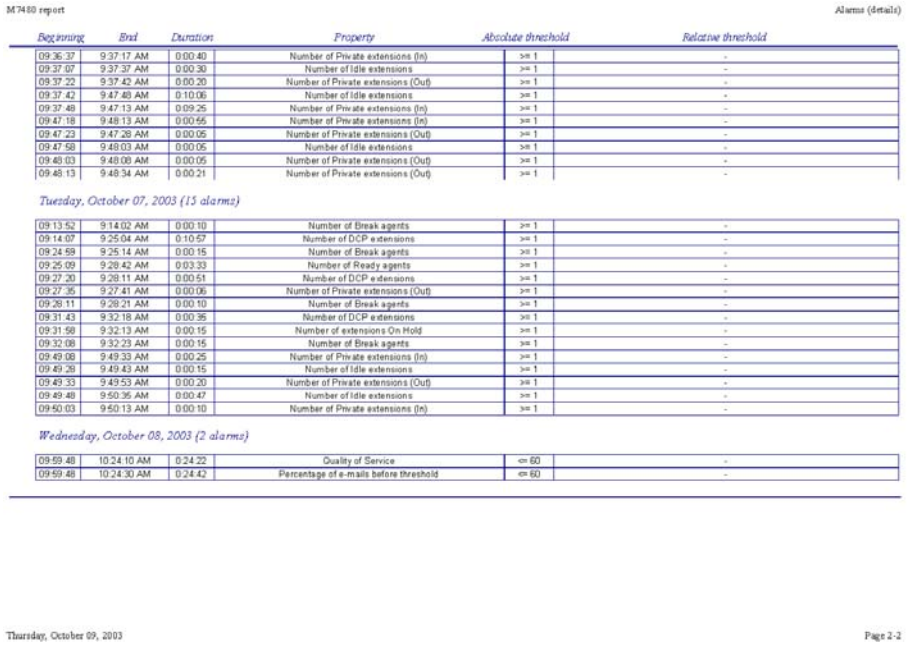
Period: from 06-Oct-03 to 09-Oct-03
Time: from 09:00 to 09:59
Service: Helpdesk
Filter: no filter

M7480 report — Alarms (details)

Beginning	End	Duration	Property	Absolute threshold	Relative threshold
Monday, October 06, 2003 (40 alarms)					
09:04:12	9:20:12 AM	0:16:00	Number of Idle extensions	>= 1	-
09:04:12	9:09:35 AM	0:05:23	Number of Ready agents	>= 1	-
09:05:53	9:06:38 AM	0:00:45	Number of Not Ready agents	>= 1	-
09:05:53	9:06:38 AM	0:00:45	Number of Not Ready agents with a undefined activity code	>= 1	-
09:07:39	9:08:04 AM	0:00:25	Number of Not Ready agents	>= 1	-
09:07:39	9:08:04 AM	0:00:25	Number of Not Ready agents with a undefined activity code	>= 1	-
09:07:44	9:08:24 AM	0:00:40	Number of DCP extensions	>= 1	-
09:08:19	9:08:29 AM	0:00:10	Number of Not Ready agents	>= 1	-
09:08:19	9:08:29 AM	0:00:10	Number of Not Ready agents with a undefined activity code	>= 1	-
09:08:24	9:09:19 AM	0:00:55	Number of extensions On Hold	>= 1	-
09:08:34	9:20:07 AM	0:11:33	Number of Not Ready agents	>= 1	-
09:08:34	9:20:07 AM	0:11:33	Number of Not Ready agents with a undefined activity code	>= 1	-
09:08:49	9:09:04 AM	0:00:15	Number of DCP extensions	>= 1	-
09:08:59	9:20:07 AM	0:11:08	Number of PCP agents	>= 1	-
09:08:59	9:20:07 AM	0:11:08	Number of PCP agents with a undefined activity code	>= 1	-
09:09:19	9:09:35 AM	0:00:16	Number of DCP extensions	>= 1	-
09:09:35	9:09:45 AM	0:00:10	Number of Break agents	>= 1	-
09:09:45	9:19:31 AM	0:09:46	Number of Ready agents	>= 1	-
09:09:50	9:19:31 AM	0:09:41	Number of DCP extensions	>= 1	-
09:19:31	9:19:37 AM	0:00:06	Number of Break agents	>= 1	-
09:19:57	9:20:27 AM	0:00:30	Number of DCP extensions	>= 1	-
09:20:07	9:20:12 AM	0:00:05	Number of Break agents	>= 1	-
09:20:22	9:20:32 AM	0:00:10	Number of extensions On Hold	>= 1	-
09:20:27	9:20:42 AM	0:00:15	Number of Break agents	>= 1	-
09:20:32	9:20:37 AM	0:00:05	Number of DCP extensions	>= 1	-
09:33:41	9:34:03 AM	0:00:22	Quality of Service	<= 60	-
09:33:41	9:34:03 AM	0:00:22	Percentage of e-mails before threshold	<= 60	-
09:34:07	9:35:15 AM	0:01:08	Percentage of e-mails before threshold	<= 60	-
09:34:07	9:35:15 AM	0:01:08	Quality of Service	<= 60	-
09:35:46	9:36:47 AM	0:01:01	Number of Idle extensions	>= 1	-

Thursday, October 09, 2003 — Page 1-2

Figure 12.48 EXAMPLE OF "ALARMS (DETAILS)" REPORT – SELECTION BY SERVICE (1/2)



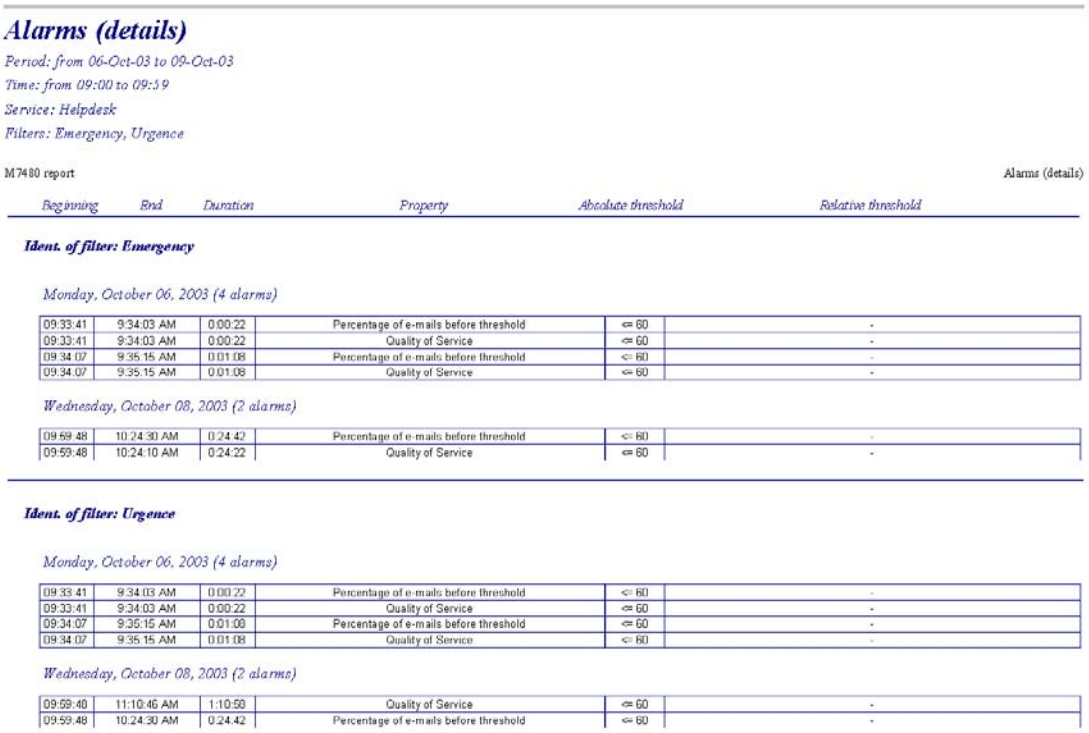
M7480 report — Alarms (details)

Beginning	End	Duration	Property	Absolute threshold	Relative threshold
09:36:37	9:37:17 AM	0:00:40	Number of Private extensions (In)	>= 1	-
09:37:07	9:37:37 AM	0:00:30	Number of Idle extensions	>= 1	-
09:37:22	9:37:42 AM	0:00:20	Number of Private extensions (Out)	>= 1	-
09:37:42	9:47:48 AM	0:10:06	Number of Idle extensions	>= 1	-
09:37:48	9:47:13 AM	0:09:25	Number of Private extensions (In)	>= 1	-
09:47:18	9:48:13 AM	0:00:55	Number of Private extensions (In)	>= 1	-
09:47:23	9:47:28 AM	0:00:05	Number of Private extensions (Out)	>= 1	-
09:47:58	9:48:03 AM	0:00:05	Number of Idle extensions	>= 1	-
09:48:03	9:48:08 AM	0:00:05	Number of Private extensions (Out)	>= 1	-
09:48:13	9:48:34 AM	0:00:21	Number of Private extensions (Out)	>= 1	-
Tuesday, October 07, 2003 (15 alarms)					
09:13:52	9:14:02 AM	0:00:10	Number of Break agents	>= 1	-
09:14:07	9:25:04 AM	0:10:57	Number of DCP extensions	>= 1	-
09:24:59	9:25:14 AM	0:00:15	Number of Break agents	>= 1	-
09:25:09	9:28:42 AM	0:03:33	Number of Ready agents	>= 1	-
09:27:20	9:28:11 AM	0:00:51	Number of DCP extensions	>= 1	-
09:27:35	9:27:41 AM	0:00:06	Number of Private extensions (Out)	>= 1	-
09:28:11	9:28:21 AM	0:00:10	Number of Break agents	>= 1	-
09:31:43	9:32:18 AM	0:00:35	Number of DCP extensions	>= 1	-
09:31:58	9:32:13 AM	0:00:15	Number of extensions On Hold	>= 1	-
09:32:08	9:32:23 AM	0:00:15	Number of Break agents	>= 1	-
09:49:08	9:49:33 AM	0:00:25	Number of Private extensions (In)	>= 1	-
09:49:28	9:49:43 AM	0:00:15	Number of Idle extensions	>= 1	-
09:49:33	9:49:53 AM	0:00:20	Number of Private extensions (Out)	>= 1	-
09:49:48	9:50:36 AM	0:00:47	Number of Idle extensions	>= 1	-
09:50:03	9:50:13 AM	0:00:10	Number of Private extensions (In)	>= 1	-
Wednesday, October 08, 2003 (2 alarms)					
09:69:48	10:24:10 AM	0:24:22	Quality of Service	<= 60	-
09:69:48	10:24:30 AM	0:24:42	Percentage of e-mails before threshold	<= 60	-

Thursday, October 09, 2003 — Page 2-2

FIGURE 12.48 EXAMPLE OF "ALARMS (DETAILS)" REPORT – SELECTION BY SERVICE (2/2)

Selection by filter



Alarms (details)

Period: from 06-Oct-03 to 09-Oct-03
Time: from 09:00 to 09:59
Service: Helpdesk
Filters: Emergency, Urgence

M7480 report — Alarms (details)

Beginning	End	Duration	Property	Absolute threshold	Relative threshold
Ident. of filter: Emergency					
Monday, October 06, 2003 (4 alarms)					
09:33:41	9:34:03 AM	0:00:22	Percentage of e-mails before threshold	<= 60	-
09:33:41	9:34:03 AM	0:00:22	Quality of Service	<= 60	-
09:34:07	9:35:15 AM	0:01:08	Percentage of e-mails before threshold	<= 60	-
09:34:07	9:35:15 AM	0:01:08	Quality of Service	<= 60	-
Wednesday, October 08, 2003 (2 alarms)					
09:59:48	10:24:30 AM	0:24:42	Percentage of e-mails before threshold	<= 60	-
09:59:48	10:24:10 AM	0:24:22	Quality of Service	<= 60	-
Ident. of filter: Urgence					
Monday, October 06, 2003 (4 alarms)					
09:33:41	9:34:03 AM	0:00:22	Percentage of e-mails before threshold	<= 60	-
09:33:41	9:34:03 AM	0:00:22	Quality of Service	<= 60	-
09:34:07	9:35:15 AM	0:01:08	Percentage of e-mails before threshold	<= 60	-
09:34:07	9:35:15 AM	0:01:08	Quality of Service	<= 60	-
Wednesday, October 08, 2003 (2 alarms)					
09:59:48	11:10:46 AM	1:10:58	Quality of Service	<= 60	-
09:59:48	10:24:30 AM	0:24:42	Percentage of e-mails before threshold	<= 60	-

Figure 12.49 EXAMPLE OF "ALARMS (DETAILS)" REPORT – SELECTION BY FILTER

12.3 DESCRIPTION OF STATISTICAL TABLES AND DATABASES

12.3.1 PRESENTATION

12.3.1.1 OBJECT OF THIS APPENDIX

This appendix describes in detail the statistical tables and database used, in particular, by the **Statistics Builder** application:

- The circular database **"StatBuffer.cst"** (see Section 12.3.2).
- The standard database**"LongTermStatistics.mdb"** (see Section 12.3.3).

12.3.1.2 REMINDER ON "STANDARD" REPLICATION OF STATISTICAL TABLES

The different applications do not access the statistics in the same tables. The M5000 CC Server accesses statistics in a cyclical database (StatBuffer.CST) so as to function on a stable system. Client applications do not have access to this database.

The Statistics Builder application copies the statistics circular database in the database:

- standard "LongTermStatistics.mdb".

This copy of records is done every 15 seconds, except during the "Night Mode" (see § 8.3.8.4) where no record copy is done.

12.3.1.3 CONSOLIDATING RECORDS

The Statistics Builder application consolidates the "StatBuffer.cst" circular database in the "LongTermStatistics.mdb" database. This consolidation of records is done every 15 seconds, except during the night mode where no record consolidation is done. Only 9 statistical tables in the LongTermStatistics.mdb database are concerned by the consolidation: They are easily visible, as they have a " * " at the end of their name (* = Quarter, HalfHour, Hour, Day, Week, Month):

- InboundCallsPerServicePer* (see § 12.3.3.15),
- CallsDurationsPer* (see § 12.3.3.16),
- OutboundVoiceCallsPerServicePer* (see § 12.3.3.17),
- CallsPerAgentPerServicePer* (see § 12.3.3.18),
- AgentCallsDurationsPer* (see § 12.3.3.19),
- StatusesAndActivitiesPerAgentPer* (see § 12.3.3.20),
- ActivityCodePerAgentPer* (see § 12.3.3.21),
- ClosingStatusesPerServicePer* (see § 12.3.3.22),
- PortsLoadAndSaturationPeriodsPerCallServerPer* (see § 12.3.3.23).

12.3.2 DESCRIPTION OF THE STATISTICAL TABLES IN THE "STATBUFFER.CST" DATABASE

The different statistical tables in the "StatBuffer.cst" database:

Tableau 12.67 LIST OF THE STATISTICAL TABLES IN THE "STATBUFFER.CST" DATABASE (1/2)

Name	Description
USER_LOG_STATUS (see § 12.3.2.1)	This table contains statistics about the status of the agents at log in or log out.
USER_ACTIVITY_STATUS (see § 12.3.2.2)	This table stores information about the activity of the agents (Post Call Processing, Ready, Not Ready, Break). Each time the activity changes, a new record is created and new reports are added to the Report Module to obtain summarized and detailed views of the PCP (Post Call Processing), Ready, Not Ready and Break statuses.
Service_CALL (see § 12.3.2.3)	For each inbound Service, the Call table stores information about the calls. Each call corresponds to one record in the table.
Service_CALLResult (see § 12.3.2.4)	For each inbound Service, the Call table stores information about the calls. Each call corresponds to one record in the table.
Conversations (see § 12.3.2.5)	This table contains statistics on each inbound call on an agent's phone (e.g. the call's arrival time, conversation time...). There is one record per call and per phone (if the call is transferred to another, two records will be generated).

Tableau 12.67 LIST OF THE STATISTICAL TABLES IN THE "STATBUFFER.CST" DATABASE (2/2)

Name	Description
Presentations (see § 12.3.2.6)	This table contains statistics about every presented call on the agent's phone (e.g. presentation duration and result...). There is one record per call presented.
IVRPortsLoad (see § 12.3.2.7)	This table contains data related to the M5000 CC Media Server (name), the number of calls per IVR port and the number of used ports.
CallServerSaturationPeriods (see § 12.3.2.8)	This table contains data related to the duration of the saturation (periods in which all ports are busy).
EmailTreatmentByAgents (see § 12.3.2.9)	This table contains all information about e-mail processing by agent(s). There is one record per E-mail and per agent (e.g. if the E-mail is distributed to two agents, there will be two records).
Opening_Closing_Status (see § 12.3.2.10)	This table contains all the information related with the opening and closing of a Service of the inbound type (Reject 21 functionality, CSTAconfiguration only). A record is added to this table whenever the opening/closing status of the service changes or when the reason for which the Service status is worth such a value has changed.
Service_REJECTEDCALL (see § 12.3.2.11)	For each inbound Service, the RejectedCall table stores information about the rejected calls. Each call corresponds to one record in the table.
CallsFilters (see § 12.3.2.12)	This table contains the passing filter identifiers of each call linked to a Service.
CallsFilters (see § 12.3.2.12)	This table contains the passing filter identifiers of each call linked to a Service.

12.3.2.1 USER_LOG_STATUS TABLE

The "USER_LOG_STATUS" table is located in the M5000 CC File Structure, in the "StatBuffer.cst" files of the "Statistics" directory.

A new entry is added in the table each time an agent logs in or out.

The variables stored in the table are:

Tableau 12.68 USER_LOG_STATUS TABLE (1/2)

Name	Type	Description
UserId	Text	Identifier of the agent to whom the call has been transferred(e.g. agent's initials)
UserName	Text	Name of the agent to whom the call has been transferred (e.g. Peter).
LogStatus	Number (Whole, long)	Describes the new status: 0 = the agent has logged in, 1 = the agent has logged out
LogStatusTime	Date / Time	Date / Time when the above-mentioned transition took place
PhoneId	Text	Phone on which the agent has logged in (e.g. KEYP246)
LoginDuration	Number (Whole, long)	The duration during which the agent was logged in, only > 0 when Logstatus = 1
RecordNumber	Number (Whole, long)	Number of the entry in the DB (not used)

Tableau 12.68 USER_LOG_STATUS TABLE (2/2)

Name	Type	Description
AssignedServices	Memo	Memo field that contains all services for which the agent was assigned in the Production version (see example below). Each Service identifier is enclosed in brackets [ ]. If the agent is assigned in the Production version of no Service, this field contains a zero-length string.
AssignmentDuration	Number (Whole, long)	Number that contains the duration of the assignment, in seconds (see example below).
LogStatusTimeHour	Number (Whole, long)	These fields have been added to improve access to statistical reports and not for the M5000 CC end user.
LoginTime	Date / Time	
LoginTimeHour	Number (Whole, long)	
NewActivity	Number (Whole, long)	The agent's activity at the end of the recording interval
NewActivityCode	Number (Whole, long)	The agent's activity code at the end of the recording interval
LogStatus	Number (Whole, long)	Agent status
PreviousDuration	Number (Whole, long)	Total duration of LogStatus, PreviousActivityStatus, PreviousActivityCodeStatus
PreviousForcedChange	True/False	Indicates whether or not the agent's activity or status at the beginning of the recording interval was forced by the system.
NewForcedChange	True/False	Indicates whether or not the agent's activity or status at the end of the recording interval was forced by the system.
PreviousGlobalExtensionStatus	Number (Whole, long)	The global status of the agent's extensions at the beginning of the recording interval
NewGlobalExtensionStatus	Number (Whole, long)	The global status of the agent's extensions at the end of the recording interval
PreviousGlobalExtensionDuration	Number (Whole, long)	Total time during which the global status of the agent's extensions was equal to PreviousGlobalExtensionStatus

The goal of the last two fields is to get statistics on how much time the agents have worked for the different services.

When the assignment of an agent changes (examples: the service manager changes the production version or the assignment of the agent), a new record is added. This record is of the type LogStatus = 2. It contains the services in which the agent was assigned to the Production version just before the change and the duration of that assignment.

Example:

Tableau 12.69 EXAMPLES OF "LOGSTATUS "OF THE "USER_LOG_STATUS" TABLE

UserId	UserName	Log Status	LogStatus Time	PhoneId	Login Duration	Record Number	Assigned Services	Assignment Duration
U100	U100	0	17/04/00 13:39:54	KEY5030	0	0	[Inbound1] [Inbound2]	0
U100	U100	2	17/04/00 13:40:14		0	0	[Inbound1] [Inbound2]	20
U100	U100	2	17/04/00 13:40:24		0	0	[Inbound1]	10
U100	U100	1	17/04/00 13:40:54	KEY5030	60	0	[Inbound1] [Inbound2]	30

- Line 1: U100 logs in (LogStatus=0) and, at this time, he is assigned to the production version of services Inbound1 and Inbound2
- Line 2: U100 is unassigned (LogStatus=2) from Inbound2 (we can see that he was assigned to Inbound1 and Inbound2 during 20 seconds in the first interval)
- Line 3: U100 is reassigned (LogStatus=2) to Inbound2 (we can see that he was assigned to Inbound1 during 10 seconds in the second interval)
- Line 4: U100 logs out (LogStatus=1) (we can see that he was logged in during 60 seconds and assigned to Inbound1 and Inbound2 during 30 seconds in the third interval)

12.3.2.2 USER_ACTIVITY_STATUS TABLE

The "USER_ACTIVITY_STATUS" table is located in the M5000 CC File Structure, in the "StatBuffer.cst" files of the "Statistics" directory.

This table is expanded every time the status of a logged-in agent changes.

Information is being written about the status of an agent before the status transition.

Tableau 12.70 USER_ACTIVITY_STATUS TABLE

Name	Type	Description
User	Text	Identifier of the agent to whom the call has been transferred(e.g. agent's initials)
UserName	Text	Name of the agent to whom the call has been transferred (e.g. Peter).
PreviousActivityStatus	Number (Whole, long)	His status until now (before he changed status)
PreviousActivityEndTime	Date / Time	Time when the agent changed status
PhoneId	Text	Name of the agent to whom the call has been transferred (e.g. KEYP246)
PreviousActivityDuration	Number (Whole, long)	The period during which the agent was in the above-mentioned status
RecordNumber	Number (Whole, long)	Number of the entry in the DB (not used)
PreviousActivityCodeStatus	Number (Whole, long)	Status of the agent's previous activity code
AllBreakTimeUsed	Yes / No	Used to check the agent's break time
PreviousActivityEndTimeHour	Number (Whole, long)	These fields have been added to improve access to statistical reports and not for the M5000 CC end user.
PreviousActivityBeginTime	Date / Time	
PreviousActivityBeginTimeHour	Number (Whole, long)	
NewActivity	Number (Whole, long)	The agent's activity at the end of the recording interval
NewActivityCode	Number (Whole, long)	The agent's activity code at the end of the recording interval
LogStatus	Number (Whole, long)	Agent status
PreviousDuration	Number (Whole, long)	Total duration of LogStatus, PreviousActivityStatus, PreviousActivityCodeStatus
PreviousForcedChange	True/False	Indicates whether or not the agent's activity or status at the beginning of the recording interval was forced by the system.
NewForcedChange	True/False	Indicates whether or not the agent's activity or status at the end of the recording interval was forced by the system.
PreviousGlobalExtensionStatus	Number (Whole, long)	The global status of the agent's extensions at the beginning of the recording interval
NewGlobalExtensionStatus	Number (Whole, long)	The global status of the agent's extensions at the end of the recording interval
PreviousGlobalExtensionDuration	Number (Whole, long)	Total time during which the global status of the agent's extensions was equal to PreviousGlobalExtensionStatus

12.3.2.3 SERVICE_CALL TABLE

The "SERVICE_CALL" table is located in the M5000 CC File Structure, in the "StatBuffer.cst" files of the "Statistics" directory.

The variables stored in the statistics are:

- all intrinsic variables,
- global variables that the Service manager has defined as being saved in the statistics.

A new record is created for every call. At the end of the call (after call drop, PCP, end of agent's script), the Service status is being described.

Tableau 12.71 "SERVICE_CALL TABLE" (1/6)

Name	Type	Description
RecordNumber	Number (Integer, long)	Number of the entry in the DB (not used)
CallServerName	Text	Name of the M5000 CC Media Server (e.g. M5000 CC)
ServiceVersion	Number (Integer)	Version of active script
Archive	Yes / No	Not used
AgentId	Memo	Identifier of the agent to whom the call has been transferred(e.g. agent's initials)
AgentName	Memo	Name of the agent to whom the call has been transferred (e.g. Peter).
AgentPhone	Memo	Name of the agent to whom the call has been transferred (e.g. KEYP246)
AgentExtension	Memo	Extension of the agent to whom the call has been transferred (e.g. KEYP246)
CallId	Memo	Call identifier (e.g.: KEY2786) ; a new number is assigned to the call.
CallTime	Date / Time	Call arrival date/time
CallDNIS	Memo	Number dialled to contact a Service.
CallDisconnectionTime	Date / Time	Date/time of the end of the physical call
CallEndPCPTime	Date / Time	Date/time of the end of the PCP period
CallAgentScriptEndTime	Date / Time	Date/time of the end of the User Interface script
CallPCPDuration	Number (Double)	Duration of the PCP period (in seconds)
CallAgentDuration	Number (Double)	Duration of the agent period (including PCP, excluding offline scripting) (in seconds)
CallServiceId	Memo	Service identifier (e.g. Proxy Club) CallServiceVersion (8) Service version number (of script)
CallServiceVersion	Number (Double)	Service version number
CallDisconnectionStatus	Number (Double)	Status of call when it has been terminated: 0=IVR; 1=Wait; 2&3=Reserved; 4=DCP (conversation); 5=Hold; 6=PCP
CallDisconnectionNodeId	Memo	Identifier of the current node when the call has been disconnected (e.g.: KEY33)
CallDisconnectionTreeId	Memo	Identifier of the current tree when the call has been disconnected (e.g. Start_Tree)
CallCLID	Memo	Caller number (e.g.: 0001234567)

Tableau 12.71 "SERVICE_CALL TABLE" (2/6)

Name	Type	Description
CallWaitingTime	Date / Time	Date/time of the beginning of the waiting period (or CallTime if no transfer node has reset this value)
CallTransferTime	Date / Time	Date/time of the call transfer
CallUserUserInfo	Memo	User to User Signaling associated with the call
CallWaitingDuration	Number (Double)	Duration of the waiting period (in seconds), difference between the 2 previous times
CallCallServerDuration	Number (Double)	Total duration of the call (not only the physical call) (in seconds) ~CallWaitingDuration
ServiceINICallNumber	Number (Double)	Service status: Number of calls in the IVR status
ServiceWAITCallNumber	Number (Double)	Service status: Number of calls in the Wait status
ServiceRSVCallNumber	Number (Double)	Service status: Number of calls in the Reserved status
ServiceACDCallNumber	Number (Double)	Service status: Number of calls in the DCP (conversation) status
ServiceHOLDCallNumber	Number (Double)	Service status: Number of calls in the On Hold status
ServicePCPCallNumber	Number (Double)	Service status: Number of calls in the PCP status
ServiceIDLEExtensionNumber	Number (Double)	Service status: Number of extensions in the Idle status
ServiceRSVExtensionNumber	Number (Double)	Service status: Number of extensions in the Reserved status
ServiceACDExtensionNumber	Number (Double)	Service status: Number of extensions in the DCP(conversation) status
ServiceHOLDExtensionNumber	Number (Double)	Service status: Number of extensions in the On Hold status
ServicePRVExtensionNumber	Number (Double)	Service status: Number of extensions in the Idle status
ServicePrivateInExtensionNumber	Number (Double)	Service status: Number of extensions with the incoming Private status (receiving a private call, not distributed by the M5000 CC)
ServicePrivateOutExtension Number	Number (Double)	Service status: Number of extensions with the outgoing Private status (receiving a private call, not distributed by the M5000 CC)
ServiceREADYAgentNumber	Number (Double)	Service status: Number of agents in the Ready status
ServiceNOTREADYAgentNumber	Number (Double)	Service status: Number of agents in the Not Ready status
ServicePCPAgentNumber	Number (Double)	Service status: Number of agents in the PCP status
ServiceBREAKAgentNumber	Number (Double)	Service status: Number of agents in the BREAK status

Tableau 12.71 "SERVICE_CALL TABLE" (3/6)

Name	Type	Description
ServiceQuality	Number (Double)	Service status: Quality of Service (not taking into account calls that are not to be transferred). Percentage of calls that didn't have to wait longer than the threshold
ServiceAverageWaitingTime BeforeAnswer	Number (Double)	Service status: average waiting duration (not taking into account calls that are not to be transferred)
ServiceAverageWaitingTime BeforeAbort	Number (Double)	Service status: average waiting duration before call abandon
CallToTransfer	Number (Double)	If CallToTransfer = 0, the call does not need to be transferred (pure IVR call) or the transfer has succeeded. If CallToTransfer <> 0, then the call has to be transferred normally
ServiceToTransferCallNumber	Number (Double)	Service status: number of calls not transferred yet, for which CallToTransfer <> 0
ServiceNotToTransferCallNumber	Number (Double)	Service status: Number of calls not transferred yet for which CallToTransfer = 0
ServiceLongestWaitTimeBefore Aband	Number (Double)	Service status: maximum wait time (see Sheet U-477) among all calls logged off before transfer (CallToTransfer <> 0). This parameter is calculated based on all calls abandonned over a fixed period (this period is related with a frequency which can be set in the M5000 CC Service Manager).
ServiceLongestWaitTime BeforeAnswer	Number (Double)	Service status: longest waiting time among all successfully transferred calls. This parameter is calculated considering all calls that were transferred during a fixed period (this period is linked to a frequency that can be set by the M5000 CC Service Manager).
ServiceLongestWaitTime StillWaiting	Number (Double)	Service status: longest waiting time among all calls that are not transferred yet nor abandoned (CallToTransfer <> 0), all calls still waiting at the moment of the Service status calculation are examined.
ServiceAbortPercentage	Number (Double)	Service status: Percentage of abandoned calls
NumberOfTransferAgentToAgent	Number (Double)	Number of agent to agent transfers for a call
EMailImportance	Number (Double)	Importance of the message
EMailSenderAddress	Memo	Sender’s SMTP Address
EMailSenderName	Memo	Sender’s name as defined in the E-mail
EMailMessageSize	Number (Double)	Size of the message in bytes
EMailMessageSubject	Memo	Subject of the message
EMailMessageBody	Memo	Message body: E-mail content without any attachment
EMailMessageType	Memo	Type of message: E-mail = 1 and transformed fax = 2
EMailTimeReceived	Date / Time	Date/time the message was received

Tableau 12.71 "SERVICE_CALL TABLE" (4/6)

Name	Type	Description
EMailTimeSent	Date / Time	Date/time of sending of the message
EMailNumberOfAttachments	Number (Double)	Number of attached files
EMailMailboxName	Memo	Name of mailbox where e-mails arrive (see Section 1.4)
EMailRecipAddressesInString	Memo	String of all recipients SMTP addresses of the message (in "To" and "Cc")
EMailRecipNamesInString	Memo	String of all recipients names of the message (in "To" and "Cc")
EMailHandlingBeginTime	Date / Time	Date/time when the e-mail is handled by M5000 CC
EMailHandlingEndTime	Date / Time	Date/time of end of e-mail processing by M5000 CC
WebIPAddress	Memo	IP address of the machine connected to the contact centre via M5000 CC WebCall Service. This information can facilitate synchronization with a web session started on the same PC.
WebSessionId	Memo	Id of the web session (similar to the CallId for vocal session)
WebSessionBeginTime	Date / Time	The web session start time (i.e. begin time of the script)
WebSessionEndTime	Date / Time	End time of the web session. (i.e. begin time of the script)
ServiceTotalCallsNumber	Number (Double)	Service status: Total number of voice calls for the Service. It's the sum of all the variables concerning the different calls statuses (PCP, Hold, etc.).
ServiceEmailsServerNumber	Number (Double)	Service status: The number of E-mails in the Server status
ServiceEmailsWaitNumber	Number (Double)	Service status: Number of E-mails being in Wait status
ServiceEmailsReservedNumber	Number (Double)	Service status: Number of E-mails being in Reserved status
ServiceEmailsUserNumber	Number (Double)	Service status: Number of E-mails in the User status
ServiceEmailsNumber	Number (Double)	Service status: Total number of E-mails. This number is equal to the sum of the four previous variables
ServiceEmailsLongest TreatmentDuration	Number (Double)	Service status: maximum processing duration for all the e-mails fully managed (in the time interval defined in the M5000 CC Administrator application: time for calculation of average values, see Sheet U-312)
ServiceEmailsAverage TreatmentDuration	Number (Double)	Service status: average processing duration for all the e-mails fully managed (in the time interval defined in the M5000 CC Administrator application: time for calculation of average values, see Sheet U-312)

Tableau 12.71 "SERVICE_CALL TABLE" (5/6)

Name	Type	Description
ServiceEmailsInProcessLongest TreatmentDuration	Number (Double)	Service status: maximum processing duration among all the E-mails being processed
ServiceEmailsQOSThreshold	Number (Double)	Service status: the value of the E-mail quality of Service threshold. A value in days, hours, minutes and seconds indicating a good lapse of time for an E-mail to be treated.
ServiceEmailsPercentage BeforeThreshold	Number (Double)	Service status: percentage of e-mails processed before reaching the e-mails threshold defined, and in the time interval defined in the M5000 CC Administrator application: time for calculating the average values, see Sheet U-312 (see also ServiceEmailsQOS Threshold in Sheet U-417).
ServiceEmailsPercentage AfterThreshold	Number (Double)	Service status: percentage of e-mails processed after reaching the e-mails threshold defined, and in the time interval defined in the M5000 CC Administrator application: time for calculating the average values, see Sheet U-312 (see also ServiceEmailsQOS Threshold in Sheet U-417).
ServiceWebAssocSessions Number	Number (Double)	Service status: number of opened web sessions that are associated to a voice session
ServiceWebNonAssocSessions Number	Number (Double)	Service status: number of opened web sessions that aren't associated to a voice session
ServiceWebSessionNumber	Number (Double)	Service status: total number of opened web sessions. It's the sum of the ServiceWebAssocSessionsNumber and the ServiceWebNonAssocSessionsNumber variables.
CallTransferringServerName	Memo	Name of the remote Server from which a call is transferred
CallDestinationServerName	Memo	Name of the remote Server where the call is transferred
NetworkId	Memo	Name of the Server where the call is first received, followed by the Call Id
CallTreatment	Memo	Property specifying if the call is processed locally or remotely
NumberOfRemoteTransfer	Number (Double)	Number of remote transfers which have been done for the call
CallTimeHour	Number (Integer, long)	These fields have been added to improve access to statistical reports and not for the M5000 CC end user.
EMailTimeReceivedHour		
WebSessionBeginTimeHour		
CallDisconnectingParty	Number (Double)	Indicates the party that on-hooked the call. The call was hung up first by the agent, the caller or the hung up was not detected (0 = no hang up detected, 1 = hang up by the agent, 2 = hung up by the caller, 3 = transfered by an agent to a non-agent). Valid only in the CSTAconfiguration.

Tableau 12.71 "SERVICE_CALL TABLE" (6/6)

Name	Type	Description
CallerFirstName	Memo	Correspondent's first name if directory search is activated (directory server defined with resolution authorisation in the service) and if this search yields a result.
CallerLastName	Memo	Correspondent's surname if directory search is activated (directory server defined with resolution authorisation in the service) and if this search yields a result.

12.3.2.4 "SERVICE_CALLRESULT" TABLE

The "Service_CALLResult" table is located in the M5000 CC File Structure, in the "StatBuffer.cst" files of the "Statistics" directory.

The variables stored in the statistics are:

- all intrinsic variables
- global variables that the Service manager has defined as being saved in the statistics.

For every call, a new record is created; at the end of the call (after call drop, PCP, end of agent's script), the Service status is also being described.

Tableau 12.72 "SERVICE_CALLRESULT" TABLE (1/5)

Name	Type	Description
RecordNumber	Number (Whole, long)	Number of the entry in the DB (not used)
VersionType	Number (Whole, long)	Type of the active version of the script
CallServerName	Text	Name of the M5000 CC Media Server (e.g. M5000 CC)
AgentID	Memo	Identifier of the agent to whom the call has been transferred
AgentName	Memo	Name of the agent to whom the call has been transferred (e.g. Peter).
AgentPhone	Memo	Name of the agent to whom the call has been transferred (e.g. KEYP246)
AgentExtension	Memo	Extension of the agent to whom the call has been transferred (e.g. KEYP246)
ServiceRSVCallNumber	Number (Double)	Service status: Number of calls in the Reserved status
ServiceACDCallNumber	Number (Double)	Service status: Number of calls in the DCP (conversation) status
ServiceHOLDCallNumber	Number (Double)	Service status: Number of calls in the On Hold status
ServicePCPCallNumber	Number (Double)	Service status: Number of calls in the PCP status
ServiceIDLEExtensionNumber	Number (Double)	Service status: Number of extensions in the Idle status
ServiceRSVExtensionNumber	Number (Double)	Service status: Number of extensions in the Reserved status
ServiceACDExtensionNumber	Number (Double)	Service status: Number of extensions in the DCP(conversation) status

Tableau 12.72 "SERVICE_CALLRESULT" TABLE (2/5)

Name	Type	Description
ServiceHOLDExtensionNumber	Number (Double)	Service status: Number of extensions in the On Hold status
ServicePRVExtensionNumber	Number (Double)	Service status: Number of extensions in the Idle status
ServicePrivateInExtensionNumber	Number (Double)	Service status: Number of extensions in the Private in status (receiving a private call, not distributed by AGORA)
ServicePrivateOutExtension Number	Number (Double)	Service status: Number of extensions in the Private out status (receiving a private call, not distributed by AGORA)
ServiceREADYAgentNumber	Number (Double)	Service status: Number of agents in the Ready status
ServiceNOTREADYAgentNumber	Number (Double)	Service status: Number of agents in the Not Ready status
ServicePCPAgentNumber	Number (Double)	Service status: Number of agents in the PCP status
CallId	Memo	Call identifier (e.g.: KEY2786) ; a new number is assigned to each call.
CallTime	Date / Time	Date/time when M5000 CC initiates the call to an agent
CallDNIS	Memo	Number dialled by M5000 CC
CallDisconnectionTime	Date / Time	Date/time of the end of the physical call
CallEndPCPTime	Date / Time	Date/time of the end of the PCP period
CallAgentScriptEndTime	Date / Time	Date/time of the end of the User Interface script
CallPCPDuration	Number (Double)	Duration of the PCP period (in seconds)
CallAgentDuration	Number (Double)	Duration of the agent period (including PCP, excluding offline scripting) (in seconds)
CallServiceId	Memo	Service identifier (e.g. Proxy Club)
CallServiceVersion	Number (Double)	Service version number (of script) (err.)
CallDisconnectionStatus	Number (Double)	Status of call when it has been terminated: 0=IVR; 1=Wait; 2&3=Reserved; 4= DCP (conversation); 5=Hold; 6=PCP
CallDisconnectionNodeId	Memo	Identifier of the current node when the call has been disconnected (e.g.: KEY33)
CallDisconnectionTreeId	Memo	Identifier of the current tree when the call has been disconnected (e.g. Start_Tree)
CallDialListId	Memo	Identifier of the call in the dial list
CallDialListCreationTime	Date / Time	Date/time of the creation of the call in the dial list
CallPriority	Number (Double)	Priority of the call (0-99)
CallScheduledCallTime	Date / Time	Date/time for which the call was scheduled (i.e. the value of CallNextCallTime of the previous try)

Tableau 12.72 "SERVICE_CALLRESULT" TABLE (3/5)

Name	Type	Description
CallPresentationTime	Date / Time	Date/time the script is presented to the agent; M5000 CC tries to reach the agent who must make an outgoing call.
CallLatestCallTime	Date / Time	Date/time of the latest try for the call
CallLatestCallResult	Number (Double)	Result of the latest try for the call: 0=First attempt; 1=Busy; 2=No answer; 3=Connect KO; 4=Bad number; 5=Network error; 6=Connect OK
CallPersonName	Memo	Name of the person to contact
CallLeftConnects	Number (Double)	Number of connections still allowed
CallLeftRetries	Number (Double)	Number of retries still allowed
CallResult	Number (Double)	Call result receives a value from the M5000 CC Media Server (at execution of the MakeOutboundCall node) and can be modified later on by the agent script (in an Assignment node).
CallNextCallTime	Date / Time	Date/time of the next retry (if the call result is neither *Connect OK nor Bad number).*
CallTeamID	Memo	Identifier of the team of the agent to which the call has been transferred
CallAgentID	Memo	Identifier of the agent to whom the call has been transferred
ServiceDialListNumber	Number (Double)	Total number of calls in the dial list. This intrinsic variable gets the total number of calls in the dial list.
ServiceDialListNotAccessed Number	Number (Double)	Number of outbound calls not accessed by the system yet (call result = 0)
ServiceDialListNotAccessed Percentage	Number (Double)	Ratio between the number of outbound calls not accessed by the system yet and the total number of calls in the dial list.
ServiceDialListTerminatedNumber	Number (Double)	Number of terminated outbound calls. So, the only calls taken into account are those whose final state is 4 (= Bad Number), 6 (= Connect OK), 8 (= Cancelled deleted) or those for which no more retry is scheduled (because either CallLeftRetries or CallLeftConnects has reached zero)
ServiceDialListTerminated Percentage	Number (Double)	Ratio between the number of terminated outbound calls and the total number of calls in the dial list
ServiceDialListPendingNumber	Number (Double)	Number of pending calls. These calls have a call result different from 0 (=First Attempt), 4 (= Bad Number), 6 (= Connect OK), 8 (= Canceled deleted). CallLeftRetries and CallLeftConnects are also different of 0..
ServiceDialListPendingPercentage	Number (Double)	Ratio between the number of pending calls and the total number of calls in the dial list

Tableau 12.72 "SERVICE_CALLRESULT" TABLE (4/5)

Name	Type	Description
ServiceDialListDueNumber	Number (Double)	Number of due calls (having a fixed and overdue next call time). These calls have a call result different from 0 (=First Attempt), 4 (= Bad Number), 6 (= Connect OK), 8 (= Canceled deleted). CallLeftRetries and CallLeftConnects are also different of 0..
ServiceDialListDuePercentage	Number (Double)	Ratio between the number of due calls to the total number of calls in the dial list
ServiceDialListSucceededNumber	Number (Double)	Number of successful calls (terminated calls having Connect OK as call result)
ServiceDialListSucceeded Percentage	Number (Double)	Ratio between the number of succeeded calls and the total number of calls in the dial list
ServiceDialListBusyNumber	Number (Double)	Number of calls whose call result equals to 1 = Busy
ServiceDialListBusyPercentage	Number (Double)	Ratio between the number of busy calls and the total number of calls in the dial list
ServiceDialListNoAnswerNumber	Number (Double)	Number of calls having the call result equal to 2 = No answer
ServiceDialListNoAnswer Percentage	Number (Double)	Ratio between the number of Unanswered calls and the total number of calls in the dial list
ServiceDialListConnectKONumber	Number (Double)	Number of calls whose result equals to 3 = Connect KO. Number OK but the right person is not at home.
ServiceDialListConnectKO Percentage	Number (Double)	Ratio between the number of KO calls and the total number of calls in the dial list
ServiceDialListBadNumberNumber	Number (Double)	Number of calls whose call result equals to 4 = Bad Number
ServiceDialListBadNumber Percentage	Number (Double)	Ratio between the number of Bad number calls and the total number of calls in the dial list
ServiceDialListNetworkError Number	Number (Double)	Number of calls whose call result equals to 5 = Network error
ServiceDialListNetworkError Percentage	Number (Double)	Ratio between the number of Network error calls and the total number of calls in the dial list
ServiceDialListDeletedNumber	Number (Double)	Number of calls having the call result equal to 7 = Canceled, deleted
ServiceDialListDeletedPercentage	Number (Double)	Ratio between the number of deleted calls and the total number of calls in the dial list
ServiceDialListTimeOutNumber	Number (Double)	Number of calls whose call result equals to 9 = Presentation time out
ServiceDialListTimeOutPercentage	Number (Double)	Ratio between the number of Timeout calls and the total number of calls in the dial list
ServiceDialListNoCallServer Number	Number (Double)	Number of calls whose call result equals to 10 = No M5000 CC Media Server
ServiceDialListNoCallServer Percentage)	Number (Double)	Ratio between the number of No M5000 CC Media Server calls and the total number of calls in the dial list

Tableau 12.72 "SERVICE_CALLRESULT" TABLE (5/5)

Name	Type	Description
CallFrench	Number (Double)	This field contains information that is extracted from the dial list and information about the knowledge of the French language of the person whom the agent has to call. This field also determines which agent has to make the call. The information can be changed after the call is completed. This is handy when the information in the dial list was not correct.
CallEnglish	Number (Double)	This field contains information that is extracted from the dial list and information about the knowledge of the English language of the person whom the agent has to call. This field also determines which agent has to make the call. The information can be changed after the call is completed. This is handy when the information in the dial list was not correct.
CallSkill	Number (Double)	This field contains information that is extracted from the dial list and information about the knowledge of the skill of the person whom the agent has to call. This field also determines which agent has to make the call. The information can be changed after the call is completed. This is handy when the information in the dial list was not correct.
CallDisconnectingParty	Number (Double)	Indicates the party that on-hooked the call. The call was hung up first by the agent or the person called (1 = hung up by the agent, 2 = hung up by the caller). Valid only in the CSTAconfiguration.

12.3.2.5 CONVERSATIONS TABLE

The "Conversations" table is located in the M5000 CC File Structure, in the "StatBuffer.cst" files of the "Statistics" directory.

For every call (as well inbound as outbound), a number of parameters containing overview information are added to the DB as a new entry.

The variables stored in the statistics are:

Tableau 12.73 "CONVERSATIONS" TABLE

Name	Type	Description
AgentID	Text	Identifier of the agent to whom the call has been transferred
ExtensionDN	Text	Number of the extension where the call was eventually hosted
ServiceID	Text	Service identifier
ServiceVersion	Number (Integer, long)	Version of active script
ServiceVersionType	Number (Integer)	Version status of the active script (e.g: "Production", Beta)
CallBeginTime	Date / Time	Time when the call started
CallEndTime	Date / Time	Time when the call stopped
ConversationDuration	Number (Integer, long)	Difference between the CallEndTime and CallBeginTime minus the HoldDuration
HoldDuration	Number (Integer, long)	Period in which the call has been put On Hold
Incoming	Yes / No	Inbound / outbound
TAPICallID	Number (Integer, long)	TAPI call identifier to use
CLID	Text	Calling set number
DNIS	Text	The number which was dialled in order to establish a communication with this Service
TransferAgentToAgent	Yes / No	If a transfer towards another agent has been performed during the conversation. 1=yes 0=no.
ExtensionType	Number (Integer, long)	Type of extensions. Possible values are: 1 = Agent, 2 = Client, 3 = Call pit message, 4 = Incoming call pit
CallBeginTimeHour	Number (Integer, long)	These fields have been added to improve access to statistical reports and not for the M5000 CC end user.
CallId	Memo	Call transfer identifier
CallTime	Date / Time	Time the ICD call was created
RemotePartyFirstName	Text	Correspondent's first name if directory search is activated (directory server defined with resolution authorisation in the service of for private calls) and if this search yields a result.
RemotePartyLastName	Text	Correspondent's last name if directory search is activated (directory server defined with resolution authorisation in the service of for private calls) and if this search yields a result.

12.3.2.6 "PRESENTATIONS" TABLE

The "Presentations" table is located in the M5000 CC File Structure, in the "StatBuffer.cst" file of the "Statistics" directory.

For every call (inbound or outbound), a number of parameters concerning the presentation of the call (until an agent takes the call), are added to the DB as a new entry. This table should provide more information about calls that never reach an agent.

The variables stored in the statistics are:

Tableau 12.74 "PRESENTATIONS" TABLE

Name	Type	Description
AgentID	Text	Identifier of the agent to whom the call has been transferred
ExtensionDN	Text	Number of the extension where the call was eventually hosted
ServiceID	Text	Service identifier (e.g: Proxy Club)
ServiceVersion	Number (Integer, long)	Version of active script
ServiceVersionType	Number (Integer)	Version status of the active script (e.g: "Production", Beta)
CallBeginTime	Date / Time	Time at which the destination phone started ringing
CallEndTime	Date / Time	Time at which the destination phone started ringing
PresentationDuration	Number (Integer, long)	Difference between the CallBeginTime and the CallEndTime
TransferResult	Number (Integer, long)	Transfer OK(1): Transfer succeeded; Pres. timeout(2): Presentation timeout reached; Canceled(3: Cancelled by client application; Disconnected Call(4): call disconnected by caller; DestinationBusy(5) (only with monitored transfer); #Error(other value): Any other error
CLID	Text	The caller's phone number.
DNIS	Text	Number dialled to set up a call
CallBeginTimeHour	Number (Integer, long)	These fields have been added to improve access to statistical reports and not for the M5000 CC end user.
CallId	Memo	Identifier of the call transferred
CallTime	Date / Time	Time the ICD call was created

12.3.2.7 IVRPORTSLOAD TABLE

The "IVRPortsLoad" table is located in the M5000 CC File Structure, in the "StatBuffer.cst" file of the "Statistics" directory.

In this table, the status of the ports is being checked at regular time intervals (specified in the M5000 CC Administrator application).

After the observation of the port parameters, some processing has to be done, what can also take some time.

The variables stored in the statistics are:

Tableau 12.75 IVRPORTSLOAD TABLE

Name	Type	Description
Time	Date / Time	Time when the number of occupied ports is being looked at.
CallServerName	Text	Name of the M5000 CC Media Server (e.g.: M5000 CC Media Server)
Calls/IVRPorts	Number (simple real)	Average number of calls per port (e.g.: interval = 5 minutes, nbr of ports = 6, Calls/IVRPorts = 1.5 => There has been a total of 9 calls for this 5 minutes period).
UsedPorts	Number (simple real)	Average of the number of ports used (in Erlang) (e.g: if the value of this parameter is 1.5, then 1.5 ports are used constantly to absorb all the traffic).
TimeHour	Number (Integer, long)	These fields have been added to improve access to statistical reports and not for the M5000 CC end user.

12.3.2.8 CALLSERVERSATURATIONPERIODS TABLE

The "CallServerSaturationPeriods" table is located in the M5000 CC File Structure, in the "StatBuffer.cst" files of the "Statistics" directory.

For every saturation period, an entry is recorded in the database, stating the begin time and the end time of the saturation period.

Saturation occurs when all the ports are busy.

The variables stored in the statistics are:

Tableau 12.76 CALLSERVERSATURATIONPERIODS TABLE

Name	Type	Description
StartTimeHour	Number (Integer, long)	Time when the number of occupied ports is being looked at.
CallServerName	Text	Name of the M5000 CC Media Server (e.g.: M5000 CC Media Server)
StartTime	Date / Time	Time when the saturation occurred.
EndTime	Date / Time	Time when an IVR port came available again.
Duration	Number (Integer, long)	EndTime-StartTime (duration)

12.3.2.9 EMAILTREATMENTBYAGENTS TABLE

The "EmailTreatmentByAgents" table is located in the M5000 CC File Structure, in the "StatBuffer.cst" database of the "Statistics" directory.

Data relating to E-mail processing by the agent are saved at the end of the E-mail user script. Whatever the result of the script (end, stop, cancel), the data will be saved (only if the E-mail is handled by a Service version in Production)

The variables stored in the statistics are:

Tableau 12.77 “EMAILTREATMENTBYAGENTS” TABLE (1/2)

Name	Type	Description
CallId	Text	The identifier of the E-mail
EmailHandlingBeginTime	Date / Time	The time when the M5000 CC Media Server begin to process the E-mail.
AgentId	Text	Agent Id
AgentName	Text	Name of the agent
AgentScriptBeginTime	Date / Time	The time when the agent begins to process the E-mail
AgentScriptEndTime	Date / Time	The time when the agent finishes to process the E-mail
AgentDuration	Number (Integer, long)	Duration spent by the agent to process the E-mail
ServiceId	Text	The identifier of the Service associated to the E-mail
ServiceVersion	Number (Integer, long)	The version of the Service to which the E-mail belongs
RecordNumber	Number (Integer, long)	Number of inputs in the DB
EmailHandlingBeginTimeHour	Number (Integer, long)	These fields have been added to improve access to statistical reports and not for the M5000 CC end user.

Tableau 12.77 “EMAILTREATMENTBYAGENTS” TABLE (2/2)

Name	Type	Description
AgentScriptBeginTimeHour	Number (Integer, long)	

12.3.2.10 "OPENING_CLOSING_STATUS" TABLE (REJECT 21)

The "Opening_Closing_Status" table can be found in the M5000 CC File Structure, in the "StatBuffer.cst" file of the "Statistics" directory.

A record is added to this table whenever the opening/closing status of the service changes or when the reason for which the Service status is worth such a value has changed. This table concerns the Reject 21 (see § 8.3.1.8) and it will contain information only when at least one inbound call pit has been associated with a Service (see Sheet U-321).

The "Opening_Closing_STATUS" table includes the following fields:

Tableau 12.78 "OPENING_CLOSING_STATUS" TABLE (REJECT 21) (1/2)

Name	Type	Description
StatusChangeTime	Date / Time	This field contains the date and time of backup. (i.e. the change in open/closed status or change in the reason for which the status has such a value)
TimeInSeconds	Number (Integer, long)	This field contains the 'Time' part of the StatusChangeTime field converted in seconds. It is used to optimize the Queries used for statistical reports.
ServiceId	Text	This field contains the identifier of the Service concerned. (i.e. the Service for which the open/closed status changed or change in the reason for which the status has such a value)
PreviousStatus	Number (Integer, long)	Previous value of the Service opening/closing status. It can be 1 = Service open, 2 = Service closed, -1 = Status undefined.

Tableau 12.78 "OPENING_CLOSING_STATUS" TABLE (REJECT 21) (2/2)

Name	Type	Description
PreviousMode	Number (Integer, long)	The reason explaining the value of the previous opening/closing status. It may have the value: • 1 = No Production version of the Service • 2 = the M5000 CC Administrator application in manual mode • 3 = M5000 CC Service Manager in the manual mode • 4 = one of the time rules is met (M5000 CC Service Manager) • 5 = the longest wait time rule is met (M5000 CC Service Manager) • 6 = number of pending calls rule met (M5000 CC Service Manager) • 7 = calls report rule met (M5000 CC Service Manager) • 8 = agent report rule met (M5000 CC Service Manager) • 9 = calls frequency rule met (M5000 CC Service Manager) • 10 = one of the time rules is met (M5000 CC Administrator) • 11 = the longest wait time rule is met (M5000 CC Administrator) • 12 = number of pending calls rule met (M5000 CC Administrator) • 13 = calls report rule met (M5000 CC Administrator) • 14 = agent report rule met (M5000 CC Administrator) • 15 = calls frequency rule met (M5000 CC Administrator) • 16 = minimum closing time rule is met • 17 = no rule verified • -1 = No reason defined)
PreviousModeDuration	Number (Integer, long)	Duration (in seconds) of the previous opening/closing status or reason for which the status has this value. This duration represents the time elapsed since the previous backup, i.e. the time elapsed until the status changed or the mode changed (reason for which the status is worth such a value)
NewStatus	Number (Integer, long)	Previous value of the Service opening/closing status. It may have the value: • 1 = Service open • 2 = Service closed • -1 = Status undefined
NewMode	Number (Integer, long)	The reason explaining the value of the new opening/closing status. It can have the same values as the PreviousMode field.

The statistics table is filled only when the M5000 CC Server is in "Production". Changes may have occurred when the M5000 CC Server was not in "Production" and these were not saved. To have a consistent backup, a record is added whenever the M5000 CC Server shifts into "Production" or quits the "Production" (for the Services where the Reject 21 is activated). Also a record is added when the Reject 21 is activated or deactivated for a Service (when the M5000 CC Server is in "Production").

We must therefore differentiate 4 particular cases for which the backup will be slightly different from the general case:

M5000 CC Server shifts into "Production" (Reject 21 being activated):

- The value -1 is saved for the PreviousStatus, PreviousMode and PreviousModeDuration fields.
- The current value of the status and the reason for the status are saved in the NewStatus and NewMode fields.
- The M5000 CC Server resets the counter used for calculating the mode's duration.

Reject 21 is activated (the M5000 CC Server is in "Production" mode):

- The value -1 is saved for the PreviousStatus, PreviousMode and PreviousModeDuration fields.
- The current value of the status and the reason for the status are saved in the NewStatus and NewMode fields.
- The M5000 CC Server resets the counter used for calculating the mode's duration.

The M5000 CC Server stops being in "Production" (Reject 21 being activated):

- The value -1 is saved for the NewStatus and Newmode fields.
- The current status and mode are saved in the PreviousStatus and PreviousMode fields.
- The duration of the mode is calculated by considering it ends at this time.

The Reject 21 is deactivated for a Service (the M5000 CC Server shifts into "Production"):

- The value -1 is saved for the NewStatus and Newmode fields.
- The current status and mode are saved in the PreviousStatus and PreviousMode fields.
- The duration of the mode is calculated by considering it ends at this time.

12.3.2.11 SERVICE_REJECTEDCALL TABLE

The "Service_REJECTEDCALL" table is located in the M5000 CC File Structure, in the "StatBuffer.cst" and StatRecycler.cst files of the "Statistics" directory. A new record is created for each rejected call (see Reject 21 in Section 8.3.1.8).

The table has the following structure:

Tableau 12.79 SERVICE_REJECTEDCALL TABLE

Name	Type	Description
CallTime	Date / Time	Date and time corresponding to the call's detection and rejection.
CallID	Text 255	Call identifier.
CallServiceID	Text 255	Service identifier.

12.3.2.12 CALLSFILTERS TABLE

The CallsFilters table is located in the M5000 CC File Structure, in the LongTermStatistics.mdb file in the Statistics directory. A new record is created for each filter which passes each call linked to a version of a Service in Production.

Nota : • *The filters must have the option "Save filters" passing in statistics checked (see Sheet U-443).*
•This table can also be found in "StatBuffer.cst" and "StatRecycler.cst".

The table has the following structure:

Tableau 12.80 CALLSFILTERS TABLE

Name	Type	Description
CallID	Text 255	Attention: Call identifier (see "InboundVoiceCalls" table in Section 12.3.3.1, "OutboundVoice Calls", Section 12.3.3.2, "InboundEMails", Section 12.3.3.3 and "InboundWebSessions", Section 12.3.3.4).
FilterID	Text 255	Identifier of passing filter linked to Service concerned.

12.3.2.13 "SERVICEALARMS" TABLE

The "ServiceAlarms" table is located in the M5000 CC File Structure, in the "StatBuffer.cst" database of the "Statistics" directory. A new record is created at the end of each service alarm activation period (alarm defined to be activated in M5000 CC Service Manager).

The table has the following structure:

Tableau 12.81 "SERVICEALARMS" TABLE

Name	Type	Description
CodedData	MEMO	Record of all the alarms to be replicated.

12.3.3 DESCRIPTION OF THE "LONGTERMSTATISTICS.MDB" DATABASE

The “LongTermStatistics.mdb” database is used in the statistics backup process. During the replication mechanism, the Statistics Builder application (see § 8.4.2) writes a set of information in this database relating to the calls and agents in the system. This database enables statistics for a longer period to be stored at minimum cost (in terms of disk space) thanks to its consolidation mechanism. Moreover, the architecture of this database does not depend on the number of services.

The different types of statistical tables are:

Tableau 12.82 LIST OF STATISTICAL TABLES IN THE "LONGTERMSTATISTICS.MDB" DATABASE (1/2)

Name	Description
InboundVoiceCalls (see § 12.3.3.1)	This table contains the statistics for each inbound call to a Service in Production.
OutboundVoiceCalls (see § 12.3.3.2)	This table contains the statistics for each outbound call from a Service in Production.
InboundEmails (see § 12.3.3.3)	This table contains the statistics for each E-mail linked to a Service in "Production".
InboundWebSessions (see § 12.3.3.4)	This table contains the statistics for each web session linked to a Service in Production.
VoiceCallsPerAgent (see § 12.3.3.5)	This table contains the statistics for each call linked to an agent and a Service in Production. It contains inbound calls, outbound calls and private calls.
EmailsPerAgent (see § 12.3.3.6)	This table contains the statistics for each E-mail handled by an agent and linked to a Service in "Production" or "Beta".
AgentGlobalStatuses (see § 12.3.3.7)	This table contains the statistics concerning change of status and activity of agents.
ServiceOpeningClosing Statuses (see § 12.3.3.8)	This table contains the statistics on opening/closing changes for a Service.
CallServerPortsLoad (see § 12.3.3.9)	This table contains the load statistics for the IVR ports of the M5000 CC Media Server.
CallServerSaturationPeriods (see § 12.3.3.10)	This table contains the statistics on the saturation periods for the IVR ports of the M5000 CC Media Server.
CallsFilters (see § 12.3.3.11)	This table contains the passing filter identifiers of each call linked to a Service in "Production".
CallUserDefinedDate Variables (see § 12.3.3.12)	This table contains the identifiers and values of the date type user variables for each call linked to a Service.

Tableau 12.82 LIST OF STATISTICAL TABLES IN THE "LONGTERMSTATISTICS.MDB" DATABASE (2/2)

Name	Description
CallUserDefinedNumber Variables (see § 12.3.3.13)	This table contains the identifiers and values of the numeric type user variables for each call linked to a Service in "Production".
CallUserDefinedText Variables (see § 12.3.3.14)	This table contains the identifiers and values of the text type user variables for each call linked to a Service in "Production".
InboundCallsPerServicePer* (see § 12.3.3.15)	This table contains a set of consolidated data relating to inbound calls linked to a Service in "Production" ("voice", "e-mail", "Web" type calls).
CallsDurationsPer* (see § 12.3.3.16)	This table contains one record per record in the "InboundCallsPerServicePer*" table and for each interval for which the number of calls is not zero.
OutboundVoiceCallsPer ServicePer* (see § 12.3.3.17)	This table contains a set of consolidated data relating to outbound calls linked to a Service in Production.
CallsPerAgentPerService Per* (see § 12.3.3.18)	This table contains a set of data on the calls linked to an agent. These are private or professional calls (for an "Inbound" or "Outbound" service), like "e-mail" calls.
AgentCallsDurationsPer* (see § 12.3.3.19)	This table contains one record per record in the "CallsDurationPer*" table for each interval for which the number of calls is not zero.
StatusesAndActivitiesPer AgentPer* (see § 12.3.3.20)	This table contains a set of consolidated data on agents statuses and activities
ActivityCodePerAgentPer* (see § 12.3.3.21)	This table can contain zero or several records per record in the "StatusesAndActivitiesPerAgentPer*" table: If the agent has not shifted into "Not Ready" nor "PCP" during a time interval (1/4 h, hour, day,...) there will be no record associated with the record in the "StatusesAndActivitiesPerAgentPer*" table. If the agent has shifted several times into "Not Ready" and "PCP"during a time interval, several records are associated with the record in the "StatusesAndActivitiesPerAgentPer*" table.
ClosingStatusesPerService Per* (see § 12.3.3.22)	This table contains a set of consolidated data on the closing changes of a Service.
PortsLoadAndSaturation PeriodsPerCallServerPer* (see § 12.3.3.23)	This table contains a set of data consolidated on the charge and saturation periods of the IVR ports of the M5000 CC Media Server.
ServiceAlarms (see § 12.3.3.24)	this table contains the statistics for alarms relating to a Service in "Production".

Note: Only the last 9 statistics tables marked with a " * " (* = Quarter, HalfHour, Hour, Day, Week, Month) at the end of their name are concerned by the "Consolidation".

12.3.3.1 INBOUNDVOICECALLS TABLE

The InboundVoiceCalls table is located in the M5000 CC File Structure, in the LongTermStatistics.mdb file in the Statistics directory. A new record is created for each inbound call linked to a version of a Service in Production.

The table has the following structure:

Tableau 12.83 "INBOUNDVOICECALLS" TABLE (1/3)

Name	Type	Description
CallTime	Date / Time	Date and time when call begins. This is the time at which a script is started (with IVR or without IVR).
CallTimeHour	Number (Integer, long)	Conversion of the "time" part (hours, minutes and seconds) of 'CallTime' into number of seconds after midnight.
CallID	Text 255	Call identifier.
CallServiceID	Text 255	Service identifier.
Rejected	Yes / No	If the call was rejected (cause 21: if the Service was closed) or no.
CallCLID	Text 255	Caller number (e.g.: 0123456789) unless the directory search has shown that the number corresponds to a contact with red record. In this case, the field contains nothing, so as to preserve the secret number.
CallDNIS	Text 255	Number dialled to contact a Service. For call return to attendant. This field contains the number of the person returning the call, unless the directory search shows that the number belongs to a contact with red record. In this case, no number is contained in this field.
CallDisconnectionStatus	Number (Integer, long)	Status of call when it has been terminated: 0=IVR; 1=Wait; 2&3=Reserved; 4=DCP (conversation); 5=Hold; 6=PCP Not available for rejected calls.
AgentID	Text 255	Identifier of the last agent who handled the call (e.g.: agent's initials).
AgentName	Text 255	Name of the last agent who handled the call (e.g.: Peter).
CallIVRDuration	Number (Integer, long)	Duration of IVR period (in seconds). If the call is transferred or to be transferred (CallToTransfer <> 0); the IVR duration does not include the waiting duration. If the call is not to be transferred (CallToTransfer = 0); the IVR duration is the total duration of the call. (This duration is independent of the use of an IVR resource for calls).
CallWaitingDuration	Number (Integer, long)	Duration of waiting period (in seconds). If the call is transferred, the waiting duration is the time elapsed between CallWaitingTime and CallTransferTime (see 13.3.1.1). If the call is abandoned (i.e.: not transferred and with CallToTransfer <> 0), it is the time elapsed between CallWaitingTime and CallDisconnectionTime. If the call is not to be transferred (CallToTransfer = 0), the waiting time is 0. (This time is independent of the use of an IVR resource for calls).

Tableau 12.83 "INBOUNDVOICECALLS" TABLE (2/3)

Name	Type	Description
CallAgentCommunicationDuration	Number (Integer, long)	Duration of the communication at the agent station (including conversation and hold, but excluding PCP and offline scripting) (in seconds). The communication duration starts at CallTransferTime and ends at CallDisconnectionTime. If several agents have handled the call, the communication period is the cumulated duration of all the agents.
CallPCPDuration	Number (Integer, long)	Duration of the PCP period (in seconds) The PCP period is the difference between CallDisconnectionTime and CallEndPCPTime.
CallTransferringServerName	Text 255	Name of the remote Server from which a call is transferred
CallDestinationServerName	Text 255	Name of the remote Server where the call is transferred
CallNetworkId	Text 255	Name of Server which receives the call first, followed by Call Id. It is unique among all the networked servers.
CallToTransfer	Number (Integer, long)	If CallToTransfer = 0, the call does not need to be transferred (pure IVR call) or the transfer has succeeded. If CallToTransfer <> 0, then the call has to be transferred normally
CallUserUserInfo	Text 255	User-to-User singalling associated with the call
CallDisconnectingParty	Number (Integer, long)	Indicates the party that on-hooked the call. The call was hung up first by the agent, the caller or the hung up was not detected (0 = no hang up detected, 1 = hang up by the agent, 2 = hung up by the caller). Valid only in the CSTAconfiguration.
CallerFirstName	Text 255	Correspondent's first name if directory search is activated (directory server defined with resolution authorisation in the service) and if this search yields a result.
CallerLastName	Text 255	Correspondent's surname if directory search is activated (directory server defined with resolution authorisation in the service) and if this search yields a result.
CallType	Number (Integer, long)	1 = return of unanswered call, 2 = return of answered call, 0 = if the call is not a call return.
DNISRangeAlias	Text 255	Uses the alias of the corresponding DNIS. For call return to attendant, this field indicates "answered return" or "unanswered return".
ReturningPartyFirstName	Text 255	Contains the first name of the person that initiated the call return to attendant, unless the directory search has shown that the contact has a red record. In this case, the fields do not contain any information. This same thing applies if the directory search is not successful.

Tableau 12.83 "INBOUNDVOICECALLS" TABLE (3/3)

Name	Type	Description
ReturningPartyLastName	Text 255	Contains the surname of the person that initiated the call return to attendant, unless the directory search has shown that the contact has a red record. In this case, the fields do not contain any information. This same thing applies if the directory search is not successful.
ReturningPartyDisplayName	Text 255	Contains the first name of the person that initiated the call return to attendant, unless the directory search has shown that the contact has a red record. In this case, the fields do not contain any information. This same thing applies if the directory search is not successful.

12.3.3.1.1 POSSIBLE FIELD VALUES

CallDisconnectionStatus field

Tableau 12.84

Value	Description
0	IVR
1	Hold
[2, 3, 9,10]	Reserved
[4, 11]	DCP
[5, 12]	On hold
6	PCP
7	Offline script

CallDisconnectingParty field

Tableau 12.85

Value	Description
0	On-hook not detected
1	Media server or agent
2	Calling or called party

12.3.3.2 OUTBOUNDVOICECALLS TABLE

The OutboundVoiceCalls table is located in the M5000 CC File Structure, in the LongTermStatistics.mdb file in the Statistics directory. A new record is created for each outbound call linked to a version of a Service in Production.

The table has the following structure:

Tableau 12.86 “OUTBOUNDVOICECALLS” TABLE

Name	Type	Description
CallPresentationTime	Date / Time	Date and time when (logical) call begins. This is the time at which the script is presented to the agent.
CallPresentationTimeHour	Number (Integer, long)	Conversion of the "time" part (hours, minutes and seconds) of 'CallPresentationTime' into number of seconds after midnight.
CallID	Text 255	Call identifier.
CallServiceID	Text 255	Service identifier.
CallDNIS	Text 255	Number dialled by M5000 CC
CallDisconnectionStatus	Number (Integer, long)	Status of the call when it has been terminated : 9&10=Reserved; 11=DCP (conversation) ; 12=On hold; 6=PCP.
AgentID	Text 255	Identifier of the last agent who handled the call (e.g.: agent's initials).
AgentName	Text 255	Name of the last agent who handled the call (e.g.: Peter).
CallPresentationDuration	Number (Integer, long)	Duration of the period between CallPresentationTime and the moment at which the call is made (CallTime).
CallImmediateCreator	Text 255	Identifier of the agent that initiated the call creation. This identifier is only filled in if the call has been added to the list of outgoing calls on an agent's initiative. In this case, this variable contains the agent’s identifier, both for the first call attempt and for possible attempts later. Otherwise (call added to the list by the service manager or an external application via API list of outgoing calls), this variable contains the empty character string.
CallCommunicationDuration	Number (Integer, long)	Duration of the communication at the agent station (including call initiation, conversation and hold, but excluding PCP and offline scripting) (in seconds).
CallPCPDuration	Number (Integer, long)	Duration of the PCP period (in seconds)
CallResult	Number (Integer, long)	Call result set at the end of the call
CallLeftRetries	Number (Integer, long)	Number of retries still allowed
CallLeftConnects	Number (Integer, long)	Number of connections still allowed
CallDialListId	Text 255	Identifier of the call in the dial list
CallDialListCreationTime	Date / Time	Date/time of the creation of the call in the dial list

12.3.3.2.1 POSSIBLE FIELD VALUES

CallResult field

Tableau 12.87

Value	Description
1	Number busy
2	No answer
3	No connection
4	Wrong number
5	Network problem
6	OK
7	Reprogrammed
8	Deleted
9	Presentation timeout
10	No Media Server
11	Call cancelled

CallDisconnectionStatus field

Tableau 12.88

Value	Description
0	IVR
1	Hold
[2, 3, 9,10]	Reserved
[4, 11]	DCP
[5, 12]	On hold
6	PCP
7	Offline script

12.3.3.3 INBOUNDEMAILS TABLE

The InboundEMails table is located in the M5000 CC File Structure, in the LongTermStatistics.mdb file in the Statistics directory. A new record is created for each E-mail associated with a version of a Service in "Production".

The table has the following structure:

Tableau 12.89 INBOUNDEMAILS TABLE

Name	Type	Description
EmailHandlingBeginTime	Date / Time	Date and time when E-mail script starts.
EmailHandlingBeginTimeHour	Number (Integer, long)	Conversion of the "time" part (hours, minutes and seconds) of 'EmailHandlingBeginTime' into number of seconds after midnight.
CallID	Text 255	E-mail identifier.
CallServiceID	Text 255	Service identifier.
EMailMailboxNom	Text 255	Name of mailbox where e-mails arrive (see Section 1.4)
EmailSenderAddress	Text 255	Sender's SMTP Address
EmailMessageType	Text 255	Type of message: E-mail = 1 and transformed fax = 2
EmailMessageSubject	Text 255	Subject of the message
EmailTimeReceived	Date / Time	Date/time the message was received
AgentID	Text 255	Identifier of the last agent who handled the e-mail (e.g.: agent's initials).
AgentName	Text 255	Name of the last agent who handled the E-mail (e.g.: Peter).
CallAgentDuration	Number (Integer, long)	Duration of the agent period for the last agent who handled the E-mail.
EMailHandlingDuration	Number (Integer, long)	Total duration of the handling of the E-mail; starts at EMailHandlingBeginTime and finishes when the E-mail server script ends (in seconds). This duration does not include the possible wait time in the mail server inbox before the mail is processed by the M5000 CC Server.

12.3.3.3.1 POSSIBLE FIELD VALUES

EmailMessageType field

Tableau 12.90

Value	Description
1	E-mail
2	FAX

12.3.3.4 "INBOUNDWEBSESSIONS" TABLE

The InboundWevSession table is located in the M5000 CC File Structure, in the LongTermStatistics.mdb file in the Statistics directory. A new record is created for each web session associated with a version of a Service in

Operation.

The table has the following structure:

Tableau 12.91 INBOUNDWEBSESSIONS TABLE

Name	Type	Description
WebSessionBeginTime	Date / Time	Date and time when web script is started.
WebSessionBeginTimeHour	Number (Integer, long)	Conversion of the "time" part (hours, minutes and seconds) of 'WebSessionBeginTime' into number of seconds after midnight.
CallID	Text 255	Web session identifier
CallServiceID	Text 255	Service identifier.
WebIPAddress	Text 255	IP address of the machine connected to the contact centre via M5000 CC WebCall Service. This information can facilitate synchronization with a web session started on the same PC.
WebSessionDuration	Number (Integer, long)	Total duration of web management (lifetime of the web script) (in seconds).

12.3.3.5 VOICECALLSPERAGENT TABLE

The VoiceCallsPerAgent table is located in the M5000 CC File Structure, in the LongTermStatistics.mdb file in the Statistics directory. A new record is created for each call associated with an agent; professional Service "in Production" or in "Beta" calls, or private calls.

The table has the following structure:

Tableau 12.92 VOICECALLSPERAGENT TABLE

Name	Type	Description
CallBeginTime	Date / Time	Date and time of start of actual voice call on the agent extension.
CallBeginTimeHour	Number (Integer, long)	Conversion of the "time" part (hours, minutes and seconds) of 'CallBeginTime' into number of seconds after midnight.
AgentID	Text 255	Identifier of the (last) agent who handled the call (e.g.: agent's initials).
ServiceID	Text 255	Service identifier. (field empty for private calls)
ServiceVersionType	Number (Integer, long)	The value for this field is "0" for a Service in "Beta" version and "1" for a service in "Production" version. Private calls are identified by the value "-1".
CallID	Text 255	Call identifier. (field empty for private calls)
Incoming	Yes / No	Yes for an incoming call; No for an outgoing call
TotalDuration	Number (Integer, long)	Duration between CallBeginTime and CallEndTime. (in seconds)
RingingDuration	Number (Integer, long)	Ringing duration. (in seconds). For incoming calls only.
ConversationDuration	Number (Integer, long)	Conversation duration. (in seconds). Does not include ringing and hold duration. Includes conferences (on hold or not)
HoldDuration	Number (Integer, long)	Hold duration (call put on hold by agent). (in seconds)
CLID	Text 255	Caller number. For non-private incoming calls, this is the number of the caller. (CallCLID in the InboundVoiceCalls table). For outgoing calls, the CLID is the agent extension.
DNIS	Text 255	Called number. For non-private incoming calls, this is the number dialed to contact a Service. (CallDNIS in the InboundVoiceCalls table).
AgentToAgentTransfer	Yes / No	Yes, if the call has been transferred to another agent.
RemotePartyFirstName	Text 255	Correspondent's first name if directory search is activated (directory server defined with resolution authorisation in the service of for private calls) and if this search yields a result.
RemotePartyLastName	Text 255	Correspondent's last name if directory search is activated (directory server defined with resolution authorisation in the service of for private calls) and if this search yields a result.

Tableau 12.92 VOICECALLSPERAGENT TABLE

Name	Type	Description
TransferDestination	Text 255	Number to which the agent has transferred the call.
TransferDestinationFirstName	Text 255	First name corresponding to TransferDestination.
TransferDestinationLastName	Text 255	Surname corresponding to TransferDestination.

12.3.3.6 EMAILSPERAGENT TABLE

TheEMailsPerAgent table is located in the M5000 CC File Structure, in the LongTermStatistics.mdb file in the Statistics directory. A new record is created for each E-mail associated with an agent and a version of a Service in "Production".

The table has the following structure:

Tableau 12.93 EMAILSPERAGENT TABLE

Name	Type	Description
AgentScriptBeginTime	Date / Time	Date and time of the beginning of the agent script (the moment when the agent selects the e-mail).
AgentScriptBeginTimeHour	Number (Integer, long)	Conversion of the "time" part (hours, minutes and seconds) of 'AgentScriptBeginTime' into number of seconds after midnight.
AgentID	Text 255	Agent identifier (e.g.: agent's initials).
AgentName	Text 255	Agent name (e.g.: Peter).
ServiceID	Text 255	Service identifier.
CallID	Text 255	E-mail identifier.
AgentScriptDuration	Number (Integer, long)	Duration of agent script handling (difference between AgentScriptBeginTime and end of agent script). (in seconds)

12.3.3.7 "AgentGlobalStatuses" table

The "AgentGlobalStatuses" table is located in the M5000 CC File Structure, in the "LongTermStatistics.mdb" file in the "Statistics" directory. A new record is created for each activity associated with an agent.

The table has the following structure:

Tableau 12.94 "AGENTGLOBALSTATUSES" TABLE (1/2)

Name	Type	Description
EventTime	Date / Time	Date and time when record is saved in statistics (when agent changes status/activity/assignment).
PreviousEventTime	Date / Time	The date and time corresponding to the previous event. Corresponds to the difference between "EventTime" and "PreviousDuration".
EventTimeDate	Date	Represents the date (without the time part) on which the end of activity is backed up.
PreviousEventTimeDate	Date	Represents the date (without the time part) the activity starts.
EventTimeHour	Number (Integer, long)	Conversion of the "time" part (hours, minutes and seconds) of 'EventTime' into number of seconds after midnight.
PreviousEventTimeHour	Number (Integer, long)	Conversion of the "Time" part (hours, minutes and seconds) of "PreviousEventTime" into number of seconds after midnight.
EventType	Number (Integer, long)	Possible event types: Status change (login/logout). Activity change (ready/not ready/PCP/break). Assignment change (administrator adds or removes an agent in Service). Change of extension status.
ServiceID	Text 255	Service identifier.
AgentID	Text 255	Agent identifier (e.g.: agent's initials).
AgentName	Text 255	Agent name (e.g.: Peter).
PreviousStatus	Number (Integer, long)	Status (login/logout) which the agent was in during PreviousDuration.
PreviousActivity	Number (Integer, long)	Activity (ready/not ready/PCP/break) the agent was in during PreviousDuration.
PreviousActivityCode	Number (Integer, long)	Activity code the agent was in during PreviousDuration.
PreviousGlobalExtensionStatus	Number (Integer, long)	The global status of the extension (or extensions if an agent has many of them) during PreviousDuration.
PreviousDuration	Number (Integer, long)	Duration between time of last event and new event (EventTime) (in seconds).
AllBreakTimeUsed	Yes / No	Used to check whether the agent had his entire break or not.
NewStatus	Number (Integer, long)	Status (login/logout) into which the agent enters (from EventTime until the next status/activity change).

Tableau 12.94 "AGENTGLOBALSTATUSES" TABLE (2/2)

Name	Type	Description
NewActivity	Number (Integer, long)	Activity (ready/not ready/PCP/break) into which the agent enters (from EventTime until the next status/activity change).
NewActivityCode	Number (Integer, long)	Activity code into which the agent enters (from EventTime until the next status/activity change).
NewGlobalExtensionStatus	Number (Integer, long)	Current global status of the agent's extensions (from EventTime until the next connection/status/activity change).

12.3.3.7.1 POSSIBLE FIELD VALUES

PreviousStatus and NewStatus fields

Tableau 12.95

Value	Description
0	Connected
1	Disconnected

PreviousActivity and NewActivity fields

Tableau 12.96

Value	Description
0	Ready
1	Not Ready
2	Post Call Processing (PCP)
3	Idle

PreviousActivityCode and NewActivityCode fields

Tableau 12.97

Value	Description
0	No particular code associated with the activity
[1 - 10]	Code selected by the agent during change of activity

PreviousGlobalExtensionStatus and NewGlobalExtensionStatus fields

Tableau 12.98

Value	Description
0	Free
1	Inbound call (DCP): in communication for incoming professional call

Tableau 12.98

2	Inbound call (DCP): in communication for outgoing professional call
3	Private inbound call
4	Private outbound call
5	Reserved for incoming call presentation of incoming call
6	Reserved for outgoing call: presentation of outgoing call
7	Incoming call on hold
8	Outgoing call on hold

12.3.3.8 "SERVICEOPENINGCLOSINGSTATUSES" TABLE

The ServiceOpeningClosingStatuses table is located in the M5000 CC File Structure, in the LongTermStatistics.mdb file in the Statistics directory. A new record is created for each opening/closing of a Service.

The table has the following structure:

Tableau 12.99 "SERVICEOPENINGCLOSINGSTATUSES" TABLE (1/2)

Name	Type	Description
StatusChangeTime	Date / Time	Date and time matching opening/closing of a Service.
StatusChangeTimeDate	Date	Represents the date (without the time part) of service opening/closure.
PreviousChangeTime	Date / Time	Date and time matching the previous change of Service status. Corresponds to the difference between "StatusChangeTime" and "PreviousDuration".
PreviousChangeTimeDate	Date	Represents the date (without the time part) of Service opening/closing.
PreviousChangeTimeHour	Number (Integer, long)	Conversion of the "time" part (hours, minutes and seconds) of "PreviousChangeTime" into number of seconds after midnight.
StatusChangeTimeHour	Number (Integer, long)	Conversion of the "time" part (hours, minutes and seconds) of 'StatusChange' into number of seconds after midnight.
ServiceID	Text 255	Service identifier.
PreviousStatus	Number (Integer, long)	Status (open/closed) in which the Service was before the change (StatusChangeTime). It can have the value: • 1 = Service open • 2 = Service closed • -1 = Status undefined

Tableau 12.99 "SERVICEOPENINGCLOSINGSTATUSES" TABLE (2/2)

Name	Type	Description
PreviousMode	Number (Integer, long)	The opening and closing mode in which the service was until the change (StatusChangeTime). It can have the value: • 1 = No Production version of the Service • 2 = the M5000 CC Administrator application in manual mode • 3 = M5000 CC Service Manager in the manual mode • 4 = one of the time rules is met (M5000 CC Service Manager) • 5 = the longest wait time rule is met (M5000 CC Service Manager) • 6 = number of pending calls rule met (M5000 CC Service Manager) • 7 = calls report rule met (M5000 CC Service Manager) • 8 = agent report rule met (M5000 CC Service Manager) • 9 = calls frequency rule met (M5000 CC Service Manager) • 10 = one of the time rules is met (M5000 CC Administrator) • 11 = the longest wait time rule is met (M5000 CC Administrator) • 12 = number of pending calls rule met (M5000 CC Administrator) • 13 = calls report rule met (M5000 CC Administrator) • 14 = agent report rule met (M5000 CC Administrator) • 15 = calls frequency rule met (M5000 CC Administrator) • 16 = minimum closing time rule is met • 17 = no rule verified • -1 = No reason defined)
NewStatus	Number (Integer, long)	Status (login/logout) the Service is in (from StatusChangeTime until the next status change).
NewMode	Number (Integer, long)	The opening and closing mode in which the service is currently (since StatusChangeTime up to the next mode change).

12.3.3.8.1 POSSIBLE FIELD VALUES

PreviousStatus field

Tableau 12.100

Value	Description
1	Service open
2	Service closed
-1	Undefined status

PreviousMode field

Tableau 12.101

Value	Description
1	No “Production” version for the Service
2	The M5000 CC Administrator is in manual mode.
3	The M5000 CC Service Manager is in manual mode.
4	One of the time rules is checked (M5000 CC Service Manager).
5	Longest waiting time rule is checked [M5000 CC Service Manager]
6	Number of waiting call rule is checked [M5000 CC Service Manager]
7	Call report rule is checked (M5000 CC Service Manager).
8	Agent report rule is checked (M5000 CC Service Manager).
9	Call frequency rule is checked (M5000 CC Service Manager).
10	One of the time rules is checked (M5000 CC Administrator).
11	The longest waiting time rule is checked (M5000 CC Administrator).
12	The number of waiting time rule is checked (M5000 CC Administrator).
13	The call report rule is checked (M5000 CC Administrator).
14	The agent report rule is checked (M5000 CC Administrator).
15	The call frequency rule is checked (M5000 CC Administrator).
16	The minimum closing time rule is checked.
17	No rule verified
-1	No reason given

12.3.3.9 "CALLSERVERPORTSLOAD" TABLE

The CallServerPortsLoad table is located in the M5000 CC File Structure, in the LongTermStatistics.mdb file in the Statistics directory. A new record is created regularly (period configured on the M5000 CC Administrator application).

The table has the following structure:

Tableau 12.102 "CALLSERVERPORTSLOAD" TABLE

Name	Type	Description
CallServerName	Text	Name of the Call Server concerned.
EvaluationTime	Date / Time	The data and time corresponding to the evaluation,
EvaluationTimeHour	Number (Integer, long)	Conversion of the "time" part (hours, minutes and seconds) of 'EvaluationTime' into number of seconds after midnight.
CallsIVRDuration	Number (Integer, long)	Duration of the calls belonging to a Cal server in the OVR status since the last evaluation. This corresponds to a total use of the IVR ports.
EvaluationDuration	Number (Integer, long)	Evaluation duration for the period (broadcast period for the average IVR port occupation defined in the M5000 CC Administrator).

12.3.3.10 CALLSERVERSATURATIONPERIODS TABLE

The CallServerSaturationPeriods table is located in the M5000 CC File Structure, in the LongTermStatistics.mdb file in the Statistics directory. A new record is created for each saturation period in the IVR ports of a M5000 CC Media Server.

The table has the following structure:

Tableau 12.103 CALLSERVERSATURATIONPERIODS TABLE

Name	Type	Description
CallServerName	Text	Name of M5000 CC Media Server concerned.
SaturationBeginTime	Date / Time	Date and time of the beginning of the saturation period.
SaturationBeginTimeHour	Number (Integer, long)	Conversion of the "time" part (hours, minutes and seconds) of 'SaturationBeginTime' into a number of seconds after midnight.
SaturationDuration	Number (Integer, long)	Duration of the saturation period (seconds). It is the difference between the saturation begin time (SaturationBeginTime) and the time at least one IVR port becomes available.

12.3.3.11 CALLSFILTERS TABLE

The CallsFilters table is located in the M5000 CC File Structure, in the LongTermStatistics.mdb file in the Statistics directory. A new record is created for each filter which passes each call linked to a version of a Service in Production.

Nota : • *The filters must have the option "Save filters" passing in statistics checked (see Sheet U-443).*

•This table can also be found in "StatBuffer.cst" and "StatRecycler.cst".

The table has the following structure:

Tableau 12.104 CALLSFILTERS TABLE

Name	Type	Description
CallID	Text 255	Attention: Call identifier (see InboundVoiceCalls, in Section 12.3.3.1, OutboundVoice Calls, Section 12.3.3.2, InboundEMails, Section 12.3.3.3 and InboundWebSessions, Section 12.3.3.4 tables).
FilterID	Text 255	Identifier of passing filter linked to Service concerned.

12.3.3.12 CALLUSERDEFINEDDATEVARIABLES TABLE

The CallUserDefinedDateVariables table is located in the M5000 CC File Structure, in the LongTermStatistics.mdb file in the Statistics directory. A new record is created for each date type user variable of a call linked to a version of a Service in Production.

The table has the following structure:

Tableau 12.105 CALLUSERDEFINEDDATEVARIABLES TABLE

Name	Type	Description
NameVariable	Text 255	Variable id
CallID	Text 255	Identifier of the call to which the user variable is linked
VariableValue	Date / Time	Value of the variable

12.3.3.13 CALLUSERDEFINEDNUMBERVARIABLES TABLE

The CallUserDefinedNumberVariables table is located in the M5000 CC File Structure, in the LongTermStatistics.mdb file in the Statistics directory. A new record is created for each numeric type user variable of a call linked to a version of a Service in Production.

The table has the following structure:

Tableau 12.106 CALLUSERDEFINEDNUMBERVARIABLES TABLE

Name	Type	Description
VariableName	Text 255	Variable id
CallID	Text 255	Identifier of the call to which the user variable is linked
VariableValue	Number (Double)	Value of the variable

12.3.3.14 CALLUSERDEFINEDTEXTVARIABLES TABLE

The CallUserDefinedTextVariables table is located in the M5000 CC File Structure, in the LongTermStatistics.mdb file in the Statistics directory. A new record is created for each text type user variable of a call linked to a version of a Service in Production.

The table has the following structure:

Tableau 12.107 CALLUSERDEFINEDTEXTVARIABLES TABLE

Name	Type	Description
VariableName	Text 255	Variable id
CallID	Text 255	Identifier of the call to which the user variable is linked
VariableValue	Text 255	Value of the variable

12.3.3.15 INBOUNDCALLSPERSERVICEPER* TABLE

The "InboundCallsPerServicePer*" table (* = Quarter, HalfHour, Hour, Day, Week, Month) is located in the M5000 CC File Structure, in the "LongTermStatistics.mdb" file of the "Statistics" directory. A new record or update (if the beginning of the period corresponding to the requested precision exists) is created for each call linked to a version of a Service in Production. This table contains a set of consolidated data on inbound calls.

The table has the following structure:

Tableau 12.108 "INBOUNDCALLSPERSERVICEPER*" TABLE (1/3)

Name	Type	Description
ServiceID	Text 255	Service identifier.
FilterID	Text 255	Filter identifier. (field empty for non-filtered calls)
BeginTime	Date / Time	Date and time of start of interval (e.g.: 1/1/2002 00:00:00 for precision per day for statistics on January 1 2002)
BeginTimeHour	Number (Integer, long)	Conversion of the "time" part (hours, minutes and seconds) of 'BeginTime' into number of seconds after midnight.
NbrCalls	Number (Integer, long)	Number of calls saved during the period corresponding to the precision requested (quarter, half hour, hour, day, week or month). Also includes calls linked to a web session. The number of rejected calls is not included in this value.
NbrRejectedCalls	Number (Integer, long)	Number of calls rejected (cause 21). Only for a CSTA configuration.
NbrCallsAnswered	Number (Integer, long)	Number of calls answered by an agent (i.e.: disconnection status > DCP)
NbrCallsAbandoned	Number (Integer, long)	Number of lost calls (e.g.: not handled by an agent if CallToTransfer <> 0). A call is not handled by an agent if the disconnection status is < DCP.
NbrCallsNotToTransfer	Number (Integer, long)	Number of calls not to be transferred (i.e.: not handled by an agent if CallToTransfer = 0).
TotalCallsDuration	Number (Double)	Total duration of all calls. Duration of a call is the time between CallTime and CallDisconnectionTime. It does not include PCP and off-line scripting. (in seconds)
MaxCallsDuration	Number (Integer, long)	Maximum voice call duration. (in seconds)
TotalCallsAnsweredWaitingDuration	Number (Double)	Total waiting duration of all answered voice calls (i.e.: sum of CallWaitingDuration of all calls with disconnection status >= DCP) (in seconds)
MaxCallAnsweredWaitingDuration	Number (Integer, long)	Total waiting duration among answered calls. (in seconds)
TotalCallsAbandonedWaiting Duration	Number (Double)	Total waiting duration of all lost voice calls (i.e.: sum of CallWaitingDuration of all calls not handled by an agent and with CallToTransfer<>0) (in seconds)
MaxCallAbandonedWaiting Duration	Number (Integer, long)	Maximum waiting duration among lost calls. (in seconds)

Tableau 12.108 "INBOUNDCALLSPERSERVICEPER*" TABLE (2/3)

Name	Type	Description
TotalCallsDurationBeforeAnswer	Number (Double)	Total duration (IVR + WaitingDuration) of all answered calls (i.e.: from CallTime to CallTransferTime for calls whose disconnection status >= DCP) (in seconds) (This duration is independent of the use of an IVR resource for calls).
MaxCallDurationBeforeAnswer	Number (Integer, long)	Maximum duration (IVR + WaitingDuration) among answered calls. (In seconds) (This duration is independent of the use of an IVR resource for calls).
TotalCallsDurationBeforeAbandon	Number (Double)	Total duration (IVR + WaitingDuration) of all lost calls (i.e.: from CallTime to CallDisconnectionTime for calls not managed by an agent and for status CallToTransfer<>0) (in seconds) (This duration is independent of the use of an IVR resource for calls).
MaxCallDurationBeforeAbandon	Number (Integer, long)	Maximum duration (IVR + WaitingDuration) among lost calls. (In seconds) (This duration is independent of the use of an IVR resource for calls).
TotalCallsNotToTransferDuration	Number (Double)	Total duration of all calls not transferred (i.e.: from CallTime to CallDisconnectionTime for calls not handled by an agent and with CallToTransfer=0) (in seconds)
MaxCallNotToTransferDuration	Number (Integer, long)	Maximum duration among voice calls not transferred. (in seconds)
TotalCallsAgentCommunication Duration	Number (Double)	Total communication duration of all calls not transferred (i.e.: from CallTransferedTime to CallDisconnectionTime for answered voice calls) (in seconds). Communication duration includes conversation as well as hold.
MaxCallAgentCommunication Duration	Number (Integer, long)	Maximum duration of agent communication among all answered voice calls (in seconds).
TotalPCPDuration	Number (Double)	Total duration of post-call processing of all answered voice calls (i.e.: sum of CallPCPDuration of all answered calls) (in seconds)
MaxPCPDuration	Number (Integer, long)	Maximum duration of post-call processing among answered voice calls. (in seconds)
NbrEmails	Number (Integer, long)	Number of E-mails saved during the period corresponding to the precision requested (quarter, half hour, hour, day, week or month)
NbrEmailsHandledByAgent	Number (Integer, long)	Number of E-mails handled by at least one agent during the period corresponding to the precision requested (quarter, half hour, hour, day, week or month), (i.e.: number of E-mails for which AgentID is not empty)

Tableau 12.108 "INBOUNDCALLSPERSERVICEPER*" TABLE (3/3)

Name	Type	Description
NbrEmailsNotHandledByAgent	Number (Integer, long)	Number of E-mails not handled by an agent during the period corresponding to the precision requested (quarter, half hour, hour, day, week or month), (i.e.: number of E-mails for which AgentID is not empty)
TotalEmailHandlingDuration	Number (Double)	Total duration of handling of E-mails (between EmailHandlingBeginTime and EmailHandlingEndTime). This does not include time spent in the 'Inbox' directory.
MaxEmailHandlingDuration	Number (Integer, long)	Maximum duration of handling of an E-mail among e-mails handled by the agents.
NbrWebSessions	Number (Integer, long)	Number of web sessions during the period corresponding to the precision requested (quarter, half hour, hour, day, week or month).
TotalWebSessionDuration	Number (Double)	Total duration of connected web sessions (WebSessionBeginTime and WebSessionEndTime)
MaxWebSessionDuration	Number (Integer, long)	Maximum duration for managing a web session among the web sessions.

12.3.3.16 CALLSDURATIONSPER* TABLE

The "CallsDurationPer*" table (* = Quarter, HalfHour, Hour, Day, Week, Month) is located in the M5000 CC File Structure, in the "LongTermStatistics.mdb" file of the "Statistics" directory. A new record or update (if the corresponding interval exists) is created for each record in the "InboundCallsPerServicePer*" table (see § 12.3.3.15). This table contains one record per record in the "InboundCallsPerServicePer*" table for the interval for which a "number of calls" is not zero.

Each interval duration is identified by its lower and upper bounds and is, by convention, specified as ***]LowerBound,UpperBound]*** (thus lower bound is excluded - except for zero).

The intervals have the following length distribution:

- 2 seconds length from 0 to 30 seconds: [0,2],]2,4], …,]28,30];
- 5 seconds length from 30 to 60 seconds:]30,35], …,]55,60];
- 10 seconds length from 60 to 120 seconds:]60,70], …,]110,120];
- 60 seconds length from 120 to 300 seconds:]120,180], …,]240,300];
- 120 seconds length from 300 to 420 seconds:]300,420];
- 180 seconds length from 420 to 600 seconds:]420,600];
- infinite for values greater than 600 seconds:]600,-->[

The table has the following structure:

Name	Type	Description
ServiceID	Text 255	Service identifier.
FilterID	Text 255	Filter identifier. (field empty for non-filtered calls)
BeginTime	Date / Time	Date and time of start of interval (e.g.: 1/1/2002 00:00:00 for precision per day for statistics on January 1 2002)
LowerBound	Number (Integer, long)	Lower bound (included if zero, otherwise excluded) of duration interval
UpperBound	Number (Integer, long)	Upper bound (included) of duration interval
NbrCallsAnsweredWaitingDuration	Number (Integer, long)	Number of calls answered after a waiting period within this interval: LowerBound < CallWaitingDuration <= UpperBound
NbrCallsAbandonedWaiting Duration	Number (Integer, long)	Number of incoming voice calls lost after a waiting period within this interval: LowerBound < CallWaitingDuration <= UpperBound
NbrCallsAnsweredDuration	Number (Integer, long)	Number of answered incoming voice calls answered after a period (from the moment the call arrived) within this interval: LowerBound < CallTransferTime - CallTime <= UpperBound
NbrCallsAbandonedDuration	Number (Integer, long)	Number of calls lost after a period (from the moment the call arrived) within this interval: LowerBound < CallDisconnectionTime - CallTime <= UpperBound
NbrCallsCommunicationDuration	Number (Integer, long)	Number of answered calls for which the communication duration (agent) is within this interval: Lowerbound < CallDisconnectionStatus - CallTransferTime < Upperbound. Communication duration includes conversation as well as hold.

Tableau 12.109 CALLSDURATIONSPER* TABLE

12.3.3.17 "OUTBOUNDVOICECALLSPERSERVICEPER*" TABLE

The "OutboundVoiceCallsPerServicePer*" table (* = Quarter, HalfHour, Hour, Day, Week, Month) is located in the M5000 CC File Structure, in the "LongTermStatistics.mdb" file of the "Statistics" directory. A new record or update (if the beginning of the period corresponding to the requested precision exists) is created for each call linked to a version of a Service in Production. This table contains a set of consolidated data on inbound calls.

The table has the following structure:

Name	Type	Description
ServiceID	Text	Service identifier.
BeginTime	Date / Time	Date and time of start of interval (e.g.: 1/1/2002 00:00:00 for precision per day for statistics on January 1 2002)
BeginTimeHour	Number (Integer, long)	Conversion of the "time" part (hours, minutes and seconds) of 'BeginTime' into number of seconds after midnight.
TotalNbrAttempts	Number (Integer, long)	Number of outbound call attempts for the time interval considered.
NbrSuccessEndAttempts	Number (Integer, long)	Number of outbound calls successful (call result = 0) for the time interval considered.
TotalSuccessEndPresentation Duration	Number (Double)	Total presentation time (seconds) of all successful outbound calls. For each call, this corresponds to the difference between the script's begin time and the time when the agent makes or ends the call.
MaxSuccessEndPresentation Duration	Number (Integer, long)	Maximum presentation time of all successful outbound calls.
TotalSuccessEndCommunication Duration	Number (Double)	Total call time (seconds) for all successful outbound calls. The call time includes the initialization time of the actual call, conversation, on hold and excludes the time for presentation, post call processing and time used in offline script.
MaxSuccessEndCommunication Duration	Number (Integer, long)	Maximum call time of all successful outbound calls.
TotalSuccessEndPCPDuration	Number (Double)	Total post call processing time (seconds) of all successful outbound calls.
MaxSuccessEndPCPDuration	Number (Integer, long)	Maximum post call processing time of all successful outbound calls.
NbrFailedEndAttempts	Number (Integer, long)	Number of failed outbound calls (call result = Bad number or call result = deleted, or left connects = 0 or left retries = 0) for the time interval considered.
TotalFailedEndPresentation Duration	Number (Double)	Total presentation time (seconds) of all failed outbound calls. For each call, this corresponds to the difference between the script's begin time and the time when the agent makes or ends the call.
MaxFailedEndPresentation Duration	Number (Integer, long)	Maximum presentation time of all failed outbound calls
TotalFailedEndCommunication Duration	Number (Double)	Total call time (seconds) for all failed outbound calls. The call time includes the initialization time of the actual call, conversation, on hold and excludes the time for presentation, post call processing and time used in offline script.
MaxFailedEndCommunication Duration	Number (Integer, long)	Maximum call time of all failed outbound calls.
TotalFailedEndPCPDuration	Number (Double)	Total post call processing time (seconds) of all failed outbound calls.
MaxFailedEndPCPDuration	Number (Integer, long)	Maximum post call processing time of all failed outbound calls.

Tableau 12.110 "OUTBOUNDVOICECALLSPERSERVICEPER*" TABLE (1/2)

Name	Type	Description
NbrPendingCallsAttempts	Number (Integer, long)	Number of pending calls (already accessed by the system but not yet terminated). These calls have a call result different from 0=First Attempt, 4 =Bad number, 6=Connect OK and 8=Canceled deleted. CallLeftRetries and CallLeftConnects are also different from 0.
TotalPendingCallsPresentation Duration	Number (Double)	Total presentation time (seconds) of all pending outbound calls. For each call, this corresponds to the difference between the script's begin time and the time when the agent makes or ends the call.
MaxPendingCallsPresentation Duration	Number (Integer, long)	Maximum presentation time for all pending calls
TotalPendingCalls CommunicationDuration	Number (Double)	Total communication time (seconds) of all pending outbound calls. The communication time includes the time for the initialization of the actual call, the conversation, holding, and excludes the time for presentation, post call processing and time used in offline script.
MaxPendingCallsCommunication Duration	Number (Integer, long)	Maximum communication time for all pending calls.
TotalPendingCallsPCPDuration	Number (Double)	Total post call processing time (seconds) of all pending outbound calls.
MaxPendingCallsPCPDuration	Number (Integer, long)	Maximum post call processing time for all pending calls.

Tableau 12.110 "OUTBOUNDVOICECALLSPERSERVICEPER*" TABLE (2/2)

12.3.3.18 CALLSPERAGENTPERSERVICEPER* TABLE

The "CallsPerAgentPerServicePer*" table (* = Quarter, HalfHour, Hour, Day, Week, Month) is located in the M5000 CC File Structure, in the "LongTermStatistics.mdb" file of the "Statistics" directory. A new record or update (if the beginning of the period corresponding to the requested precision exists) is created for each call linked to an agent. This table contains a set of consolidated data on the calls linked to an agent (professional and private).

The table has the following structure:

Tableau 12.111 "CALLSPERAGENTPERSERVICEPER*" TABLE (1/3)

name	type	description
AgentID	Text 255	Agent identifier.
ServiceID	Text 255	Service identifier. For private calls, this field is blank.
BeginTime	Date / Time	Date and time of start of interval (e.g.: 1/1/2002 00:00:00 for precision per day for statistics on January 1 2002)
BeginTimeHour	Number (Integer, long)	Conversion of the "time" part (hours, minutes and seconds) of 'BeginTime' into number of seconds after midnight.
NbrInboundCallsAnswered	Number (Integer, long)	Number of incoming calls received and answered by the agent for the Service. (example: Incoming = True and ConversationDuration >0)
NbrInboundCallsNotAnswered	Number (Integer, long)	Number of incoming calls received and not answered by the agent for the Service. (example: Incoming = True and ConversationDuration =0)
NbrOutboundCalls	Number (Integer, long)	Number of outgoing calls made by the agent for the Service (i.e.: Incoming = False)

Tableau 12.111 "CALLSPERAGENTPERSERVICEPER*" TABLE (2/3)

name	type	description
TotalRingingDurationAnswered Calls	Number (Double)	Sum of the ringing durations for all incoming calls answered by the agent for the Service. (example: Incoming = True and ConversationDuration >0)
MaxRingingDurationAnswered Calls	Number (Integer, long)	Maximum ringing duration among incoming calls answered by the agent for the Service.
TotalRingingDurationNot AnsweredCalls	Number (Double)	Sum of the ringing durations of all incoming calls presented to but not answered by the agent for the Service. (example: Incoming = True and ConversationDuration =0)
MaxRingingDurationNotAnswered Calls	Number (Integer, long)	Maximum ringing duration among all incoming calls presented to but not answered by the agent for the Service.
TotalConversationDuration InboundCalls	Number (Double)	Sum of the conversation durations of all incoming calls answered by the agent for the Service. (example: Incoming = True). This does not include ringing and hold duration.
MaxConversationDuration InboundCalls	Number (Integer, long)	Maximum conversation duration among all incoming calls answered by the agent for the Service.
TotalConversationDuration OutboundCalls	Number (Double)	Sum of the conversation durations of all outgoing calls answered by the agent for the Service. (example: Incoming = True). This does not include on hold.
MaxConversationDuration OutboundCalls	Number (Integer, long)	Maximum conversation duration among all outgoing calls that have been answered by the agent for the Service.
NbrInboundCallsPutOnHold	Number (Integer, long)	Number of incoming calls received and put on hold by the agent for the Service. (example: Incoming = True and HoldDuration >0)
NbrOutboundCallsPutOnHold	Number (Integer, long)	Number of outgoing calls received and put on hold by the agent for the Service. (example: Incoming = False and HoldDuration >0)
TotalHoldDurationInboundCalls	Number (Double)	Sum of the hold durations of all incoming calls answered by the agent for the Service. (example: Incoming = True)
MaxHoldDurationInboundCalls	Number (Integer, long)	Maximum hold duration among all incoming calls answered by the agent for the Service.
TotalHoldDurationOutboundCalls	Number (Double)	Sum of the hold durations of all incoming calls received by the agent for the Service. (example: Incoming = False)
MaxHoldDurationOutboundCalls	Number (Integer, long)	Maximum hold duration among all outgoing calls of the agent for the Service.
NbrInboundCallsTransferredTo Agent	Number (Integer, long)	Number of incoming calls received and transferred by the agent for the Service. (example: Incoming = True and TransferAgentToAgent = True)
NbrOutboundCallsTransferredTo Agent	Number (Integer, long)	Number of outgoing calls received and transferred by the agent for the Service. (example: Incoming = False and TransferAgentToAgent = True)

Tableau 12.111 "CALLSPERAGENTPERSERVICEPER*" TABLE (3/3)

name	type	description
NbrEmailsTreated	Number (Integer, long)	Number of E-mails treated by the agent for the Service.
TotalEmailTreatmentDuration	Number (Double)	Total processing duration of E-mails processed by the agent for the Service. (example: sum of the AgentDuration period for each record in the EMailTreatmentByAgents table)
MaxEmailTreatmentDuration	Number (Integer, long)	Maximum processing duration of E-mails processed by the agent for the Service.

12.3.3.19 AGENTCALLSDURATIONSPER*" TABLE

The "AgentCallsDurationPer*" table (* = Quarter, HalfHour, Hour, Day, Week, Month) is located in the M5000 CC File Structure, in the "LongTermStatistics.mdb" file of the "Statistics" directory. A new record or update (if the corresponding interval exists) is created for each record in the "CallsPerAgentPerServicePer*" table (see § 12.3.3.18). This table contains one record per record in the "CallsPerAgentPerServicePer*" table and for each interval for which the number of calls is not zero.

Each duration interval is identified by its lower and upper bounds, and is by convention specified as ***]LowerBound,UpperBound]*** (thus lower bound is excluded - except for zero).

The intervals have the following length distribution:

- 2 seconds length from 0 to 20 seconds: [0,2],]2,4], …,]18,20];
- 10 seconds length from 20 to 30 seconds:]20,30];
- infinite for values greater than 30 seconds]30,-->[

The table has the following structure:

Tableau 12.112 AGENTCALLSDURATIONSPER* TABLE

Name	Type	Description
AgentID	Text 255	Agent Id
ServiceID	Text 255	Service identifier
BeginTime	Date / Time	Date and time of start of interval (e.g.: 1/1/2002 00:00:00 for precision per day for statistics on January 1 2002)
LowerBound	Number (Integer, long)	Lower bound (included if zero, otherwise excluded) of duration interval
UpperBound	Number (Integer, long)	Upper bound (included) of duration interval
NbrCallsAnsweredRinging Duration	Number (Integer, long)	Number of calls answered by an agent after a ringing period within this interval: LowerBound < ringing duration <= UpperBound
NbrCallsNotAnsweredRinging Duration	Number (Integer, long)	Number of calls not answered by an agent after a ringing period within this interval: LowerBound < ringing duration <= UpperBound

12.3.3.20 "STATUSESANDACTIVITIESPERAGENTPER*" TABLE

The "StatusesAndActivitiesPerAgentPer*" table (* = Quarter, HalfHour, Hour, Day, Week, Month) is located in the M5000 CC File Structure, in the "LongTermStatistics.mdb" file of the "Statistics" directory. A new record or update (if the beginning of the period corresponding to the requested precision exists) is created for each change of status of an agent or his extension. This table contains a set of consolidated data on agents' statuses and activities and the global statuses of extensions.

Note: Current interval = Time elapsed between "BeginTime" to "BeginTime + precision level".

The table has the following structure:

Tableau 12.113 "STATUSESANDACTIVITIESPERAGENTPER*" TABLE (1/3)

Name	Type	Description
AgentID	Text	Agent identifier.
ServiceID	Text 255	Service identifier
BeginTime	Date / Time	Date and time of start of interval (e.g.: 1/1/2002 00 :00 :00 for precision per day for statistics on January 1, 2002)
BeginTimeHour	Number (Integer, long)	Conversion of the "time" part (hours, minutes and seconds) of 'BeginTime' into number of seconds after midnight.
AgentName	Text	Name of the agent.
NbrLoginReadyIdlePeriods	Number (Integer, long)	Number of separate periods during which the agent was in the (connected, ready, idle) status, starting from the current interval. A period is considered as belonging to the current interval if its begin time is included in the interval.
TotalLoginReadyIdleDuration	Number (Integer, long)	The total duration of the intersection of the periods during which the agent is in the (connected, ready, idle) status with the current interval.
MaxLoginReadyIdleDuration	Number (Integer, long)	The maximum duration of the periods which started in the current interval during which the agent was in the (connected, ready, idle) status.
NbrLoginNotReadyIdlePeriods	Number (Integer, long)	Number of separate periods during which the agent was in the (connected, ready, idle) status, and which did not start in the current interval. A period is considered as belonging to the current interval if its begin time is included in the interval.
TotalLoginNotReadyIdleDuration	Number (Integer, long)	The total duration of the intersection of the periods during which the agent is in the (connected, not ready, idle) status with the current interval.
MaxLoginNotReadyIdleDuration	Number (Integer, long)	The maximum duration of the periods which started in the current interval during which the agent was in the (connected, not ready, idle) status.
NbrLoginPCPIdlePeriods	Number (Integer, long)	Number of separate periods during which the agent was in the (connected, PCP, idle) status and which started in the current interval. A period is considered as belonging to the current interval if its begin time is included in the interval.
TotalLoginPCPIdleDuration	Number (Integer, long)	The total duration of the intersection of the periods during which the agent is in the (connected, PCP, idle) status with the current interval.

Tableau 12.113 "STATUSESANDACTIVITIESPERAGENTPER*" TABLE (2/3)

Name	Type	Description
MaxLoginPCPIdleDuration	Number (Integer, long)	The maximum duration of the periods which started in the current interval during which the agent was in the (connected, PCP, idle) status.
NbrLoginBreakIdlePeriods	Number (Integer, long)	Number of separate periods during which the agent was in the (connected, break, idle) status and which started in the current interval. A period is considered as belonging to the current interval if its begin time is included in the interval.
TotalLoginBreakIdleDuration	Number (Integer, long)	The total duration of the intersection of the periods during which the agent is in the (connected, break, idle) status with the current interval.
MaxLoginBreakIdleDuration	Number (Integer, long)	The maximum duration of the periods which started in the current interval during which the agent was in the (connected, break, idle) status.
TotalDCPInboundDuration	Number (Integer, long)	The total duration of the intersection of the periods during which the agent is in the (Inbound call communication) status with the current interval.
NbrDCPInboundPeriods	Number (Integer, long)	Number of separate periods during which the agent was in the (Inbound call communication) status and which started in the current interval.
MaxDCPInboundDuration	Number (Integer, long)	The maximum duration of the periods which started in the current interval during which the agent was in the (Inbound call communication) status.
TotalDCPOutboundDuration	LongNumber (Integer, long)	The total duration of the intersection of the periods during which the agent is in the (Outbound call communication) status with the current interval.
NbrDCPOutboundPeriods	LongNumber (Integer, long)	Number of separate periods during which the agent was in the (Outbound call communication) status and which started in the current interval.
MaxDCPOutboundDuration	Number (Integer, long)	The maximum duration of the periods which started in the current interval during which the agent was in the (Outbound call communication) status.
TotalPrivateInDuration	Number (Integer, long)	The total duration of the intersection of the periods during which the agent is in the (Inbound private call) status with the current interval.
NbrPrivateInPeriods	Number (Integer, long)	Number of separate periods during which the agent was in the (Inbound private call) status and which started in the current interval.
MaxPrivateInDuration	Number (Integer, long)	The maximum duration of the periods which started in the current interval during which the agent was in the (Inbound private call) status.
TotalPrivateOutDuration	Number (Integer, long)	The total duration of the intersection of the periods during which the agent is in the (Outbound private call) status with the current interval.
NbrPrivateOutPeriods	Number (Integer, long)	Number of separate periods during which the agent was in the (Outbound private call) status and which started in the current interval.

Tableau 12.113 "STATUSESANDACTIVITIESPERAGENTPER*" TABLE (3/3)

Name	Type	Description
MaxPrivateOutDuration	Number (Integer, long)	The maximum duration of the periods which started in the current interval during which the agent was in the (Outbound private call) status.
TotalReservedInboundDuration	Number (Integer, long)	The total duration of the intersection of the periods during which the agent is in the (Presentation of inbound call) status with the current interval.
NbrReservedInboundPeriods	Number (Integer, long)	Number of separate periods during which the agent was in the (Presentation of inbound call) status and which started in the current interval.
MaxReservedInboundDuration	Number (Integer, long)	The maximum duration of the periods which started in the current interval during which the agent was in the (Presentation of inbound call) status.
TotalReservedOutboundDuration	Number (Integer, long)	The total duration of the intersection of the periods during which the agent is in the (Presentation of outbound call) status with the current interval.
NbrReservedOutboundPeriods	Number (Integer, long)	Number of separate periods during which the agent was in the (Presentation of outbound call) status and which started in the current interval.
MaxReservedOutboundDuration	Number (Integer, long)	The maximum duration of the periods which started in the current interval during which the agent was in the (Presentation of outbound call) status.
TotalHoldInboundDuration	Number (Integer, long)	The total duration of the intersection of the periods during which the agent is in the (Inbound call on hold) status with the current interval.
NbrHoldInboundPeriods	Number (Integer, long)	Number of separate periods during which the agent was in the (Inbound call on hold) status and which started in the current interval.
MaxHoldInboundDuration	Number (Integer, long)	The maximum duration of the periods which started in the current interval during which the agent was in the (Inbound call on hold) status.
TotalHoldOutboundDuration	Number (Integer, long)	The total duration of the intersection of the periods during which the agent is in the (Outbound call on hold) status with the current interval.
NbrHoldOutboundPeriods	Number (Integer, long)	Number of separate periods during which the agent was in the (Outbound call on hold) status and which started in the current interval.
MaxHoldOutboundDuration	Number (Integer, long)	The maximum duration of the periods which started in the current interval during which the agent was in the (Outbound call on hold) status.
NbrForcedReadyPeriods	Number (Integer, long)	Number of forced transitions to ready.
NbrForcedLogoutPeriods	Number (Integer, long)	Number of forced transitions to logout.

12.3.3.21 "ACTIVITYCODEPERAGENTPER" TABLE

The "ActivityCodePerAgentPer*" table (* = Quarter, HalfHour, Hour, Day, Week, Month) is located in the M5000 CC File Structure, in the "LongTermStatistics.mdb" file of the "Statistics" directory. A new record or update (if the beginning of the period corresponding to the requested precision exists) is created for each shift to an agent's "Not ready and idle, or "PCP and idle" activity. This table contains a set of data consolidated on the "Not ready and idle" and "PCP and idle" activities, as well as on their corresponding activity codes.

Note: Current interval = Time elapsed between "BeginTime" to "BeginTime + precision level".

Note: Note that unlike most of the tables, the total durations displayed do not represent the total of all the durations of the agent's activities (Service closing) that started at the consolidated interval concerned. In fact, for this table, the duration of activity (Service closing) is spread over the entire consolidated intervals covered by the activity (Service closing). Moreover, the number of periods represents the number of change of (closing) activity. At the time of change of activity (Service closing), the number of periods is increased, but only within the activity start interval (closing).

The table has the following structure:

Tableau 12.114 "ACTIVITYCODEPERAGENTPER*" TABLE

Name	Type	Description
AgentID	Text	Agent identifier.
ServiceID	Text 255	Service identifier
BeginTime	Date / Time	Date and time of start of interval (e.g.: 1/1/2002 00:00:00 for precision per day for statistics on January 1 2002)
Activity	Number (Integer)	Identifier of the "Not Ready" or "PCP" activity. 1 for the "Not Ready" activity, 2 for the "PCP" activity
Code	Number (Integer)	Identifier of the activity code associated with the "Not Ready" or "PCP" activity.
NbrPeriods	Number (Integer, long)	Number of separate periods during which the agent was in the (connected, activity – code, global status of "idle" extensions) status. • The countdown of the number of periods is applied in the current interval. • A period is considered as belonging to the current interval if its begin time is included in the interval.
TotalDuration	Number (Integer, long)	The total duration of the periods belonging to the current interval during which the agent is in the (connected, activity – code, global status of "idle" extensions) status.
MaxDuration	Number (Integer, long)	The maximum duration of the periods belonging to the current interval during which the agent is in the (connected, activity – code, global status of "idle" extensions) status.

12.3.3.22 "CLOSINGSTATUSESPERSERVICEPER*" TABLE

The "ClosingStatusesPerServicePer*" table (* = Quarter, HalfHour, Hour, Day, Week, Month) is located in the M5000 CC File Structure, in the "LongTermStatistics.mdb" file of the "Statistics" directory. A new record or update (if the beginning of the period corresponding to the requested precision exists) is created for each closing of a Service. This table contains a set of consolidated data on the closings of a Service.

Note: Note that unlike most of the tables, the total durations displayed do not represent the total of all the durations of the agent's activities (Service closing) that started at the consolidated interval concerned. In fact, for this table, the duration of activity (Service closing) is spread over the entire consolidated intervals covered by the activity (Service closing). Moreover, the number of periods represents the number of change of (closing) activity. At the time of change of activity (Service closing), the number of periods is increased, but only within the activity start interval (closing).

The table has the following structure:

Tableau 12.115 "CLOSINGSTATUSESPERSERVICEPER*" TABLE (1/2)

Name	Type	Description
ServiceID	Text	Service identifier.
BeginTime	Date / Time	Date and time of start of interval (e.g.: 1/1/2002 00:00:00 for precision per day for statistics on January 1 2002)
BeginTimeHour	Number (Integer, long)	Conversion of the "time" part (hours, minutes and seconds) of 'BeginTime' into number of seconds after midnight.
NbrServiceGotClosed	Number (Integer, long)	Number of times the Service closed or remained closed.
NbrServiceOpenedToClosed	Number (Integer, long)	Number of times the Service closed. This corresponds to all the status changes from a Service open to a Service closed.
TotalClosedDuration	Number (Double)	Total duration during which a Service is closed (this includes manual and automatic closings).
NbrTimeRuleVerified	Number (Integer, long)	Number of times a service became closed based on the time closing rule.
TotalTimeRuleDuration	Number (Double)	Total closing duration of a Service based on a time closing rule (rules defined in the Service Administrator and Manager).
NbrGeneralTimeRuleVerified	Number (Integer, long)	Number of times a service became closed based on a time closing rule (rules defined in the Administrator).
TotalGeneralTimeRuleDuration	Number (Double)	Total closing duration of a Service based on a time closing rule (rules defined in the Administrator).
NbrFrequencyVerified	Number (Integer, long)	Number of times a service became closed based on a frequency closing rule.
TotalFrequencyDuration	Number (Double)	Total closing duration of a Service based on a frequency closing rule (rules defined in the Service Administrator and Manager).
NbrGeneralFrequencyVerified	Number (Integer, long)	Number of times a service became closed based on a frequency closing rule (rules defined in the Administrator).
TotalGeneralFrequencyDuration	Number (Double)	Total closing duration of a Service based on a frequency closing rule (rules defined in the Administrator).
NbrLgWaitTimeVerified	Number (Integer, long)	Number of times a service became closed based on a rule on closing for the longest wait time.
TotalLgWaitTimeDuration	Number (Double)	Total closing duration of a Service based on a closing rule on longest wait time (rules defined in the Service Administrator and Manager).
NbrGeneralLgWaitTimeVerified	Number (Integer, long)	Number of times a service became closed based on closing for the longest wait time (rules defined in the Administrator).

Tableau 12.115 "CLOSINGSTATUSESPERSERVICEPER*" TABLE (2/2)

Name	Type	Description
TotalGeneralLgWaitTimeDuration	Number (Double)	Number of times a service became closed based on a rule on closing for the longest wait time.
NbrCallsToTransferVerified	Number (Integer, long)	Number of times a service became closed based on a closing rule on call on-hold.
TotalCallsToTransferDuration	Number (Double)	Total closing duration of a Service based on a closing rule on call on-hold (rules defined in the Service Administrator and Manager).
NbrGeneralCallsToTransferVerified	Number (Integer, long)	Number of times a service became closed based on closing rule on call on-hold (rules defined in the Administrator).
TotalGeneralCallsToTransfer Duration	Number (Double)	Number of times a service became closed based on a closing rule on call on-hold.
NbrAgentsRatioVerified	Number (Integer, long)	Number of times a service became closed based on a closing rule on agents report.
TotalAgentsRatioDuration	Number (Double)	Total closing duration of a Service based on a closing rule on agents report (rules defined in the Service Administrator and Manager).
NbrGeneralAgentsRatioVerified	Number (Integer, long)	Number of times a service became closed based on an agents report closing rule (rules defined in the Administrator).
TotalGeneralAgentsRatioDuration	Number (Double)	Number of times a service became closed based on a closing rule on agents report.
NbrCallsRatioVerified	Number (Integer, long)	Number of times a service became closed based on a call report closing rule.
TotalCallsRatioDuration	Number (Double)	Total closing duration of a Service based on a calls report closing rule (rules defined in the Service Administrator and Manager).
NbrGeneralCallsRatioVerified	Number (Integer, long)	Number of times a service became closed based on a calls report closing rule (rules defined in the Administrator).
TotalGeneralCallsRatioDuration	Number (Double)	Number of times a service became closed based on a call report closing rule.

12.3.3.23 "PORTSLOADANDSATURATIONPERIODSPERCALLSERVERPER*" TABLE

The "PortsLoadAndSaturationPeriodsPerCallServerPer*" table (* = Quarter, HalfHour, Hour, Day, Week, Month) is located in the M5000 CC File Structure, in the "LongTermStatistics.mdb" file of the "Statistics" directory. A new record or update (if the beginning of the period corresponding to the requested precision exists) is created for each saturation and/or load periods. This table contains a set of data consolidated on the charge and saturation periods of the IVR ports of the M5000 CC Media Server.

The table has the following structure:

Tableau 12.116 "PORTSLOADANDSATURATIONPERIODSPERCALLSERVERPER*" TABLE

Name	Type	Description
CallServerName	Text	Name of the Call Server concerned.
BeginTime	Date / Time	Date and time of start of interval (e.g.: 1/1/2002 00:00:00 for precision per day for statistics on January 1 2002).
BeginTimeHour	Number (Integer, long)	Conversion of the "time" part (hours, minutes and seconds) of 'BeginTime' into number of seconds after midnight.
TotalEvaluationDuration	Number (Double)	Exact duration (seconds) of the evaluation period for the time interval considered. For example, if the level of precision is 'day' but if the Call server is operational only for 12 hours and 45 minutes, then TotalEvaluationDuration = [12(hours)* 3600] + [15(minutes)*60] = 44100 seconds.
TotalIVRCallsDuration	Number (Double)	Duration of the calls belonging to a Call server in the IVR status since the period specified. This corresponds to a total use of the IVR ports.
TotalNbrSaturation	Number (Integer, long)	Number of saturation periods accounted for in the period specified. Indeed, the number of saturations which have begun for this period.
TotalSaturationDuration	Number (Double)	Total duration of the saturation periods.
MaxSaturationDuration	Number (Integer, long)	Maximum duration of the longest saturation period for the time interval considered.

12.3.3.24 "SERVICEALARMS" TABLE

The "ServiceAlarms" table is located in the M5000 CC File Structure, in the LongTermStatistics.mdb file in the "Statistics" directory. A new record is created at the end of each service or filter alarm activation period (alarm defined to be activated in M5000 CC Service Manager).

The table has the following structure:

Tableau 12.117 "SERVICEALARMS" TABLE (1/2)

Name	Type	Description
BeginTime	Date / Time	Date and time of the beginning of the period the alarm is exceeded.
BeginTimeHour	Number (Integer, long)	Conversion of the "time" part (hours, minutes and seconds) of 'BeginTime' into number of seconds after midnight.
EndTime	Date / Time	Date and time of the end of the period the alarm is exceeded.
EndTimeHour	Number (Integer, long)	Conversion of the "time" part (hours, minutes and seconds) of "EndTime" into number of seconds after midnight.
BeginDate	Date / Time	Date of the beginning of the period the alarm is exceeded.
EndDate	Date / Time	Date of the end of the period the alarm is exceeded.
ServiceId	Text 255	Service identifier
FilterId	Text 255	Identifier of the filter associated with the Service concerned.
StatusId	Text 255	Identifier of the Service status concerned.
AscendingProperty	Yes / No	Application direction of the alarm criterion: • Yes: Ascending • No: Descending
AlarmThreshold	Number (Integer, long)	Alarm activation threshold
AlarmDuration	Number (Integer, long)	Duration of alarm activation in seconds
AssociatedStatusId	Number (Integer, long)	Associated Service status identifier: -1 : this alarm does not use any relative property.
CustomCounterId	Text 40	Customized counter identifier
CustomCounterType	Number (Integer, long)	Customized counter type: 0 : None 1 : The "Number of calls meeting the criterion (name of the user variable)", 2 : The "Number of changes meeting the criterion (name of the user variable)", 3 : The "Number of calls meeting the criterion (name of the user variable) over the hour", 4 : The "Number of calls meeting the criterion (name of the user variable) over the hour",
AssociatedCustomCounterId	Text 40	Associated customized counter identifier

Tableau 12.117 "SERVICEALARMS" TABLE (2/2)

Name	Type	Description
AssociatedCustomCounterType	Number (Integer, long)	Associated customized counter type: 0 : None 1 : The "Number of calls meeting the criterion (name of the user variable)", 2 : The "Number of changes meeting the criterion (name of the user variable)", 3 : The "Number of calls meeting the criterion (name of the user variable) over the hour", 4 : The "Number of calls meeting the criterion (name of the user variable) over the hour",

13 DEVELOPMENT APPENDIX

13.1 PURPOSE OF THIS APPENDIX

This appendix is meant more particularly for script developers. It presents detailed information about:

- the Node Modules that can be added (see § 13.2),
- the Variables (see § 13.3),
- the predefined Scripts (see § 13.4).

In addition, this appendix presents a few practical script examples (see § 13.5).

13.2 DETAILED DESCRIPTION OF MODULES AND NODES

List of modules and associated nodes:

Tableau 13.1 LIST OF MODULES AND ADD-ON NODES (1/3)

 **"Database Management" module (see § 13.2.1)**	 **"Interactive Voice Server" module (see § 13.2.2)**
 ActionQuery (see § 13.2.1.3).	 Off Hook (see § 13.2.2.2)
 GetRecords (see § 13.2.1.4)	 GetDTMF (see § 13.2.2.3)
 Navigation (see § 13.2.1.5)	 PlayVoiceMessage (see § 13.2.2.4)
 ManageRecordset (see § 13.2.1.6)	 GetUDP (see § 13.2.2.5)
 CloseRecordset (see § 13.2.1.7	 SendUDP (see § 13.2.2.6)
 BeginTrans (see § 13.2.1.8)	 TransferCall (see § 13.2.2.7)
 Commit (see § 13.2.1.9)	 SaveVoiceMessage (see § 13.2.2.8)
 Rollback (see § 13.2.1.10)	 DeleteVoiceMessage (see § 13.2.2.9)
	 ChangerTypeRessource (see § 13.2.2.10)
	 RetourARessource (see § 13.2.2.11)
	 Conference bridge (see Section 13.2.2.12)
	 Conference (13.2.2.13)
	 IVR Make Call (13.2.2.14)

Tableau 13.1 LIST OF MODULES AND ADD-ON NODES (2/3)

"MakeOutboundCall" module (see § 13.2.3)	**"System" module (see Section 13.2.4)**
"MakeOutboundCall" (see § 13.2.3.2)	Root (see § 13.2.4.2)
"User Interface (UI) module (see § 13.2.5)	GoTo (see § 13.2.4.3)
AlphaNum (see § 13.2.5.2)	GoSub (see § 13.2.4.4)
MCQ (see § 13.2.5.3)	End (see § 13.2.4.5)
Date (see § 13.2.5.4)	Return (see § 13.2.4.6)
Numeric (see § 13.2.5.5)	Assignment (see § 13.2.4.7)
Info (see § 13.2.5.6)	Label (see § 13.2.4.8)
Address (see § 13.2.5.7)	AutoLanguage (see § 13.2.4.9)
ManualLanguage (see § 13.2.5.8)	FunctionCall (see § 13.2.4.10)
AgentTransferCall (see § 13.2.5.9)	Bidirectional Association (see § 13.2.4.11)
Dialog(see § 13.2.5.10)	Unidirectional Association (13.2.4.12)
ExecuteCommandLine(see § 13.2.5.11)	Synchronization (see § 13.2.4.13)
"Web" module (see § 13.2.6)	Wait (13.2.4.14)
GetData (see § 13.2.6.2)	ReserveIVRResource (13.2.4.15)
PushData (see § 13.2.6.3)	
NavigateToURL (see § 13.2.6.4)	**"e-mail Nodes" module (see § 13.2.7)**
Dialog (see §13.2.6.5)	DistributeEmail (see § 13.2.7.2)
"Multimedia" module (see § 13.2.8)	ReplyEmail (see § 13.2.7.3)

Tableau 13.1 LIST OF MODULES AND ADD-ON NODES (3/3)

Send E-Mail (see § 13.2.8.2)	ForwardEmail (see § 13.2.7.4)
Send SMS (see § 13.2.8.3)	DeleteEmail (see § 13.2.7.5)
	CopyEmail (see § 13.2.7.6)
	MoveEmail (see § 13.2.7.7)

13.2.1 "DATABASE MANAGEMENT" MODULE

13.2.1.1 DESCRIPTION OF THE "DATABASE MANAGEMENT" NODES MODULE

The nodes in the "Database Management" add-on module are used in the M5000 CC Media Server trees and the User Interface. They are related to queries and transactions on databases that are not included in the system. These nodes are based on the Microsoft DAO model.

Return code values

In the "generic" part (see § 13.2.1.2) of the Database Management nodes, the "Return code variable" has to be Numeric". After the node is executed, an error code value is returned in this variable.

Most errors in these nodes are related to database operations. Since Microsoft DAO is used to perform the operations, the description of all database errors can be found in the Microsoft Access Help file: a list of errors can be found in the Microsoft Jet Error Message Reference.

List of nodes in the "Database Management" module:

- ActionQuery (see § 13.2.1.3).
- GetRecords (see § 13.2.1.4)
- Navigation (see § 13.2.1.5)
- ManageRecordset (see § 13.2.1.6)
- CloseRecordset (see § 13.2.1.7
- BeginTrans (see § 13.2.1.8)
- Commit (see § 13.2.1.9)
- Rollback (see § 13.2.1.10)

13.2.1.2 GENERAL DESCRIPTION OF THE "GENERIC" PART OF A NODE EDITING WINDOW

This paragraph describes the section of a node editing dialog box that is dedicated to the generic characteristics of the node (see Figure 13.1). This paragraph is then repeated in the following paragraphs during the detailed descriptions of the nodes.

***{Node name}* field**

This text box can be used to type the node name. This name is displayed in the **"Tree visualization"** window, next to the graphical symbol of the node.

***{Identifier}* field**

This value is assigned to the node on creation. Two nodes in the same script must always have different

identifiers. This identifier is automatically given by the system, but it can be changed by the Service manager, as long as the constraint on uniqueness is kept.

***{Return code variable}* field**

This drop-down list box allows you to select an existing variable to which the return code value of the node will be assigned:

- a value is assigned to the "Return code variable" at the end of the node execution. This value remains accessible as long as the variable is not assigned or used as the "Return code variable" of another node,
- each node requires a return code variable of a specific type (numeric, string, date or set). The drop-down list box of a given node contains only variables of the adequate type,
- the value assigned to the return code variable is also specific to each node. Most often, it will be a numeric value corresponding to an error code, but the return code variable can also contain the result of a query performed during the execution of the node.

Note: To find out the values of the return code variables for each node, refer to the detailed description of each node.

***{Access Condition}* fields**

These fields define a boolean expression which must be evaluated to true in order to execute the node.

The access condition expression obeys the following rules:

- enter nothing if you want the access condition to be evaluated to True in all cases (default value),
- the first three fields and the last three fields are comparison expressions. Variables can be compared to other variables (selected from the drop-down list) or to constants (entered by typing them in the text boxes),
- if a second comparison expression is entered (last three fields), a logical operator (OR/AND) must be selected from the drop-down list of the fourth field.

Three different forms of access condition can be used:

Tableau 13.2 NODE ACCESS CONDITIONS

Access Condition	comments
Access condition verified ("**True**")	Nodes having a true access condition will always be executed.
One comparison access condition	A comparison operator is applied on variables or constants. At least one variable must be used in this comparison. Example Given two numeric variables: VariableX and VariableY, the following comparison access conditions would be valid: • VariableX > 45 • VariableX = VariableY • VariableX <= VariableY But the following comparison is not allowed: • 25 > 10.
Two comparisons access condition	Two "one comparison access condition" connected with the AND or the OR logical operator are applied. Example The following access condition is valid: • VariableX > 10 AND VariableX < 40.

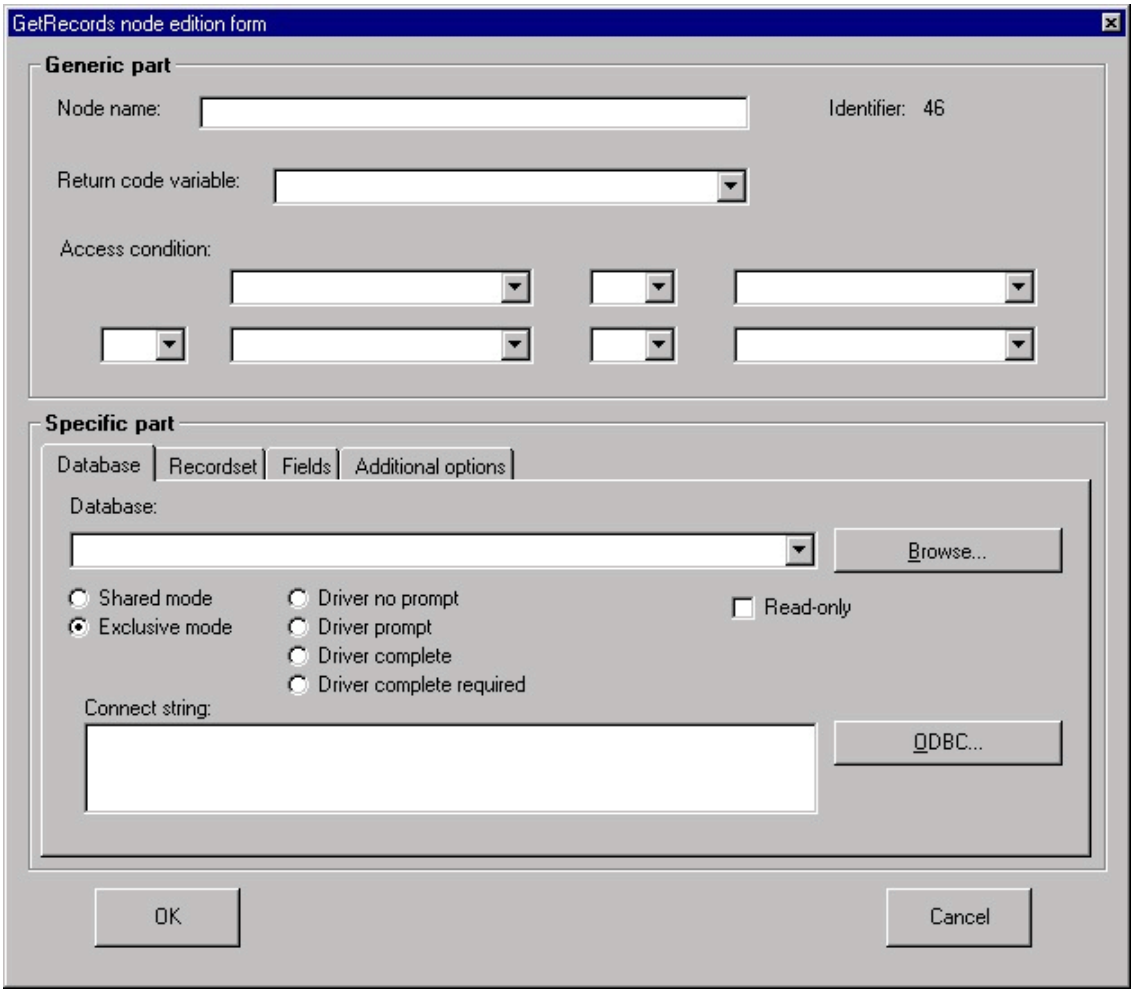


Figure 13.1 GENERAL DESCRIPTION OF THE GENERIC AND SPECIFIC PART OF A NODE EDITING WINDOW

13.2.1.3 DESCRIPTION OF THE "ACTIONQUERY" NODE

Description

The "ActionQuery node"  opens a specified database, runs an SQL query on it and closes it.

This node is based on the Execute method of the Microsoft DAO model. For more information, refer to the Microsoft (DAO) in the Microsoft Access Help.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "ActionQuery" node, the "Return code variable" has to be Numeric". After the node is executed, an error code value is returned in this variable. Typically, these values can be DAO errors generated by Access, System errors (not taken into account by the script) or errors generated by the application. Some possible values are:

Tableau 13.3 VALUES OF THE "ACTIONQUERY" RETURN CODE VARIABLE

Value	Description
0	No error (No error)
-1	No License (Licence missing)
-2	Problem connecting to the database (asynchronous execution)
94	Invalid use of Null Invalid use of null. This error can occur when the fields table from which a recordset is to be created contains no value.

Specific part

Here you can select the database or ODBC pilot to be queried and formulate the query itself.

1 **{Database tab}**:

- **(Microsoft Access) databases**:
  - u Check the ***[Database]*** option to use the (Microsoft Access) database.
  - u In this text box, you must specify the complete path of the database you want to query. You can either:
    - enter the path in the dialog box,
    - click ***[Browse...]*** and select a database file with the dialog box,
    - or from the drop-down list, select an existing variable of String type containing the path at run-time.

Caution: *The path to the database must be fully network qualified when you do not use a local copy of the database on each M5000 CC User machine. Moreover if you use a shortcut to a drive of the network, remember that each M5000 CC User machine must have the same shortcut.*

- **ODBC Connection string**:
  - u Check the ***[ODBC connection chain]*** option to make a request in a database using an ODBC pilot.
  - u In this case, provide the ODBC connection string for this pilot. You can either:
    - enter the connection string manually in the dialog box,
    - Click the ***[Pilot]*** button and select the required pilot from the message box displayed. The text box is then automatically filled.

The ***[Asynchronous execution]*** option is only available if an ODBC pilot is used and if the node is part of a tree that will be executed by M5000 CC Media Server. If this option is checked, the database will be

opened, and the request executed without blocking M5000 CC Media Server which can then process other calls during these operations which may be long.

0 **{Additional options tab}**:

- Tick ***[SQL pass-through]*** if you wish to change directly to the SQL request database (no interpretation of the ODBC layer).
- ***{SQL Query}*** field:

In this text box, you can enter a query using the Structured Query Language (SQL). The version of this language supported in this node is the Microsoft Jet database engine SQL.

Variables can be included in the statement. At run time, they will be textually replaced by their value.

To include a variable:

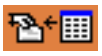
- Press ***[F2]***.
- Select an existing variable from the list that appears on top of the ***{SQL statement}*** text box.
- click ***[OK]***.

Note: *Variables in the **{SQL query}** text box appear in bold underlined format. Check that no supplementary characters are included in the variable name. If other characters (spaces included) stay in bold underlined format, you have to delete them and write them again in the right format in order to avoid compilation problems.*

13.2.1.4 DESCRIPTION OF THE "GETRECORDS" NODE

13.2.1.4.1 PRESENTATION OF THE "GETRECORDS" NODE

Description

The  "GetRecords" node is used to make a selection in a database table. The result of this selection is a table containing a set of records (also called a recordset). For more information on the operations involved in the execution of this node, refer to the *Microsoft (*DAO*) in the Microsoft Access Help.*

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "GetRecords" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable. Typically, these values can be DAO errors generated by Access, System errors (not taken into account by the script) or errors generated by the application. Some possible values are:

Tableau 13.4 VALUES OF THE "GETRECORDS" RETURN CODE VARIABLE

Value	Description
0	No error (No error)
-1	No License (Licence missing)
94	Invalid use of Null Invalid use of null. This error can occur when the fields table from which a recordset is to be created contains no value.
13	Type mismatch. The variable defined to contain the field value is not from the same type as the field. (Type mismatch: The variable defined to contain the field value is not from the same type as the field).

Specific part

1 **{Database tab}**:

This tab defines parameters needed to open the database from which records will be selected. The underlying operation is the OpenDatabase method of the Microsoft DAO model.

- In the Database text box, you must specify the complete path of the database you want to query. You can either:
  - Enter the path with the keyboard in the text box,
  - click on the ***[Browse...]*** button, and select a database file in the dialog box,
  - Select an existing variable of String type containing the path at run-time from the drop-down list.
- The options determine how the database is opened.
- If you do not want the database records to be modified, check ***[Read-only]***.
- In the ***{Connect string}*** text box, enter the connection string needed to open the database. You may also click on the ***[ODBC...]*** button (see § 13.2.1.4.2) and use the dialog box that opens.

Note: All the script nodes are run on the Media Server machine, if the Media Server is deported from the M5000 CC Portal, all connections to the databases of GetRecord nodes have to be accessible on the Media Server Machine !

Caution: *The path to the database must be fully network qualified when you do not use a local copy of the database on each M5000 CC User machine. Moreover if you use a shortcut to a drive of the network, remember that each M5000 CC User machine must have the same shortcut.*

0 **{Recordset}** tab:

This tab defines the features of the recordset that will be created from the open database. The underlying operation is the "OpenRecordset" method of the Microsoft DAO model.

- In the ***{Type}*** frame, select the kind of recordset you want to create.
- The available options differ from one recordset type to another. Select one of them in the ***{Options}*** frame.
- In the ***{Locking options}*** frame, select the way the recordset will be locked.
- In the ***{Source}*** text box, enter a table name, or a query using the Structured Query Language (SQL). The version of this language supported in this node is the Microsoft Jet database engine SQL.

Variables can be included in the text box statement. At run time, they will be textually replaced by their value.

To include a variable:

- Press ***[F2]***.
- Select an existing variable from the list that appears on top of the ***{Source}*** text box.
- Click ***[Validate]***.

Note: *Variables in the SQL statement text box appear in bold underlined format. Check that no supplementary characters are included in the variable name. If other characters (spaces included) stay in bold underlined format, you have to delete them and write them again in the right format in order to avoid compilation problems.*

0 **{Fields}** tab:

This tab can be used to store the first record of the resulting recordset in variables. Each field of this first record can be stored in an appropriate variable.

This feature is very convenient for queries that return a recordset containing a single record.

If you want to add a variable and its corresponding field to the list, click the ***{Add}*** button. If you want to edit a list item, click the ***{Field variable}*** of this item and click the ***[Edit]*** button. You can then:

- Enter the name of the record field in the ***{Field name}*** text box.
- Select an existing variable of the appropriate type to contain the value of this field in the ***{Associated variable}*** list, by clicking it.

0 **{Additional options tab}**:

Using this tab you can decide if the recordset must be closed at the end of the node execution, and select a variable to store the number of records in the set.

- Check ***[Close recordset]*** if you want the recordset to be closed at the end of the node execution.

  If you do not select this option, you will have to close the recordset later using the "CloseRecordset" node (see§ 13.2.1.7). Since this "CloseRecordSet" node needs a reference to the recordset, you must specify an existing variable of String type where the reference will be stored. Select this variable in the scroll down list associated with this check box.

- If you want the number of records contained in the recordset to be stored for later use, select an existing variable of "Numeric" type from the ***{Save the number of records in variable}*** drop-down list.

13.2.1.4.2 USING THE ODBC WITH DATABASE NODES

The application lets you connect with ODBC to remote databases through the GetRecords node. It is thus possible to get a recordset, in a SQL Server database for example, and use its data in scripts with local/global variables or arguments. To connect with GetRecords node, it is necessary to use a connect string which specifies how to connect to the remote database.

The "ActionQuery" and "ManageRecorset" nodes which are normally used to manage databases and recordsets must be used without ODBC. Therefore, they cannot be used, in the present version of the application, with remote databases accessed with ODBC. For more information, see also the following paragraphs:

- ODBC connect string in GetRecords node (see § 13.2.1.4.3),
- ODBC with Microsoft Jet SQL and SQL Pass-Through query (see § 13.2.1.4.4)
- ODBC with "ManageRecordset" and "ActionQuery" nodes (see § 13.2.1.4.5)

13.2.1.4.3 ODBC CONNECT STRING IN A "GETRECORDS" NODE

The "GetRecords" node can be used to access a database on a SQL Server, i.e. to get a recordset. You must use a table whose fields correspond to Access tables (for example: ⇔ VarChar of an SQL Access Server Text variable), 'get record' method in the Dynaset type recordset objects or Instant locking (where an error occurs due to an interpretation in "read only".

Here is an example of connection string which can be used in the ***{DataBase}*** tab:

ODBC;DRIVER={SQL Server};SERVER=test3_srv;UID=sa;PWD=;APP=M5000 CC Service Manager;WSID=PC_RLI;DATABASE=DB1

The parameters of this connection string are:

Tableau 13.5 PARAMETERS OF THIS ODBC CONNECT STRING

parameter	description	Example
DSN	Registered ODBC data source by name	DSN=MyDataSource; (if specified when establishing a connection without DSN, must be the *last argument)*
UID	User name of a recognized user of the database	UID=Victoria;
PWD	Password associated with user name	PWD=ChemMajor;
DRIVER	Description of driver. (place brackets for driver names that include spaces.)	DRIVER={SQL Server};
DATABASE	Default database to use once connected	DATABASE=Pubs;
SERVER	Remote Server name	SERVER=SEQUEL;
WSID	Workstation ID (your system's Net name)	WSID=MYP5
APP	Application name. At design time, this is set to your project name. At run-time this is your .exe name.	APP=Accounting

Note: To use ODBC, you must have an ODBC Driver.

13.2.1.4.4 ODBC WITH MICROSOFT JET SQL AND SQL PASS-THROUGH QUERY

Although you can update information in ODBC databases using Microsoft Jet SQL update queries, or dynaset-type Recordset objects, you should consider using a SQL pass-through query, which is usually much more efficient. SQL pass-through queries are SQL statements that the Microsoft Jet database engine sends directly to the database server (SQL server) without interpretation. Because Microsoft Jet does not interprete them, SQL pass-through queries enable your application to send Server-specific commands directly to your database server.

SQL pass-through query objects are composed of two pieces of information: the SQL statement and the ODBC connection string. **The SQL statement is interpreted only by the database server and must follow the server's SQL language specification**. Furthermore, pass-through SQL statements cannot contain any Visual Basic functions or commands.

The following code sample executes three pass-through action queries in the Microsoft SQL server Pubs sample database. The first query creates a new table called sales_archive with the same structure as the sales table. The second query inserts all sales records before 1993 into the sales_archive table. The third query deletes all sales records prior to 1993 within the sales table. Notice that a single temporary QueryDef object is used to execute all three queries.

```
Sub ArchiveSales()

Dim dbs As DATABASE, qdf As QueryDef
Dim strCn As String, rst As Recordset
Dim strSQL As String

On Error GoTo ErrorHandler

Set dbs = CurrentDb
strCn = "ODBC;DSN=Pubs;UID=sa;PWD=;DATABASE=Pubs"
Set qdf = dbs.CreateQueryDef("")
qdf.Connect = strCn
strSQL = "CREATE TABLE dbo.sales_archive _
(stor_id char (4) "
strSQL = strSQL & "NOT NULL, _
ord_num varchar (20) NOT NULL, "
strSQL = strSQL & "ord_date datetime NOT NULL, "
strSQL = strSQL & "qty smallint NOT NULL, "
strSQL = strSQL & "payterms varchar (12) NOT NULL,"
strSQL = strSQL & " title_id tid NOT NULL)"
qdf.ReturnsRecords = False
qdf.SQL = strSQL
qdf.Execute
strSQL = "INSERT INTO sales_archive SELECT * "
strSQL = strSQL & "FROM sales WHERE "
strSQL = strSQL & "ord_date < '1/1/93'"
qdf.SQL = strSQL
qdf.Execute
strSQL = "DELETE FROM sales "
strSQL = strSQL & "WHERE ord_date < '1/1/93'"
qdf.SQL = strSQL
qdf.Execute

Exit Sub

ErrorHandler:
MsgBox "Error " & Err & ": " & Error
Exit Sub

End Sub
```

13.2.1.4.5 ODBC WITH "MANAGERECORDSET" AND "ACTIONQUERY" NODES

Recordsets cannot be modified when accessing databases with ODBC in the present version of the application.

Indeed, ManageRecordset only allows you to Add New / Update / Delete recordsets, but does not allow the user to directly introduce a SQL statement (the Add New, Update and Delete being done for a DB-JetEngine Workspace). The return code when thee user tries to modify such recordset, with “Add New” for example, is 3219 (Invalid Operation).

On the other hand, the ActionQuery node cannot be used in this context, because no record set is indicated in its specific part (but a table); return code 94 (Invalid Use of Null) is return.

Note: If one tries to realize an “INSERT INTO … VALUES …”, i.e. to modify records, directly in the GetRecords node, the same error occurs.

13.2.1.5 DESCRIPTION OF THE "NAVIGATION" NODE

Description

The  "Navigation" node changes the position of the current record in an existing recordset and then copies the fields of the current record in variables.

The recordset must have been obtained previously using a "GetRecords" node (see § 13.2.1.4).

For more information on the operations involved in the execution of this node, refer to the Microsoft (DAO) in the Microsoft Access Help.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "Navigation" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable. Typically, these values can be DAO errors generated by Access, System errors (not taken into account by the script) or errors generated by the application. Some possible values are:

Tableau 13.6 VALUES OF THE "NAVIGATION" RETURN CODE VARIABLE

Value	Description
0	No error (No error)
-1	No License (Licence missing)
13	Type mismatch. The variable defined to contain the field value is not from the same type as the field. (Type mismatch: The variable defined to contain the field value is not from the same type as the field).
91	Object variable or With block variable not set. The recordset handle is incorrect. ('Object' variable or 'With' block variable not configured. The recordset management is not correct).
94	Invalid use of Null Invalid use of null. This error can occur when the fields table from which a recordset is to be created contains no value.
3021	No current record (No record in progress).

Specific part

1 ***{Select recordset}*** field:

From this drop-down list, select an existing variable of String type containing a reference to the recordset. The recordset reference must have been set previously in the GetRecords node (see § 13.2.1.4) where the recordset was obtained.

0 **{Navigation}** tab:

Two navigation methods can be used: move to a specific record, or seek a record according to criteria.

- ***[Move]*** to a record checkbox: if you check this option you have to select one of the possibilities from the associated drop-down list. The underlying operation is the Move method of the Microsoft DAO model.

  If you choose to move forward or backward a specified number of records, you have to type this number of records in the rightmost combo box, or select an existing variable of Numeric type containing it at run-time from the associated drop-down list.

- ***[Find]*** a record checkbox: if you check this option you have to specify the seek parameters. The underlying operation is the Seek method of the Microsoft DAO model.

  u In the ***{Index}*** combo box, enter the name of the index involved in the seek operation, or select an existing variable of "String" type containing it at run-time from the drop-down list.

- Select a comparison operator from the ***{Comparison}*** drop-down list.
- The Key1,Key2, ... list contains the key values that each index part will be compared with. To enter a new value at the end of the list, click the ***[Add]*** button. You can then type the value in the ***{Select the key}*** combo box, or select an existing variable of "String" type containing it at run-time from the drop-down list.

Note: If you use the Seek method (with the same arguments) more than once on the same recordset, the same record will be obtained (and not the successor of the current record matching the seek parameters). This is because the Seek method of the Microsoft DAO model always searches for records starting at the beginning of the recordset.

0 **{Fields}** tab:

This tab can be used to store fields of the current record in variables (after the Move or Seek operation). Each field of the current record can be stored in an appropriate variable.

The list is managed in the same way as in the **{Fields}** tab of the "GetRecords" node (see § 13.2.1.4).

13.2.1.6 DESCRIPTION OF THE "MANAGERECORDSET" NODE

Description

The  "ManageRecordset" node performs various recordset management operations: add a new record, delete or edit the current record.

These operations are performed on an existing recordset, which must have been obtained previously using a "GetRecords node" (see § 13.2.1.4). The current record position in a recordset can be modified using the "Navigation" node (see § 13.2.1.5)..

For more information on the operations involved in the execution of this node, refer to the Microsoft (DAO) in the Microsoft Access Help.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "ManageRecordset" node, the "Return code variable" must be "Numeric". After the node is executed, an error code value is returned in this variable. Typically, these values can be DAO errors generated by Access, System errors (not taken into account by the script) or errors generated by the application. Some possible values are:

Tableau 13.7 VALUES OF THE "MANAGERECORDSET" RETURN CODE VARIABLE

Value	Description
0	No error (No error)
-1	No License (Licence missing)
91	Object variable or With block variable not set. The recordset handle is incorrect. ('Object' variable or 'With' block variable not configured. The recordset management is not correct).

Specific part

1 ***{Select recordset}*** field:

From this drop-down list, select an existing variable of String type containing a reference to the recordset. The recordset reference must have been set previously in the GetRecords node (see § 13.2.1.4) where the recordset was obtained.

Operation on the recordset

- Select ***[Add new record]*** if you want to build a new record an add it to the recordset.
- Select ***[Edit current record]*** if you want to modify some of the field values of the current record.
- Select ***[Delete current record]*** if you want to destroy the current record.

The underlying operations are the Add, Edit and Delete methods of the Microsoft DAO model.

0 **{Fields}** tab:

This tab is used with the Add new record and Edit current record operations only, to associate fields of the current record in the recordset with variables. Each field of the current record can be associated with an appropriate variable.

The list is managed in the same way as in the **{Fields}** tab of the "GetRecords" node (see § 13.2.1.4).

13.2.1.7 DESCRIPTION OF THE "CLOSERECORDSET" NODE

Description

The  CloseRecordset node closes an open recordset. If a node is not closed immediately in the "GetRecords node" (see § 13.2.1.4) where it was opened, it has to be closed later in the tree using a "CloseRecordset" node (see § 13.2.1.7).

For more information on the operations involved in the execution of this node, refer to the Microsoft (DAO) in the Microsoft Access Help.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "CloseRecordset" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable. Typically, these values can be DAO errors generated by Access, System errors (not taken into account by the script) or errors generated by the application. Some possible values are:

Tableau 13.8 VALUES OF THE "CLOSERECORDSET" RETURN CODE VARIABLE

Value	Description
0	No error (No error)
-1	No License (Licence missing)

Specific part

From this drop-down list, select an existing variable of String type containing a reference to the recordset. This reference must have been set previously in the "GetRecords" node (see § 13.2.1.4) where the recordset was obtained.

The underlying operation is the "Close" method of the Microsoft DAO model.

13.2.1.8 DESCRIPTION OF THE "BEGINTRANS" NODE

Description

The BeginTrans node  corresponds to the BeginTrans method of the Microsoft (DAO) model. For more information, refer to the Microsoft (DAO) in the Microsoft Access Help.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "BeginTrans" node, the "Return code variable" has to be Numeric". After the node is executed, an error code value is returned in this variable. Typically, these values can be DAO errors generated by Access, System errors (not taken into account by the script) or errors generated by the application. Some possible values are:

Tableau 13.9 VALUES OF THE "BEGINTRANS" RETURN CODE VARIABLE

Value	Description
0	No error (No error)
-1	No License (Licence missing)
-2	Number of database transactions simultaneously done reached Number of database transactions simultaneously done reached

Specific part

This node has no specific properties.

13.2.1.9 DESCRIPTION OF THE "COMMIT" NODE

Description

The "Commit" node  corresponds to the "CommitTrans" method of the Microsoft DAO model. For more information, refer to the Microsoft Data Access Objects in the Microsoft Access Help.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "Commit" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable. Typically, these values can be DAO errors generated by Access, System errors (not taken into account by the script) or errors generated by the application. Some possible values are:

Tableau 13.10 VALUES OF THE "COMMIT" RETURN CODE VARIABLE

Value	Description
0	No error (No error)
-1	No License (Licence missing)

Specific part

This node has no specific properties.

13.2.1.10 DESCRIPTION OF THE "ROLLBACK" NODE

Description

The "Rollback" node  corresponds to the "Rollback" method of the Microsoft DAO model. For more information, refer to the Microsoft Data Access Objects in the Microsoft Access Help.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "Rollback" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable. Typically, these values can be DAO errors generated by Access, System errors (not taken into account by the script) or errors generated by the application. Some possible values are:

Tableau 13.11 VALUES OF THE "ROLLBACK" RETURN CODE VARIABLE

Value	Description
0	No error (No error)
-1	No License (Licence missing)

Specific part

This node has no specific properties.

13.2.2 "INTERACTIVE VOICE RESPONSE SERVER (IVR)" MODULE

13.2.2.1 GENERAL INFORMATION

The nodes of the 'Interactive Voice Response Server (IVR) module  are used in Call Server trees (inbound Services only). They allow interactions between the system and the caller on the phone.

The list of available nodes slightly differs depending on the type of tree: with IVR or without IVR.

List of nodes in the "Interactive Voice Response Server" module:

Tableau 13.12 LIST OF ADD-ON NODES OF THE IVR MODULE ACCORDIGN TO THE INTERACTIVE OR NON-INTERACTIVE STATE OF THE VOICE SERVER

Interactive voice response	Voice Server without IVR
 Off Hook (see § 13.2.2.2)	
 GetDTMF (see § 13.2.2.3)	
 PlayVoiceMessage (see § 13.2.2.4)	
 GetUDP (see § 13.2.2.5)	

Tableau 13.12 LIST OF ADD-ON NODES OF THE IVR MODULE ACCORDIGN TO THE INTERACTIVE OR NON-INTERACTIVE STATE OF THE VOICE SERVER

 SendUDP (see § 13.2.2.6)	
 TransferCall (see § 13.2.2.7)	
 SaveVoiceMessage (see § 13.2.2.8)	
 DeleteVoiceMessage (see § 13.2.2.9)	
 ChangerTypeRessource (see § 13.2.2.10)	
 RetourARessource (see § 13.2.2.11)	

13.2.2.2 DESCRIPTION OF THE "OFF HOOK" NODE

Description

The "Off hook" node  establishes the communication between the caller and the system.

Execution of this node is required before some other nodes can be executed:

- Play Voice Message (see § 13.2.2.4),
- Record a Voice Message (see § 13.2.2.8),
- Enter a DTMF sequence (see § 13.2.2.3),
- Transfer call (see § 13.2.2.7).

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "Off Hook" node, the "Return code variable" must be "Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.13 VALUES OF THE "OFF HOOK" RETURN CODE VARIABLE

Value	Description
0	No error (No error)
-2	Release call detection (Release call detection)
- 3	Dialogic and/or CSTA events not received (Dialogic and/or CSTA events not received)
- 100	No resource associated to the run (No resource associated with run)
- 132	Unsupported interface defined for the resource associated with the run unsupported interface defined for the resource associated with the run
- 133	Cannot put the channel to on-hook (cannot on-hook the channel)

Tableau 13.13 VALUES OF THE "OFF HOOK" RETURN CODE VARIABLE

Value	Description
- 134	You are trying to execute an OffHook node more than one time (an Off Hook node is executed several times)

Specific part

This node has no specific properties.

13.2.2.3 DESCRIPTION OF THE "GETDTMF" NODE

Description

The  "GetDTMF" node records a sequence of digits entered by the caller using the keypad of his phone. The character sequence is stored in the return code variable whose type has to be String.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "GetDTMF" node, the "Return code variable" must be Numeric". After the execution of this node, the value returned in this variable is the DTMF string (if no error occurred) or an error code string. The possible values are:

Tableau 13.14 VALUES OF THE "GETDTMF" RETURN CODE VARIABLE

Value	Description
- 1	Timeout reached (Timeout reached (see below))
- 2	Release call detection (Release call detection)
- 100	No resource associated to the run (No resource associated with run)
- 101	Dialogic channel handle for the resource associated to the run is invalid (The resource management Dialogic channel is not valid)
- 112	Dialogic error while clearing tpt structure (Dialogic error while clearing tpt structure)
- 120	The number of DTMFs to detect is invalid (Number of DTMFs to detect invalid)
- 121	The digit used to terminate the DTMF detection is invalid (Character used to terminate the DTMF detection is invalid)
- 122	The timeout value is invalid (The timeout value is invalid)
- 123	Cannot obtain the number of DTMFs to detect (Cannot obtain the number of DTMFs to detect)
- 124	Cannot obtain the timeout value (Cannot obtain the timeout value)
- 125	Dialogic error while reading DTMF buffer (Dialogic error while reading DTMF buffer)
- 220	Unexpected termination mask (Unexpected termination mask)

Specific part

This part of the "GetDTMF" node edition dialog box describes parameters of the character sequence.

1 ***{Maximum number of digits}*** field:

The maximum number of digits of the sequence is entered in this combo box. You can either enter a numeric value or select a numeric variable from the drop-down list.

The maximum number of digits can be 1 up to 32.

0 ***{Termination Digit}*** field:

This drop-down list defines the termination digit of the sequence. At run-time, when the caller presses the termination digit on his phone pad, the input of DTMF digits ends.

Select the digit (or a string variable which will contain this value) from the drop-down list. Select None to indicate that no termination digit has to be used (the string will terminate after Max number of digits have been entered). If a variable is used as termination digit, it must contain one of the following values at run-time: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, *, #, A, a, B, b, C, c, D, d. This variable can also contain the empty string, which is the equivalent of the None value.

The termination digit is not included in the resulting character sequence.

Example:

- Termination digit #
- Maximum number of digits: 5
- Keys pressed by the caller: 1 2 5 # 4
- Result: the return code variable holds the string "125".

0 ***{Timeout (seconds)}*** field:

This combo box is used to define the maximum time allowed for each key to be pressed by the caller. Each time a key is pressed, the caller has this timeout time to press the next key. If no key is pressed before the end of the timeout, the digit reading fails and the return code variable is assigned the value 1.

The timeout can be defined by typing its value in the combo box or by selecting a numeric variable from the drop-down list. In any case, the timeout must be a numeric value between 0 and 60.

Example: Application in the "PlayVoiceMessage" node (see "simple script" example in § 13.5.1).

13.2.2.4 DESCRIPTION OF THE "PLAYVOICEMESSAGE" NODE

Description

The "PlayVoiceMessage" node  can play various sounds to the caller on the phone. This is useful to communicate with the caller before the call is transferred to an agent.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "PlayVoiceMessage" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.15 VALUES OF THE "PLAYVOICEMESSAGE" RETURN CODE VARIABLE (1/2)

Value	Description
0	No error
94	The information to synthesise contains a non-initialised variable.
-1	Global timeout reached (Global timeout reached)
-2	Release call detection (Release call detection)
-3	Insufficient licence available to synthesise message
- 100	No resource associated to the run (No resource associated with run)

Tableau 13.15 VALUES OF THE "PLAYVOICEMESSAGE" RETURN CODE VARIABLE (2/2)

Value	Description
- 101	Dialogic channel handle for the resource associated to the run is invalid (The resource management Dialogic channel is not valid)
- 102	Incorrect value for the language (Incorrect value assigned to language)
- 104	Cannot insert single segment (Cannot insert single segment)
- 105	Cannot insert digit sequence (Cannot insert digit sequence)
- 106	Cannot insert number sequence (Cannot insert number sequence)
- 107	Cannot insert date sequence (Cannot insert date sequence)
- 108	Invalid segment type (Invalid segment type)
- 109	No segment to play (No segment to play)
- 112	Dialogic error while clearing tpt structure (Dialogic error while clearing tpt structure)
- 113	Dialogic error while opening voice file (external file doesn't exist anymore) (Dialogic error while opening voice file (external file doesn't exist anymore))
- 114	Dialogic error while opening voice file (Segment File) (Dialogic error while opening voice file (Segment File))
- 115	Dialogic error while clearing DTMF buffer before playing message (Dialogic error while clearing DTMF buffer before playing message)
- 116	Dialogic error while playing message (Dialogic error while playing message)
-117	Error during node execution (solution without IVR)
-118	Error during node execution (solution without IVR): a variable does not contain the name of an announcement
-119	Error while creating the text to synthesise
-120	No voice associated with the language in which the text must be synthesised
-121	The voice to use for voice synthesis is not available on the PC on which the script is executed (call server).
- 200	Dialogic error while closing voice file Dialogic error while closing voice file
- 202	The number of voice files to close does not fit the number of languages in which messages have been played (The number of voice files to close does not fit the number of languages in which messages have been played).
- 203	Error during voice synthesis

Voice Server with IVR tree - Specific part

The message played to the caller can be composed of a single sound file or several elements, or voice synthesis.

1 ***[Play external file]*** checkbox:

A single pre-recorded sound can be played to the caller. The sound has to be saved as a Wave file, in the CCITT µ-law, 8 kHz, 8 bit, mono format.

If you want the message to be made of a single sound file, check ***[Play external file]***, and click the ***[Browse...]*** button. Select a sound file and click ***OK***.

Caution: *the path to the file must be fully network qualified when you do not use a local copy of this file on each M5000 CC User machine. Moreover if you use a shortcut to a drive of the network, remember that each M5000 CC User machine must have the same shortcut.*

0 ***[Play elements]*** checkbox:

The voice message can be built as a list of sounds defined in the script (also called prompts), numbers, dates or digit sequences.

If there is still more than one current language selected when tree execution reaches the PlayVoiceMessage node, the list of sounds is played in all current languages.

If you want the message to be a list of sound elements, check ***[Play elements]***. The list of sound elements appears.

You can add an element to the list by clicking the ***[Add]*** button (the new element will be added at the end of the list) or by selecting an element from the list and then clicking the Insert button (the new element will be added before the selected element).

0 ***[Voice synthesis]*** checkbox:

- ***{Select language}*** field:

  This field is used to select the language for which the text to be selected is added or modified. A text must be defined for all the languages used while executing the script.

- Text box:

  The text box under the language selection field is used to introduce the text to synthesise for a given language. Some variables may be used with the F2 key. These variables are replaced by their value when the script is executed.

- [Segment] ***checkbox***: this option is used to add a prompt defined in the script. Select the name of a prompt defined in the script or an existing variable of String type containing this name at run-time from the drop-down list.

- ***[Sequence]checkbox:*** not available in this product version.

- ***[Number sequence] checkbox***: this option is used to add a number which will be played "globally". For example, "55" will be played "Fifty-five". Enter the number in the combo box, or select an existing variable of Numeric type from the drop-down list.

- ***[Mask]*** checkbox: default mask is ###,###,###.#### allowing to play Decimal Numeric Elements. The digits used and their functionalities are the following:

  - (#): Digit placeholder. This placeholder displays a digit or nothing. If the expression contains a digit in the position where the # appears in the string format, it is displayed. If not, nothing is displayed in this position.
  - (0): Digit placeholder. This placeholder displays a digit or zero. If the expression contains a digit in the position where the 0 appears in the string format, it is displayed. If not, the digit 0 is displayed in this position.
  - (.): Decimal placeholder. The decimal placeholder determines how many digits are displayed to the left and right of the decimal separator.
  - (,): Thousand separator. The thousand separator separates thousands from hundreds within a number that has four or more places to the left of the decimal separator.
  - (+,-): Literal character. The '+' character allows the sign pronunciation for positive numbers.
  - (%): Percentage placeholder. This character is used to play the percentage sound at the end of the number.

  Note: *If the mask is left empty, the number is displayed without formatting.*

- ***[Date sequence]*** checkbox: this option is used to add a date (plus time if needed). The date format has to match with the regional settings of your computer. Enter the number in the combo box, or select an existing variable of Numeric type from the drop-down list.

- ***[Mask]*** checkbox: default mask is d/m/y h:n:s used to play String Elements. The digits used and their functionalities are the following:
  - (d) : Day placeholder. This placeholder allows playing the day part of the date. The first date separator will be played before the day.
  - (m): Month placeholder. This placeholder allows playing the month part of the date. The second date separator will be played before the month.
  - (y): Year placeholder. This placeholder allows playing the year part of the date. The third and fourth date separator will be played respectively before and after the year.
  - (/): Date separator. The date separator separates the day, month, and year when date values are formatted.
  - (h): Hour placeholder. This placeholder allows playing the hour part of the time. The 'Hour' system prompt is played after the number.
  - (n) : Minute placeholder. This placeholder allows playing the minute part of the time. The 'Minute' system prompt is played after the number.
  - (s) : Second placeholder. This placeholder allows playing the second part of the time. The 'Second' system prompt is played after the number.
  - (:): Time separator. The time separator separates the hour, minute, and second when time values are formatted.

Note: *If the mask is left empty, the day, month and year are played.*

- ***[Telephone Telephone seq.] checkbox***: not available in this product version.
- ***[Character sequence]*** checkbox: this option is used to play characters one at a time from a sequence. For example, "55" will be played "Five five". Enter the number in the combo box, or select an existing variable of Numeric type from the drop-down list.

0 Options

- ***[Interruptible by DTMF]*** checkbox: select this option if you want the message to stop immediately if the caller starts entering digits using the phone pad.
- ***[ClearDTMFBufferBefore]*** checkbox: select this option if you want to erase all information, entered previously by the caller's phone pad, at the beginning of the node execution (before the message is played).
- ***[ClearDTMFBufferAfter]*** checkbox: select this option if you want to erase all information, entered by the caller's phone pad, at the end of the node execution (after the message is played).

Voice Server without IVR tree - Specific part

The message played to the caller is composed of a list of PBX prompts defined in the script. Each prompt is defined in all the possible languages of the script. If there is still more than one current language selected when tree execution reaches the PlayVoiceMessage node, the list of sounds is played in all current languages.

You can add an element to the list by clicking the ***[Add]*** button (the new element will be added at the end of the list) or by selecting an element from the list and then clicking the Insert button (the new element will be added before the selected element).

The ***{Duration]*** field specifies the different spoken announcement durations in seconds in each possible language.

To delete a prompt, select it then click on the ***[Delete]*** button of the specific part.

During the script compilation, the properties of each specified PBX sound are checked. If some message call pit groups have changed, then the new values are placed in the "PlayVoiceMessage" node. In this case, the script compilation succeeds.

If one of the specified PBX prompts does not exist anymore (the prompt is deleted whereas it is currently used in the node), then the compilation fails. If there isn't any PBX prompt indicated in the node, the compilation also fails.

A variable can also be selected to specify a film to be added and/or inserted. In this case, the variable must contain the name of a specific announcement when the node is run. In this case, the announcement is played instead of the variable.

13.2.2.5 DESCRIPTION OF THE "GETUDP" NODE

Description

The 

"GetUDP" node receives a message sent by a remote PC over a network using the UDP (User

Datagram Protocol) (see glossary in Section 1.4).

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "GetUDP" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.16 VALUES OF THE "GETUDP" RETURN CODE VARIABLE

Value	Description
0	No error (No error)
- 1	Timeout reached (Timeout expired)
- 2	Release call detection (Release call detection)
- 3	No variable is associated to existing fields No variable is associated to existing UDP fields
- 100	No resource associated to the run (No resource associated with run)
- 122	The timeout value is invalid (The timeout value is invalid)
- 124	Cannot obtain the timeout value (Cannot obtain the timeout value)
- 150	Cannot set timeout Cannot set timeout
-117	Error during node execution (solution without IVR)
-118	Error during node execution (solution without IVR): a variable does not contain the name of an announcement
- 200	Dialogic error while closing voice file Dialogic error while closing voice file
- 250	Cannot set IP address cannot set IP address
- 251	Cannot set IP port Cannot set IP port
- 252	Cannot set header code Cannot set header code
- 253	Cannot set header identifier Cannot set header identifier
- 254	Cannot set data variable cannot set data variable
- 255	Bad timeout type (Bad timeout type)

Specific part

1 **{Header}** tab:

This tab can be used to save information collected by the system in the header of the UDP message.

Two fields of the UDP message can be stored in variables:

- ***{Identifier}*** field this field can be stored in a variable of String type. Select an existing variable from the drop-down list. The None value indicates that the identifier will not be saved in a variable.
- ***{Code}*** field: this field can be stored in a variable of String type. Select an existing variable from the drop-down list. Leaving this field empty indicates that the code won't be saved in a variable.

0 **{Source}** tab:

It is possible either to receive a message whatever its sender or to specify from which sender the message must come. In the first case, the IP address and port number of the sender can be stored in variables for later use.

The sender of a UDP message is identified by its IP address and port number.

- ***{IP Address/DNS Name}*** field: enter the IP address in this combo box or select a variable of String type containing it from the drop-down list. The IP address must be written in Internet address format (##d.##d.##d.##d), where d represents a digit and # represents a digit or nothing (for example: 123.4.5.6)). When Any is selected, a UDP message coming from any IP address can be received. In this case, you can save the IP address of the sender by checking ***[Return in]*** and then selecting a variable from the rightmost drop-down list.
- ***{IP Port}*** field: enter the port number in this combo box or select a variable of Numeric type containing it from the drop-down list. The port number must be a numerical value between 0 and 65535. When "Any" is selected, all the UDP messages from any port number may be received. In this case, you can save the port number of the sender by checking ***[Return in]*** and then selecting a variable from the rightmost drop-down list.

0 **{Data}** tab:

This tab enumerates the variables which will contain each part of the data field of the UDP message.

The data field of UDP messages exchanged between system nodes is a string containing parts separated by spaces or enclosed in square brackets. Each item has to be stored in an appropriate variable upon receipt of the message. The ordered list of variables corresponding to the data field of the UDP message is managed as follows:

- A variable can be added using the ***[Add]*** button (variable added at the end of the list) or by selecting a variable from the list and clicking ***[Insert]*** (the new variable will be added before the selected variable). You can then select an existing variable from the list that appears, by clicking it and then clicking the ***[OK]*** button, or by double-clicking it.
- A variable can be removed from the list by selecting it and clicking the ***[Delete]*** button.

0 **{Local socket}** tab:

This tab is used to select a socket (see Sheet U-341) defined on the local PC from which the UDP message will be received.

The socket identifies an <IP address, port number> pair. It must be defined in the configuration file of the M5000 CC Media Server application.

Enter the identifier of the socket in the ***{Name}*** combo box, or select an existing variable of "String" type containing it from the drop-down list.

0 ***{Timeout (seconds)}*** field:

If no voice message is played while waiting for the UDP message, a timeout period must be defined.

- Uncheck ***[Play voice message while waiting]***.
- In the ***{Timeout}*** combo box, enter the number of seconds during which the UDP message can be received, or select a variable of "Numeric" type which will contain this value at run-time from the drop-down list.

At run-time, if the timeout period has expired and no UDP message was received, an error code value (-1) is assigned to the return code variable.

0 ***[Play voice message while waiting]*** checkbox:

Instead of waiting "silently" for a UDP message to arrive, the system can play a voice message (or any sound) to warn the caller that his call is still being processed correctly. If there isn't any IVR resource and the node is put in a Voice Server without IVR tree, then the system can play any PBX sound defined earlier in the Sounds management window.

- Check ***[Play voice message while waiting]***.
- If you want the message to be interrupted upon UDP message reception, check ***[Voice message can be interrupted]***.

- Click the ***Play*** button.
- Select a sound to play in the same way as in the "PlayVoiceMessage" node (see § 13.2.2.4)..

13.2.2.6 DESCRIPTION OF THE "SENDUDP" NODE

Description

The 

"SendUDP" node sends a message to a remote PC over a network using the User Datagram Protocol (UDP) (see glossary in Section 1.4).

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "SendUDP" node, the "Return code variable" must be "Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.17 VALUES OF THE "SENDUDP" RETURN CODE VARIABLE

Value	Description
94	Invalid use of Null invalid use of Null
0	No error (No error)
- 1	Timeout reached (Timeout expired)
- 2	Release call detection (Release call detection)
- 118	Error during node execution (solution without IVR)
- 160	The datagram identifier in the header is invalid invalid datagram ID in header
- 161	The datagram code in the header is invalid invalid datagram code in header
- 162	The destination port is not between 0 and 65535 (The destination port is not between 0 and 65535)
- 163	Impossible to find socket (Cannot find socket)
- 164	Cannot obtain data to send (Cannot obtain data to send)
- 165	Run's identifier is invalid (Run's identifier is invalid)
- 166	Cannot send UDP packet Cannot send UDP packet
-167	No IP address is associated to the destination no IP address associated with the destination

Specific part

1 **[Header]** tab:

This tab is used to build the UDP message header.

Two fields of the UDP message header can be defined:

- ***{Identifier}*** field this is a character sequence that identifies the UDP message. The system can build this identifier automatically for you: this is done by selecting the "Automatic" option in the Identifier combo box. You can then save this built identifier in a variable by checking ***[Return Id in]*** and then selecting an existing variable of type "String" in the drop-down list to the right of it.
- You can also provide your own identifier. Type it in the ***{Id}*** combo box or select the variable holding it. The length of the identifier must not exceed 8 characters.
- ***{Code}*** field: numerical value between 0 and 9999. When UDP is used in a message transfer, the code is the request type (it defines the sent request or the request result). Enter the number in the ***{Code}*** combo box, or select an existing variable of Numeric type from the drop-down list.

The header for the UDP messages is composed of the several elements:

Signature (string*10), SourceRun (long), DestinationRun (long), Classe (long), Code (long), Identifier(string*8), Reserved (string*13) ; where only the Code and Identifier elements must be modified if the automatic mode is not selected.

The UDP message for the header is composed of these elements in the following sequence:

1---------10 11 12---------18 19----------25 26----30 31--37 38--------46 47--------60

[Signature] [SourceRun] [DestinationRun] [Classe] [Code] [Identifier] [Reserved]

where Signature ="AGORA_0001"

0 **{Destination}** tab:

This tab is used to define the network address of the destination application.

The destination of an UDP message is identified by its IP address and port number.

- ***{IP Address/DNS Name}*** field: enter the IP address in this combo box or select a variable of String type containing it from the drop-down list. The IP address must be written in Internet address format (##d.##d.##d.##d), where d represents a digit and # represents a digit or nothing (for example: 123.4.5.6)).
- ***{IP Port}*** field: enter the port number in this combo box or select a variable of Numeric type containing it from the drop-down list. The port number must be a numeric value between 0 and 65535.

0 ***{Data}*** tab:

This tab is used to enter the contents of the UDP message.

The "Data" field of a UDP message is a string. UDP messages exchanged by system nodes are structured in parts separated by spaces. Each part is received in a separate variable in the corresponding "GetUDP node" (see § 13.2.2.5).

You can define the data field of the UDP message by entering characters and inserting existing variables. Insert the variables by pressing ***[F2]***. Then select an existing variable from the list and click on ***[OK]***.

Note: *If a variable of String type containing space characters is included in the {Data} field, the space characters will also be considered as separators. More than one variable must then be defined in the {Data} tab of the corresponding "GetUDP" node.*

0 ***{Local socket}*** tab:

This tab is used to select a socket defined on the local machine to use for UDP message transmission.

The socket identifies an <IP address, port number> pair. It must be defined in the configuration file of the M5000 CC Media Server application.

Enter the identifier of the socket in the ***{Name}*** combo box, or select an existing variable of "String" type containing it from the drop-down list.

13.2.2.7 DESCRIPTION OF THE "TRANSFERCALL" NODE

13.2.2.7.1 PRESENTATION OF THE "TRANSFERCALL" NODE

Description

The "Transfer Call" node  establishes a communication between the caller and an agent or

transfers the call to a phone extension.

Impact on the execution of the tree

If the transfer is successful, the "TransferCall" node execution is blocked until:

- the physical call is terminated **and**
- the agent script is terminated **and**
- the Post Call Processing is terminated (if any).

If the transfer was successfully terminated, the execution passes to the End section of the tree. The same behavior applies when the caller hangs up while waiting. When the transfer terminates in any other way, the tree execution continues normally.

FAQ : Comment gérer un échec de transfert ? (see § 13.2.2.7.3).

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "TransferCall" node, the "Return code variable" must be "Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.18 VALUES OF THE "TRANSFERCALL" RETURN CODE VARIABLE (1/2)

Value	Description
0	Call successfully transferred
-1	Global timeout reached
-2	Release call detection
-3	No logged user able to answer the call
-4	Selected agent is logged out
-5	Selected agent is not assigned to the current version of the Service
-6	Selected agent is not in the Service
-7	Unable to start agent script
-8	Agent script is cancelled
-9	Agent script is stopped
-10	Agent script error
-11	Agent script failure error
-12	Transfer error
-13	Transfer interrupted by DTMF(DTMF)
-14	Line busy
-15	Line not off-hooked
-19	Selected agent is logged in without phone
-20	No remote DNIS available for the remote transfer on the remote Server
-21	Impossible to find on the network the overflow Server to transfer the call or CSTA connection lost on overflow Server or no Call Server connected to overflow Server Impossible to find on the network the overflow Server to transfer the call or CSTA connection lost on overflow Server or no Call Server connected to overflow Server
-22	Too many remote transfers have been done for this call (max.5)
-23	No resource available for the remote transfer on the remote Server

Tableau 13.18 VALUES OF THE "TRANSFERCALL" RETURN CODE VARIABLE (2/2)

Value	Description
-24	No Service created or available (Beta or Production) for the remote transfer on the remote Server No Service created or available (Beta or Production) for the remote transfer on the remote Server
-25	The outbound Service is closed.
-26	No sound defined (solution without IVR)
-27	No Transfer by pool license
-117	Error during node execution (solution without IVR)
-118	Error during node execution (solution without IVR): a variable does not contain the name of an announcement
- 200	Dialogic error while closing voice file Dialogic error while closing voice file

Note: If an error occurs when sending e-mail (for recorded agent), the return code of the transfer node is changed; "20" is subtracted from the value of "Return code" to take account of the error (description of the error is available in server log)

Specific part

There are four different transfer destinations, defining four types of transfer with specific parameters: a transfer to an agent, to a Service member, to an extension or to a remote Service.

1 *Transfer to a phone extension*

This type of transfer allows you to transfer the call to an external phone number in a monitored way. You could use it to transfer the call to an external contact center.

- To select this transfer type, check ***[Extension]*** in the **{Destination}** tab.

  There are several possibilities to select an extension in the ***[Extension]*** frame:

  - Right-click the text box and select **[Variable]**. You can then select an existing variable of String type containing the extension at run-time by double-clicking a list item.
  - Right-click in the text box and select ***[Server object]***. You can then select one of the extensions defined in the system by double-clicking a list item.

    Note: *In the **[Server Object]**box, only public and private extensions are available: call call pits cannot be selected.*

  - right-click in the text box and select ***[Insert value]***. You can then enter an extension number using the keyboard. Validate your input by pressing ***Enter***.
- To select the transfer type in the ***{Options}*** tab (see § 13.2.2.7.2) :
  - ***[Blind transfer]***,
  - ***[Monitored transfer]***

In some cases, high-level phone numbers can be used (see § 13.2.2.7.4). However, numbers in the canonical address format must not be entered directly using Insert value. To do so, you must follow these steps:

- put an Assignment node just before the TransferCall node, and set a String variable to the desired number.
- use the String variable in the TransferCall node by selecting Variable.

0 Transfer to agent

To select this transfer type, check ***[Agent]*** in the **{Destination}** tab.

In the Selected agent frame, specify an agent in one of the following ways:

- Right-click the text box and select **[Variable]**. You can then select an existing variable of String type containing the agent identifier at run-time by double-clicking a list item.
- Right-click in the text box and select **[Server object]**. You can then select the identifier of an agent

defined in the system by double-clicking a list item.

0 Transfer to the best Service member available

To select this transfer type, check ***[Service member]*** in the **{Destination}** tab.

0 Transfer to a Remote Service

To select this transfer type, check ***[Remote Service]*** in the **{Destination}** tab.

This type of transfer allows you to transfer in a blind way the call to a Service belonging to a remote Server.

In the Remote Service frame, specify a remote Server name in one of the following ways:

- Right-click the text box and select **[Variable]**. You can then select an existing variable of String type containing the remote Server identifier at run-time by double-clicking a list item.
- Right-click in the text box and select **[Server object]**. You can then select the identifier of an remote Server defined in the system by double-clicking a list item.

In the Global variables selected list box, specify all global variables you want to transfer with the call. These variables will be used to initialize the new script in the remote Service on the remote Server.

- Right-click in the ***{Global variables selected}*** list box and select **[Add variable]**. You can then select an existing global variable of any type by double-clicking a list item.

Conditions :

- The name of Service on the remote Server must be the same as on the local Server.
- All global variables transferred with the call have to be defined on the remote Service.

  If the first condition is not realized, the transfer will fail.

0 Set PCP mode automatically

Check this if the agent has to go to PCP mode (automatically) after the end of the physical call. Automatic switchover to PCP mode only applies to agents using a telephone with only one professional extension: it is ignored if there are two or more professional extensions on the agent's telephone. (Personal extensions are not taken into account here)

0 Exit PCP mode at end of script

Check this if the agent's PCP has to end when script execution ends.

0 Destination

In the ***{Service member}*** frame, specify whether you want the destination agent to be a member of one team or more teams:

- Right-click in the text box and select **[Yes]** or **[No]**.
- Right-click the text box and select **[Variable]**. You can then select a variable of Numeric type, containing the value at run-time, by double-clicking on a list item. "Zero" means **[No]**, and any other numeric value means **[Yes]**.

If you selected **Yes** or a variable, you have to specify the teams of interest.

- Right-click in the ***{Selected teams}*** list box and select **[Add variable]**. You can then select an existing variable of String type containing the team name at run-time by double-clicking a list item.
- Right-click in the Selected teams list box and select **[Add Server object]**. You can then select the name of a team defined in the system by double-clicking a list item.
- Finally, you must specify whether the agent has to belong to ***[At least one of the selected teams]*** or to ***[All selected teams]*** by checking the corresponding option.

0 Abilities

If the targeted Service member has to satisfy some criteria, these can be defined in the corresponding tab.

In the ***{Required language level}*** field specify the minimum language level (value between 0 and 99) required for each agent in each of the languages defined in the Service version.

The required language level may be specified or modified in several different ways:

- Right click in the ***{Required language level}*** field and select the **{Define level}** menu. The **"Level selection"** window opens. Enter the required value and press ***[Enter].*** Only numerical values between 0 and 99 are accepted.
- Right click in the ***{Required language level}*** field and select the **[Variable]** menu. A "numeric" type variable may be selected. This variable will contain the required level at run-time.
- To increase the language level of a unit, right click in the ***{Required language level}*** field and select **[Increase level].**

- To reduce the language level of a unit, right click in the ***{Required language level}*** field and select **[Reduce level].**

In the ***{Required skills level}*** list box, specify the skills and corresponding knowledge levels required of the agent.

To add a skill to the list:

- Right-click in the list box and select **[Add variable]**. You can then select an existing variable of String type containing the skill name at run-time by double-clicking a list item.
- Right-click in the ***{Selected teams}*** list box and select **[Add Server object]**. You can then select the name of a skill defined in the system by double-clicking a list item.

To enter the required skill level

- Right click on the name of a skill in the Required skill levels and select the **[Define level]** menu. The "Level selection" window opens. Enter the required value and press **[Enter].** Only numerical values between 0 and 99 are accepted.
- Right click on the name of a skill in the Required skill levels and select the **[Add variable]** menu. A "numeric" type variable may be selected. it will contain the skill level at script run-time.
- To increase the skill level of a unit, right click on the name of the corresponding skill and select **[Increase level]**
- To reduce the skill level of a unit, right click on the name of the corresponding skill and select **[Reduce level]**

0 Preferences

If more than one agent matches the specified languages level and skills level defined so far, it is possible to define preferences in order to select the 'best' agent among those who match the requirements.

You can enable the preferences definition by right-clicking the Preferential agent based on skill and language text box and then selecting Yes or No.

Three degrees of preferences can be defined. The preferred agent is the one who has the highest value for the first preference. The second preference is used only if more than one agent has the "High" value for the first preference, and so on. Each preference is a list of agent capabilities (languages + skills). If a list contains more than one ability, the corresponding degree is computed as the sum of the item levels for each agent.

You can add a skill or a language in one of the preference lists by right-clicking the list and selecting the desired ability.

On a basis of preference criteria, a list of agents who meet the requirements is created. If this list contains several agents, the agent whose inactivity time is the longest (i.e. the agent who has remained inactive the longest) will be selected to process the call. This inactivity time is reset in the following two cases:

- at the end of a Post Call Processing (PCP) when the agent's activity leaves "PCP" status.
- at the end of the processing of an M5000 CC call, when the agent's extension status becomes "Idle".

0 Other parameters

The **{Options}** and **{Voice messages}** are transfer parameters you can define in the two other tabs.

13.2.2.7.2 "TRANSFERCALL" NODE TRANSFER PARAMETERS

This section describes the transfer parameters defined in the TransferCall node. Some parameters do not apply to every type of transfer (to an extension, to an agent or to a Service member): these are specified below.

The choice of agent for call distribution is independent of the "Use agent script" option defined in the node.

It does not therefore matter which option is chosen, since the agent logs on through his telephone set or agent application (M5000 CC User or User API).

Consequently, if an agent logged on via his telephone set is selected and the option "Use agent script" has been selected, the call will be transferred irrespective of the option mentioned above.

Description of the "Options" tab

This tab is available for each type of transfer.

1 Type of transfer

When M5000 CC is used without IVR, if the transfer destination is a specific extension, then only a “blind transfer” is possible.

If you check ***[Blind Transfer]***, the call is considered as successfully transferred as soon as an agent is free: it does not wait for the agent to answer the phone.

On the other hand, if you check ***[Monitored Transfer]***, the transfer only succeeds if the destination answers the call. With a monitored transfer, the M5000 CC Media Server can retrieve the call if the agent does not answer after the predefined time.

- If the transfer destination is a specific agent, a monitored transfer to an available agent who does not answer causes the TransferCall node to fail. An error value of -1 is then assigned to the Return code variable.
- If the transfer destination is a Service member, a presentation timeout value has to be set (see definition in § 1.4). This is the delay after which the Server tries to transfer the call to another agent if the current one does not answer.
- In the ***{Presentation timeout}*** fields, you may parameter the fields with a minimum timeout if the destination of the transfer is a member of the Service and if the transfer is monitored. The minimum presentation timeout has to be:
  - u equal or greater than zero
  - u equal or lower than the maximum presentation timeout
- The maximum presentation timeout is the duration of the presentation of a call to an agent if the global timeout is not reached during the presentation.
- When the ***Force call*** option is checked and the global timeout occurred during the presentation of the call, the call is not forced and the presentation time is at least equal to the minimum presentation timeout.

You can define the presentation timeout value in one of the following ways:

- Right-click the text box and select **[Variable]**. You can then select a variable of Numeric type containing the timeout value at run-time by double-clicking a list item.
- right-click in the text box and select **Insert value**. You can then enter the number of seconds using the keyboard. Validate your input by pressing **Enter**.

Note: Influence of the voice messages on the presentation timeout and the global timeout: The presentation timeout should take the message to caller into account. Indeed, the presentation timeout starts when the agent is found (not when the transfer is initiated). The presentation timeout should thus be longer than the message to the caller. However, the presentation timeout stops when the agent picks up his phone : the message to agent does not have to be taken into account. On the other hand, the global timeout stops only when the transfer is terminated, i.e. after the message played to the agent is ended. A transfer could thus be cancelled while an agent hears a message.

If the transfer destination is an agent or a Service member, and the transfer is monitored, the option ***Force call*** can be checked. Call forcing will pick up the phone for the agent (when the presentation timeout expires), whether the agent wants to answer or not. Call forcing applies only to agents using a telephone with only one extension: it is ignored if there are two or more extensions on the agent's telephone. (Including both professional and personal extensions.)

Finally, for a transfer to an agent or to a service member, you can select to ***transfer call by pool***. In this case, the waiting calls are visible in the agent portal application. The agent can handle the call by selecting it in its application. If you select this option, you can define a **[push timeout]**. It is a timeout after which the server will try to push the waiting call on available agent (by using monitored transfer). However, the call stays visible in the pool when no agents are available. In order to avoid the server to push call, you must use a push timeout greater or equal to the global timeout.

0 Call priority

This option is only available for transfers to an agent or to a Service member.

The call priority is taken into account when more than one call is waiting to be handled by the M5000 CC Media Server : if an agent becomes idle, the call with the highest priority (among the calls for which the agent matches the requirements) will be transferred first.

You can define the call priority value in one of the following ways:

- Right-click in the text box and select a priority value.
- Right-click the text box and select **[Variable]**. You can then select a variable of Numeric type containing the priority value at run-time by double-clicking a list item.

Priority values range from 0 (lowest) to 99 (highest).

0 Reset waiting time

Select **[Yes]** if you want the total waiting time from the beginning of the call to be set to zero when the transfer node is entered. This can be useful if lengthy tasks have been performed in previous nodes, to avoid the Global timeout (see step 5) being reached too early.

You can set the value of this option in one of the following ways:

- Right-click in the text box and select **[Yes]** or **[No]**.
- Right-click the text box and select **[Variable]**. You can then select a variable of Numeric type, containing the value at run-time, by double-clicking on a list item. A zero value means **Yes**, and any other numeric value means **[No]**.

0 Use agent script

Select **Yes** if you want the user interface to appear on the screen of the destination agent upon call transfer. In this case, a tree must be defined as the starting tree for the User Interface. This value is set to **No** by default.

You can set the value of this option in one of the following ways:

- Right-click in the text box and select **[Yes]** or **[No]**.
- Right-click the text box and select [Variable]. You can then select a variable of Numeric type, containing the value at run-time, by double-clicking on a list item. A zero value means **[No]**, and any other numeric value means **[Yes]**.

0 Recording

Select **[Yes]** if you want to record the agent's telephone conversation.

You can set the value of this option in one of the following ways:

- Right-click in the text box and select **[Yes]** or **[No]**.
- Right-click in the text box and select **[System]**. This choice will use the setting defined in sheet U-434.
- Right-click the text box and select **[Variable]**. You can then select a variable of Numeric type, containing the value at run-time, by double-clicking on a list item. A zero value means **[No]**, a one value means **[Yes]** and any other numeric value means **[System]**.

  Note: *The same constraints described in sheet U-434 are applied*

0 Start user tree in Portal

Select this option to require the script tree(s) of User type to be executed and displayed in the web portal used by the agent. If this option is checked, the User Interface nodes appear in place of a CRM card: the ***{CRM card}*** tab is therefore not shown.

This option is only enabled if ***{Use agent script}*** is set to Yes or to one of the script variables.

0 Global timeout

This value is the number of seconds during which the call can be answered. If nobody has picked up the phone before the timeout is reached, the transfer fails and an error value of -1 is returned in the Return code variable.

You can set the timeout value in one of the following ways:

- Right-click the text box and select **[Variable]**. You can then select a variable of Numeric type containing the timeout value at run-time by double-clicking a list item.
- right-click in the text box and select **Insert value**. You can then enter the number of seconds using the keyboard. Validate your input by pressing ***Enter***.

Refer to the previous note concerning the influence of voice messages on the global timeout.

Description of the "Agent script" tab

This tab is only available for transfers to an agent or to a Service member, and provided that the ***[Start user tree in Portal]*** option is selected.

0 Close Automatically

When this option is enabled, the automatic closing of the agent script occurs at the end of the physical call (hanging up) if the agent is not in post-call processing (PCP). If the agent went to PCP (manually or automatically), automatic closing is effective only when the agent leaves the PCP activity

In the list ***{Close user tree automatically after a delay}***, select if the agent script must be closed automatically after a delay at the end of the call. You can also select a numeric variable. If set to -1, the script must be manually closed by the agent. If set to 0, the closure is immediately after at the end of the call. On the other hand, any other positive value in this variable will delay the closing of x seconds after the end of the call.

Description of the "CRM card" tab

This tab is only available for transfers to an agent or to a Service member, and provided that the ***[Start user tree in Portal]*** option is not selected.

It is used to define the URL of a CRM record which will be displayed when the call is presented to an agent using the M5000 CC Portal.

In the ***{CRM record (URL) address}***, enter the URL to be used to start the CRM record. You can select some variables by pressing **<F2>** and selecting the variable. When the node is executed, each variable will be replaced by its value when the CRM record is presented.

In the ***{Allow CRM record to be opened by agents}*** drop-down list, specify whether the agent can reopen the CRM record after closing it. You can also select a numeric variable. If this variable contains 0, the agent will be unable to reopen the CRM record after closing it. On the other hand, any other value in this variable will allow the record to be reopened.

Note: For a CRM record to be displayed in the portal when a call is presented:

- *The **{Use agent script}** option (in the **{Options} tab)** must be activated.*
- *The **{CRM record (URL) address}** text box must be filled in. This text box contains variables only; the variables should not be empty the character string.*

The validity of the URL entered is not checked upon compilation: what is checked is only that the variables used actually exist.

For more information about the CRM card display function, see Section **8.8 : CRM sheet :**.

Description of the "Voice messages" tab for an "Interactive Voice Server" tree

The **{Voice Messages}** tab allows you to select several voice messages that are played during certain transfer phases. None of these messages are available for transfers to extensions.

- The "waiting message" is heard by the caller at the beginning of the waiting period. If the ***[Play waiting message]*** option is not selected, the caller will hear the default Mitel 5000 Contact Center waiting music (*"telephone exchange hold music"*)

For each voice message you select, you must specify the message that the caller will hear. Click the ***[Play]*** button, then build the message in the same way as in the "PlayVoiceMessage" node (see § 13.2.2.4).

Refer to the previous note concerning the influence of voice messages on the presentation timeout and global timeout.

Description of the "Voice messages" tab for a "Noninteractive Voice Server" tree

The **{Voice Messages tab}** allows you to select several voice messages that are played during the transfer. These messages are composed of PBX sounds only.

To modify the list of waiting messages, click on the ***[Select sounds]*** button, then build the message in the same way as in the "PlayVoiceMessage node" (see § 13.2.2.4).

Description of the "Call Color" tab

Call Color tab allow to set custom color for calls in "Call & Email" application of the portal.

- Activation of the custom colors by ***[Use Custom Call Color]*** check box

- Selection of the type of configuration (colors can be fixed constant or a script variable)

  * ***[Select Constant Colors]*** radio button: Selection of colors by a color palette (for fixed color) can be done by Clicking on corresponding ***[Pick]*** button, custom colors selected by user in the palette willl be saved with the user preferences.

  * ***[Select Variable for Colors]*** radio button: Selection of colors by selecting a variable of "String" type (for color code)

    Color variable can have different form (compatible with css color standard), here some exemples:
    - Color name ("white")
    - rbg(REDvalue, BLUEvalue, GREENValue)
      exemple : red = rbg(255,0,0)blue = rbg(0,255,0) green = rbg(0,0,255)
    - Hexadecimal mode (white=#FFFFFF)

Default values have to be set for each option:

- As default, custom color is not activated

- As default, fixed colors are set for background and foreground.

13.2.2.7.3 FAQ - HOW DO I MANAGE A TRANSFER FAILURE?

From a general point of view, we will always recommend you to not end the IVR part of the script with a TransferCall node. You will have to foresee the transfer failure as any other case. Below you will find advice and tips to help you write powerful scripts.

Solution with IVR

In a solution with IVR, as long as the call is in the IVR part of the script, an IVR resource is blocked. The resource is released only once the transfer is succeeded. The goal of a powerful script is to transfer calls to the most appropriate agent within the best delays. If for any reason, the call was unable to be transferred to an agent, we would recommend that you set a "PlayVoiceMessage node" (see § 13.2.2.4) with a message asking your customer whether he will call back later, or whether he wants to be called back, or giving him the choice of leaving a voice message or ending the call, etc. You are strongly advised never to end the IVR part of a script with a "TransferCall" node.

Solution without IVR

In a solution without IVR, in the IVR part of the script, the end of the script execution doesn't release the call from the call pit (which could be understood as a resource without IVR). The consequence of this behaviour is the risk for the call to loop in the TransferCall node if this one doesn't succeed and to remain in the call pit until the PBX removes it, which will block a call pit.

To avoid this, we would rather recommend you to put a "PlayVoiceMessage node" (see § 13.2.2.4) just after the TransferCall node in order to redirect the call to a dedicated message call pit if the call, for any reason, couldn't be transferred.

13.2.2.7.4 DIALLING PROPERTIES

If CSTA is used for call transfers (TransferCall node, dial list of an outbound Service, etc.), the system is able to handle higher-level dialing properties.

Two phone number formats are understood in this case:

- the **canonical address format** (e.g. +33 (0) 1) 00 00 00 00): the system translates it and dials the corresponding number (including 0 for outbound calls, 00 for international calls, etc.). The numbers are translated according to the settings defined in the Windows Telephony Control Panel (country, area, code, outside line prefix, etc...).
- the **dialable address format**, for which no translation is needed. The numbers are dialed without change.

Canonical address format

A canonical address is an ASCII string with the following structure:

+ CountryCode Space [(AreaCode) Space] SubscriberNumber

The components of this structure are given in the following table.

Tableau 13.19 CANONICAL ADDRESS FORMAT

Component	Explanation
+	Equivalent to ASCII Hex (2B). Indicates that the number that follows it uses the canonical format.
CountryCode	A variably sized string containing one or more of the digits "0" through "9". The CountryCode is delimited by the following space. It identifies the country in which the address is located.
Space	Exactly one ASCII space character (0x20). It is used to delimit the end of the CountryCode part of an address.
AreaCode	A variably sized string containing zero or more of the digits "0" through "9". AreaCode is the area code part of the address and is optional. If the area code is present, it must be preceded by exactly one ASCII left parenthesis character (0x28), and be followed by exactly one ASCII right parenthesis character (0x29) and one ASCII Space character (0x20).
SubscriberNumber	A variably sized string containing one or more of the digits "0" through "9". The subscriber number should not contain the left parenthesis or right parenthesis character (which are used only to delimit the area code). Most commonly, nondigit characters in the subscriber number would include only spaces.

Dialable address format

A dialable address is an ASCII string with the following structure:

DialableNumber

Tableau 13.20 DIALABLE ADDRESS FORMAT

Component	Explanation
DialableNumber	Digits and modificators 0-9

13.2.2.8 DESCRIPTION OF THE "RECORDVOICEMESSAGE" NODE

Description

The  "RecordVoiceMessage" node is used to record a message left by a caller. This message can simply be stored at a specific location in a file, but it can also be send to an e-mail address as an attachment.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "RecordVoiceMessage" node, the "Return code variable" must be "Numeric". After the node is executed, an error code value is returned in this variable.

Tableau 13.21 VALUES OF THE "RECORDVOICEMESSAGE" RETURN CODE VARIABLE (1/2)

value	description
0	No error (No error)
-1	Global time-out reached (Global time-out reached)
-2	Release call detection (Release call detection)
-100	No resource associated to the run (No resource associated with run)
-101	Dialogic channel handle of resource is invalid (Dialogic channel handle of resource is invalid)
-112	tpt structure cannot be cleared cannot clear tpt structure
-172	Cannot open voice file for recording Cannot open voice file for recording (Dialogic error)
-173	Cannot open voice file for recording (dialogic error) (Dialogic error)
-175	Cannot clear DTMF buffer before recording message (Cannot clear DTMF buffer before recording message)
-176	Cannot record message (dialogic error) (Cannot record message (dialogic error))
-200	Cannot close voice message (Cannot close voice message)
-271	Cannot clear DTMF Buffer after recording message (Cannot clear DTMF Buffer after recording message)

Tableau 13.21 VALUES OF THE "RECORDVOICEMESSAGE" RETURN CODE VARIABLE (2/2)

value	description
-300	Cannot convert file to .wav file (Cannot convert file to .wav file)
-301	Cannot rename file in .wav file (Cannot rename file in .wav file)
-302	Cannot send e-mail: session is not active (Cannot send e-mail: session is not active)
-303	Cannot send e-mail (Cannot send e-mail)
-304	Cannot remove e-mail file (Cannot remove e-mail file)
-305	Cannot rename file because it already exists (Cannot rename file because it already exists)
-306	Cannot move e-mail file (Cannot move e-mail file)

Specific part

1 **{Destination}** tab:

This tab indicates what to do with the recorded message: store it in a file or send it in an e-mail.

- ***[Send message in an e-mail]*** box: check this if you want the voice message to be sent to an e-mail address as an e-mail attachment.

  The destination address can be specified in one of the following ways:

  - Type the complete e-mail addresses in the dropdown list.
  - Click the ***To...*** button. Select the same e-mail profile (see SectionU-341) (if you have not yet done so) as the one defined in the “Properties” table of the Call Server configuration database. If that mail profile is the same as the one defined locally on your computer (see the Microsoft Windows messaging profiles (Mail and Fax) option in your Control Panel), the ***[Browse...]*** option will be usable. If not, the e-mail system will work but without the ***[Browse...]*** option. You can then select a recipient from the address book.
  - Enter the first letters or the alias name of the mail recipient, then click the ***[Check Names]*** button to complete the addresses. If the name is ambiguous or unknown, a message will be displayed.

  The last two ways can be used only if a Messaging System (i.e: Microsoft Exchange (Windows95), Windows Messaging (Microsoft NT 4.0) is installed on the machine. You can check it in the Windows Setup (see the “Add/Remove programs” option in your Control Panel.

  You can specify a file name where the sound file can be stored in case the mail cannot be delivered correctly. Enter the full path of the file in the ***{If the e-mail cannot be sent, save the path of the recorded voice file in}*** combo box, or select a string variable containing the path at run-time from the drop-down list.

  It is possible to use a link instead of the file in the e-mail, if the option ***[Include voice mail as link]*** is ticked.

- ***[Store message in a file]*** box: select this if you want the voice message to be saved in a file for later use.

  The path of the file can be specified in one of the following ways:

  - Enter the complete path in the ***{Voice file}*** text box.
  - Click the ***[Browse...]*** button, and then select a file using the dialog box.
  - Select an existing variable of String type containing the path at run-time from the drop-down list.

Comments:

- If a single file is given, it will contain at most one message: the last message recorded will always replace the former voice message. It is your responsibility to provide different path names at run-time for each execution of this node (you could call for example an external "getNewPathName( )" function using

a "FunctionCall" node (see § 13.2.4.10), which would put in a variable of "String" type a new path each time it is called).

- If the specified directory does not exist, it will be created. Otherwise, if the directory is not specified in the node, a default one is created: the 'Message' directory will be created in the "Sounds" directory of the Service.

0 **{Options}** tab

This tab defines the recording conditions.

- ***[Interrupt by DTMF]*** box: select this option to stop the recording immediately if the caller starts entering digits with the phone pad.
- ***[Interrupt by silence length]*** box: select this option to stop the recording if the caller has not spoken for a few seconds. The number of seconds can be entered in the corresponding combo box, or an existing variable of Numeric type containing this number at run-time can be selected from the drop-down list.
- ***[Interrupt by message size]*** box: select this option to stop the recording when the caller has spoken long enough, even if he has not finished his message. The maximum length of the message can be entered in the corresponding combo box, or an existing variable of Numeric type containing this number at run-time can be selected from the drop-down list.
- ***[Beep at beginning]*** box: select this option to play a little beep just before the message recording starts.
- ***[Clear DTMF buffer before]*** box: select this option if you want all information, entered previously by the caller's phone pad, to be erased at the beginning of the node execution (before the message recording).
- ***[Clear DTMF buffer after]*** box: select this option if you want all information, entered by the caller's phone pad, to be erased at the end of the node execution (after the message recording).
- **{Sound file format}** area:
  - u ***[VOX]*** radio button: check this option to record voice messages in .VOX format.
  - u ***[WAV]*** radio button: check this option to record the voice messages in .wav format (compatible with MS Windows Media Player).

Note: *The choice of format for the sound files is only available when the voice message is stored in a file. When the voice message is sent in an e-mail, the voice message is always in .wav format.*

Note: *The file is automatically renamed with the extension of the chosen format.*

13.2.2.9 DESCRIPTION OF THE "DELETEVOICEMESSAGE" NODE

Description

The DeleteVoiceMessage node  erases a sound file.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "DeleteVoiceNode" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable.

Specific part

Choose the voice file you want to delete

The path of the file to delete can be specified in one of the following ways:

- Enter the complete path in the text box.
- Click the ***[Browse...]*** button, and select a file in the dialog box.
- Select an existing String type variable (containing the path at run-time) from the drop-down list.

13.2.2.10 DESCRIPTION OF THE "CHANGERTYPERESSOURCE" NODE

Description

The  "ChangerTypeRessource" node is used to change from a non-interactive tree to an interactive tree and vice versa. Unlike the "GoSub" node, the "ChangerTypeRessource" node takes into account the reservation and/or release of dialogic resources when changing from one voice tree type to the other.

Impact on the execution of the tree

1 **Changing from a non-interactive tree to an IVR tree.**

If the change of resource is successful, the "ChangerTypeRessource" node execution is blocked until:

- the physical call is terminated,
- the reservation time limit for an IVR resource has been reached
- a "RetourARessource" node (see § 13.2.2.11) is successfully run on an IVR tree,
- the IVR tree executes an "End" node or a "Return" node.

When the node is successfully executed, the non-interactive tree execution continues normally.

2 **Changing from an interactive tree to a tree without IVR**

If the change of resource is successful, the "ChangerTypeRessource" node execution is blocked until:

- the physical call is terminated or
- a "RetourARessource" node (see § 13.2.2.11) is successfully run on the tree without IVR or
- the tree without IVR executes an "End" node or a "Return" node.

When the node is successfully executed, the interactive tree execution continues normally.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

The content of the "ChangerTypeRessource" node varies according to its use. In fact, some information in the specific part differ, depending on whether the node is used on an "interactive voice tree" or on a "non-interactive voice tree".

Generic part

In the generic part of the "ChangerTypeRessource" node, the return code variable must be "Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.22 VALUES OF THE "CHANGERTYPERESSOURCE" NODE'S RETURN CODE VARIABLE

value	description
0	The change of resource was carried out successfully.
-1	the reservation time limit for a resource has been reached
-2	Release call detection
-3	No call pit defined or supervised in the configuration of this media server
-12	Error during change of resource
-122	Invalid value for reserved resource
-190	The message call pit group selected in the node is empty.
-191	The selected music-on-hold is not valid.
-192	The execution of music-on-hold failed.

Specific part

1 **Editing the node in a non-interactive tree**

Firstly, a destination tree must be specified. In the ***{Destination tree:}*** drop-down list indicating the different possible destination trees, only the interactive voice trees are considered.

The optional ***{Resource reservation time limit:}*** drop-down list indicates the maximum time in seconds during which the system will try to find and reserve a free IVR resource in order to transfer a call to this resource. In fact, if all the resources are occupied, the call will be put on hold until the resource becomes free.

If the specified reservation time limit is reached, the node will return to the value –1 as return code (see return code variables on Tableau 13.22) and the execution of the voice tree without IVR will continue.

The user can select the announcements to be played to the caller while waiting for a resource to be reserved, by clicking on the ***[Announcements]***button.

In the **"Destination tree arguments"** frame, all the arguments defined in the destination tree (interactive tree) must be specified. The list of arguments is updated as soon as the user selects a destination tree from the ***{Destination tree:}*** drop-down list.

Two value types are possible for each argument: a constant value or a variable value. When the user right-clicks on the argument name, a pop-up menu appears, with two possibilities:

- The option **[Enter a constant]** is used to specify the exact value of the corresponding argument.
- The option **[Enter a variable]** gives access to a list of variables that is the same as that of the argument concerned: the user must select one of these variables.

2 Editing the node in an interactive tree

Firstly, a destination tree must be specified. In the ***{Destination tree:} drop-down list.*** indicating the different possible destination trees, only the non-interactive voice trees are considered.

The optional ***{Message call pit group:}*** drop-down list is used to specify the message call pits to which the call will be routed.

In the **"Destination tree arguments"** frame, all the arguments defined in the destination tree (non-interactive tree) must be specified. The list of arguments is updated as soon as the user selects a destination tree from the ***{Destination tree:}*** drop-down list.

Two value types are possible for each argument: a constant value or a variable value. When the user right-clicks on the argument name, a pop-up menu appears, with two possibilities:

- The option **[Enter a constant]** is used to specify the exact value of the corresponding argument.
- The option **[Enter a variable]** gives access to a list of variables that is the same as that of the argument concerned: the user must select one of these variables.

13.2.2.11 DESCRIPTION OF THE "RETOURARESSOURCE" NODE

Description

The  "RetourARessource" node is used to return to the execution of a tree which previously executed a "ChangerTypeRessource" node successfully. Therefore, the call will be re-processed by the same type of resource as the resource used on the initial voice tree (a "Dialogic" resource or a "call pit").

Let us consider a "RetourARessource" placed on a tree "without IVR". This node only makes sense when a "ChangerTypeRessource" node (see § 13.2.2.10) has been executed on an "interactive" tree to the tree "without IVR" in question. Moreover, if a "RetourARessource" is specified in an "interactive" tree, a "ChangerTypeRessource" node must exist on a tree "without IVR" to the interactive tree in question.

In reality, it is also all about a change of resource, like for the "ChangerTypeRessource" node, with some differences:

- The destination tree must not be specified in the "RetourARessource" node: in fact, this is the tree on which the "ChangerTypeRessource" node was previously executed.
- The destination tree will not be executed from the beginning: the first node executed will be the one after the "ChangerTypeRessource" node.

Impact on the execution of the tree

1 Changing from a non-interactive tree to an IVR tree.

The execution of the "RetourARessource" node ends when one of the following actions takes place:

- the call is successfully transferred to an IVR resource
- the physical call is terminated (caller on-hooks),
- the reservation time limit for an IVR resource has been reached.

When the change of resource is successfully executed, the non-interactive tree execution is stopped. The execution of the interactive voice tree will be continued: the first node executed will be the one after the "ChangerTypeRessource" node.

2 Changing from an interactive tree to a tree without IVR

The execution of the "RetourARessource" node ends when one of the following actions takes place:

- the call is successfully transferred to a message call pit,
- the physical call is terminated (caller on-hooks).

When the change of resource is successfully executed, the interactive tree execution is stopped. The execution of the voice tree without IVR will be continued: the first node executed will be the one after the "ChangerTypeRessource" node.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

The content of the "RetourARessource" node varies according to its use. In fact, some information in the specific part differ, depending on whether the node is used on an "interactive voice tree" or on a "non-interactive voice tree".

Generic part

In the generic part of the "RetourARessource" node, the return code variable must be "Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.23 VALUES OF THE "CHANGERTYPERESSOURCE" NODE'S RETURN CODE VARIABLE

value	description
0	The change of resource was carried out successfully.
-1	the reservation time limit for a resource has been reached
-2	Release call detection
-12	Error during change of resource
-122	Invalid value for reserved resource
-190	The message call pit group selected in the node is empty.
-191	The selected music-on-hold is not valid.
-192	The execution of music-on-hold failed.
-193	No "ChangerTypeRessource" node towards the tree that contains the "RetourARessource" node was previously executed.
-194	The "RetourARessource" node is on the destination tree specified by the previously executed "ChangerTypeRessource" node.

Specific part

1 Editing the node in a non-interactive tree

The optional ***{Resource reservation time limit:}*** drop-down list indicates the maximum time in seconds during which the system will try to find and reserve a free IVR resource in order to transfer a call to this resource. In fact, if all the resources are occupied, the call will be put on hold until the resource becomes free.

If the specified reservation time limit is reached, the node will return to the value –1 as return code (see return code variables on Tableau 13.23) and the execution of the voice tree without IVR will continue.

The user can specify the announcements to be played to the caller while waiting for a resource to be reserved, by clicking on the ***[Announcements]***button.

2 Editing the node in an interactive tree

In this case, only a group of message call pits must be specified in the ***{Message call pit group:}*** dropdown list. It indicates a message call pit to which the call will be routed to continue the execution of the tree without IVR.

13.2.2.12 DESCRIPTION OF THE "CONFERENCE" NODE

Description

The  "Conference" node enables the caller to connect to a conference to which he or she has been invited (or which he or she has organised). This node is only available for the defined conference service.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part of the "Conference" node, the return code variable must be "Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.24 VALUES OF THE "CONFERENCE" NODE RETURN CODE VARIABLE

value	description
0	Connection to conference successful
-1	No conference associated with this call
-2	Release call detection
-3	Cannot add participant to conference (check problem of licences)
-4	No Conference IP resource available
-256	Unexpected error while executing a message before the conference

Specific part

The specific part of the "Conference" node comprises a series of voice messages which may be played either to the caller or to the conference participants already in communication.

For each voice message selected, you have to specify the message that the caller or other connected participants will hear. For this, click the ***[Play]*** button, then prepare the message in the same way as in the "PlayVoiceMessage" node.

The ***{Start messages}*** tab is used to specify several voice messages that will be played before the caller joins the conference.

- Specifying a message played to the caller when he or she is the first member to connect to the conference in question (first conference participant)
- Specifying a message played to the caller when other conference participants are already in communication
- Specifying a message to the played to other conference participants already in communication before the caller joined the conference (available only if the caller is not the first conference participant).

The ***{End messages}*** tab is used to specify a voice message to be played to other conference participants when the caller leaves the conference (only if the caller is not the last participant still connected).

The ***{Warning messages}*** tab is used to specify several voice messages that will be played before the caller joins the conference.

- Specifying a message to be played to all participants 5 minutes before the end of the conference (the conference end time indicated during reservation will be reached in 5 minutes).
- Specifying a message played to all participants when the conference end time is reached, indicating that the conference will be ended.

13.2.2.13 CONFERENCE " NODE DESCRIPTION

Description

The "Conference" node  allows creating conferences from IVR script.

This node has two main options in specific part "Create conference" and "Join conference".

In the two cases, the IVR resource associated to the script is put in the conference (each conference is identified by a unique key). This resource will be freed only if the conference is dissociated from the script, or if the script is terminated.

A conference ends when there are no more resources in the conference.

Note: The "conference" node is only supported in HMP configuration (an analog Dialogic card is not supported)

Note: Putting an IVR call in a conference don't change the logical state of this call (see 12.1.2) , the call keep his initial logical state.

Note: All IVR resources of the same conference must be defined on the same Media Server; the IVR resource is defined as IP resource (and not IP Conference resource).

Note: The conference node execution requires some limitation in Media Server configuration. See page 87 for more information

Edit the node

- Edit or add the node to display the dialog box (see Sheet U-441).

Generic Part

- In the generic part (see § General description of the "generic" part of a node editing window) of the "Conference" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Valeurs de la variable code de retour du Nœud "Conférence(Tableau Arial 11pt)

- cette variable. Les valeurs possibles sont :"

valeur	description
0	Node execution succeeded
-1	Time Out
-2	Release call detection
-3	Not enough licenses
-4	No IP resource available on Media Server.
-161	A conference already exist on the current IP resource
-162	Conference Key already used
-163	Conference Key not found
-164	No available resource for recording
-165	Node execution failed

Specific Part

The specific part of Conference node has two tabs: ***{General}*** for general conference options and ***{Recording}*** for recording options (if conference must be recorded).

{General} tab:

Has two main options, ***[Create Conference]*** and ***[Join conference]***.

In the two cases, a variable containing the Conference identifier (Conference ID) must be selected (or a value must be introduced) in the ***[Conference ID]*** box.

- ***[Create Conference]*** option: create a new conference in M5000 CC and the IVR resource of the script is

put in conference. A script variable must be selected, or a constant must be introduced, in the ***[Conference ID]*** box to be used as Conference identifier.

- ***[ID generated by the system]*** : only available for creating conference. By checking this case, the conference ID will be automatically generated by the system (no more problem with error "162"), it is still mandatory to provide a variable (in the ***[Conference ID]*** box) where the conference ID will be saved (introducing constant value is no more possible)
- ***[Join conference]*** option: join an existing conference, the IVR resource of the script is put in an existing conference. A script variable must be selected, or a constant must be introduced, in the ***[Conference ID]*** box to indicate the Identifier of the existing conference.

{Recording} tab:

If the ***[Record conference]*** case is checked, an IVR resource is then reserved and is put in conference (available HMP conference licenses needed). This recording resource will be automatically freed at the end of the conference.

When the recording is finished, it will be presented as a vocal message sent as e-mail attachment. The e-mail options are:

- ***[Record conference]*** case: only available when option ***[Create Conference]*** is chosen. Active the conference recording (and enable recording options).
- ***{E-mail address}*** field: select a script variable (string type) as destination address (or directly introduce the address as string constant). This field is mandatory if the recording is activated.
- ***{E-mail subject}*** field: select a script variable (string type) as subject (or directly introduce the subject as string constant).
- ***[Include voice message as link]*** case: If selected, a link to the voice message file is include in the e-mail body. If not, the voice message is attached to the e-mail.

13.2.2.14 "IVRMAKECALL " NODE DESCRIPTION

Description

The "IVRMakeCall" node  allows creating a new call from IVR resource associated to the script execution. The new call can be "Blind" or "Monitored" (see "Specific part" below).

Note: This node is only available for IVR HMP (not available for analog Dialogic card).

Note: The "IVRMakeCall" node cannot be used in a "Starting Tree", because the IVR resource associated to the execution script is already assign to handle the incoming call.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic Part

In the generic part (see § General description of the "generic" part of a node editing window) of the "IVRMakeCall" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.25 RETURN VALUE OF THE "IVRMAKECALLE" NODE

valeur	description
0	Node execution succeeded
-1	Time Out
-2	Release call detection
-3	No IVR resource available
-4	Destination phone number not valid
-5	Destination phone not reachable
-6	Destination phone busy
-7	Node execution failed
-8	PBX clear call connection

valeur	description
-9	Wrong time out value

Specific Part

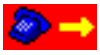
The specific part of "IVRMakeCall" node allows setting options as Destination n°, Call type, SUU.

- ***{Destination}*** field: select a script variable (string type) as destination number (or introduce a string constant as destination n°). This field cannot be empty.
- Call type :
  - ***[Blind call]*** option : node execution succeeds (return "0") if the call on the IVR resource is in state "ringing"
  - ***[Monitored call]*** option : a timeout period is set. Node execution succeededs if the call on the IVR resource is hooked off, by the destination, before the timeout elapses.
- ***{User user info}*** field: a script variable (string type) is selected (or string constant is introduced) to be displayed on the destination device for internal calls. The maximum length of this variable (or constant) is 40 characters, and will be truncated if the length exceeds this size.

Note: If "IVRMakeCall" node fails, the M5000 CC drops the possibly created call. (Example, if destination is busy, we have a special return code value and M5000 CC ensures IVR resource is idle when Make Call node finishes. It allows executing a new Make Call node).

13.2.3 "MAKEOUTBOUNDCALL" NODE MODULE

13.2.3.1 DESCRIPTION OF THE "MAKEOUTBOUNDCALL" NODE MODULE

The "MakeOutboundCall" module node  is used in the User Interface Tree (outbound services only).

This module only has one node:  "MakeOutboundCall" (see § 13.2.3.2)

13.2.3.2 DESCRIPTION OF THE "MAKEOUTBOUNDCALL" NODE

Description

The MakeOutboundCall node  establishes the communication between the agent and the customer. Its execution is started when the agent presses a button on his CSTA interface.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "MakeOutboundCall" node, the "Return code variable" must be "Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.26 VALUES OF THE "MAKEOUTBOUNDCALL" RETURN CODE VARIABLE

Value	Description
0	No error. This value is **always returned** when the MakeCall node is executed in the web Portal. To obtain reliable information on the result of this node, the "CallResult" intrinsic variable must be used instead of the return code variable.
-1	Timeout reached
-2	Network error
-4	Canceled (after rescheduling or deletion from dial list)
-5	Connection done (on attempt to make a call already in process)

Specific part

This node has no specific properties.

Values of the Call result global variable

The "MakeOutboundCall" node does not only assign a value to its Return call variable, but also to the "Call result" global variable (see § 13.3.2.5). This assignment is performed by the Server, which makes a blind transfer to the agent: it cannot distinguish situations like

- The customer does not answer the phone (No answer error)
- The person who answered was not the right person (Connect NOK error)
- The right person does not have this phone number (Bad number error)

These error cases are detected by the agent. An outbound script should allow the agent to assign these values to the Call result variable. For example, see the Supermarket sample script (see § 13.5.3).

13.2.4 "SYSTEM" NODES MODULE

13.2.4.1 DESCRIPTION OF THE "SYSTEM" NODE MODULE

The nodes in the "System" module  are used both in the M5000 CC Media Server and User Interface trees. Some of them modify the default execution order of the tree while the other ones affect general aspects of the system.

List of "System" module  **nodes:**

-  Root (see § 13.2.4.2)
-  GoTo (see § 13.2.4.3)
-  GoSub (see § 13.2.4.4)
-  End (see § 13.2.4.5)
-  Return (see § 13.2.4.6)
-  Assignment (see § 13.2.4.7)
-  Label (see § 13.2.4.8)
-  AutoLanguage (see § 13.2.4.9)
-  FunctionCall (see § 13.2.4.10)
-  Association (see § 13.2.4.11)
-  Synchronization (see § 13.2.4.13)

13.2.4.2 DESCRIPTION OF THE "ROOT" NODE

Description

Each tree starts execution with a Root node  , and does not contain any other Root. This node does not perform any action.

Only its name can be changed: all other characteristics are immutable. It cannot be removed from the tree either.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "Root" node, there is no Access condition and no Return code variable. This node does not return a value upon execution.

Specific part

This node has no specific properties.

13.2.4.3 DESCRIPTION OF THE "GOTO" NODE

Description

The 

"GoTo" node redirects execution flow to any node of the current tree. The next node to be executed after this node is the destination of the "GoTo" node.

The destination node is executed whatever the value of its access condition.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "GoTo" node, there is no "Return code variable". This node does not return a value upon execution.

Specific part

This part is used to select the destination node. Click on a plus sign to expand a node (i.e. to make its children visible).

Select the destination node by clicking it in the tree. Two labels at the bottom of the window display the name and the identifier of the selected node.

Call restriction (Call barring): A GoTo node cannot be the destination of a GoTo node.

Caution: *Make sure that you do not introduce cycles in the tree using GoTo nodes. A cyclic graph can lead to infinite executions at run-time.*

13.2.4.4 DESCRIPTION OF THE "GOSUB" NODE

Description

The GoSub node 

redirects execution flow to the Root node of another tree of the same type (Call Server (IVR) or User Interface tree).

This node passes arguments to the called tree (see § 8.5.6.3.1).

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "GoSub" node, there is no Return code variable. This node does not return a value upon execution.

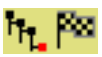
Specific part

From the [**Choose the destination tree]** drop-down list, select the name of the destination tree.

For each argument of the selected tree, you have to enter a value of the appropriate type in the corresponding combo box. You can also select an existing variable containing this value at run-time from the drop-down list.

13.2.4.5 DESCRIPTION OF THE "END" NODE

Description

The "End" node 
immediately terminates current script execution (even if it doesn't belong to the starting tree).

Don't confuse this node with the "Label node (see § 13.2.4.8) named "End" in an IVR tree. This node does not terminate tree execution: its descendants will be executed normally.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "End" node, there is no Return code variable. This node does not return a value upon execution.

Specific part

This node has no specific properties.

13.2.4.6 DESCRIPTION OF THE "RETURN" NODE

Description

The Return node 

terminates the execution of the current tree.

If the tree is not the starting tree (i.e. was called by another tree using a "GoSub" node) (see § 13.2.4.4), the execution resumes at the node following the corresponding "GoSub" node in the calling tree.

The last node of a tree is always a Return node. This last node cannot be edited (i.e. neither its name nor its access condition can be changed). Only Return nodes that are not the last node of a tree can be edited.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "Return" node, there is no Return code variable. This node does not return a value upon execution.

Specific part

This node has no specific properties.

13.2.4.7 DESCRIPTION OF THE "ASSIGNMENT" NODE

Description

The Assignment node 

sets the value of a variable.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "Assignment" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.27 VALUES OF THE "ASSIGNMENT" RETURN CODE VARIABLE

Value	Description
0	No error (No error)
Concatenation	
94	A non initialized variable is used in the right part of the assignment (A non initialized variable is used in the right part of the assignment)
Check if item is in a set	
1	The item is already in the set (The item is already in the set)
Add item(s) to the set	
13	Type mismatch: type of the item to add is not valid (Type mismatch: type is not valid
94	A non initialized variable is used in the item to add to a set (A non initialized variable is used in the item to add to a set)
457	Item to add is already in the set item to add already in set
Import from / Export to associated call	
-1	No call associated (No call associated)
-2	"Set" variable can not be imported or exported ("Set" variable can not be imported or exported)
-3	Variable does not exist in the script of the call associated Variable does not exist in the script of the associated call
-4	The caller is not an agent (The caller is not an agent)
13	Bad variable type : the variable that has to be set has not the good type to receive the value assigned (Bad variable type : the variable that has to be set has not the good type to receive the value assigned)
Import from remote Server	
-10	The remote Server is not connected or CSTA connection lost on remote Server or no Call Server connected to remote Server (The remote Server is not connected or CSTA connection lost on remote Server or no Call Server connected to remote Server)
-11	The remote Service version is not in Production mode
-13	The status that corresponds to a personalized counter is no longer available.
Finding a Server	
-20	No remote Service has been found (no Service is in Production, all the Services are closed or there is no remote DNIS defined
String extraction	
-30	Wrong use of the Null value (when the variable containing the position of the start digit contains no valid data)

Specific part

Various assignment types can be performed using this node. Each type is chosen by selecting the corresponding option button.

1 ***[Simple assignment]*** checkbox and associated fields:

This option is used to assign a simple value (optionally resulting from an arithmetic operation) to a variable.

- Select the variable to which the value will be assigned from the leftmost drop-down list.
- In the combo box to the right of the equal sign, enter a value of the same type as the variable to the left, or select an existing variable of this type from the drop-down list.
- If the variable to the left has the Numeric type, you can select an arithmetic operator and add a second operand in the remaining combo boxes.

Examples of correct expressions:

- T_var_num = 13
- T_var_string = Hello!
- T_var_num_1 = 13 + T_var_num_2

0 ***[Conversion]*** checkbox and associated fields:

This option is used to convert a string to a numeric, a numeric to a string or a date to a string.

- Select the type of conversion you want: ***[Numeric to string***], ***[String to numeric]***.or ***[Date to string]***.
- In the first drop-down list, select the variable that will receive the value of the variable selected in the second drop-down list.
- When selecting ***[Date to string]***, you may set a mask

Tableau 13.28 THE FOLLOWING TABLE SHOWS CHARACTERS YOU CAN USE TO CREATE USER-DEFINED DATE/TIME FORMATS

Character	Description
(:)	Time separator. In some locales, other characters may be used to represent the time separator. The time separator separates hours, minutes, and seconds when time values are formatted. The actual character used as the time separator in formatted output is determined by your application's current culture value.
(/)	Date separator. In some locales, other characters may be used to represent the date separator. The date separator separates the day, month, and year when date values are formatted. The actual character used as the date separator in formatted output is determined by your application's current culture.
(%)	Used to indicate that the following character should be read as a single-letter format without regard to any trailing letters. Also used to indicate that a single-letter format is read as a user-defined format. See below for further details.
d	Displays the day as a number without a leading zero (for example, 1). Use **%d** if this is the only character in your user-defined numeric format.
dd	Displays the day as a number with a leading zero (for example, 01).
ddd	Displays the day as an abbreviation (for example, Sun).
dddd	Displays the day as a full name (for example, Sunday).
M	Displays the month as a number without a leading zero (for example, January is represented as 1). Use **%M** if this is the only character in your user-defined numeric format.
MM	Displays the month as a number with a leading zero (for example, 01/12/01).
MMM	Displays the month as an abbreviation (for example, Jan).
MMMM	Displays the month as a full month name (for example, January).
gg	Displays the period/era string (for example, A.D.)
h	Displays the hour as a number without leading zeros using the 12-hour clock (for example, 1:15:15 PM). Use **%h** if this is the only character in your user-defined numeric format.

hh	Displays the hour as a number with leading zeros using the 12-hour clock (for example, 01:15:15 PM).
H	Displays the hour as a number without leading zeros using the 24-hour clock (for example, 1:15:15). Use **%H** if this is the only character in your user-defined numeric format.
HH	Displays the hour as a number with leading zeros using the 24-hour clock (for example, 01:15:15).
m	Displays the minute as a number without leading zeros (for example, 12:1:15). Use **%m** if this is the only character in your user-defined numeric format.
mm	Displays the minute as a number with leading zeros (for example, 12:01:15).
s	Displays the second as a number without leading zeros (for example, 12:15:5). Use **%s** if this is the only character in your user-defined numeric format.
ss	Displays the second as a number with leading zeros (for example, 12:15:05).
f	Displays fractions of seconds. For example **ff** will display hundredths of seconds, whereas **ffff** will display ten-thousandths of seconds. You may use up to seven **f** symbols in your user-defined format. Use **%f** if this is the only character in your user-defined numeric format.
t	Uses the 12-hour clock and displays an uppercase A for any hour before noon; displays an uppercase P for any hour between noon and 11:59 P.M. Use **%t** if this is the only character in your user-defined numeric format.
tt	For locales that use a 12-hour clock, displays an uppercase AM with any hour before noon; displays an uppercase PM with any hour between noon and 11:59 P.M. For locales that use a 24-hour clock, displays nothing.
y	Displays the year number (0-9) without leading zeros. Use **%y** if this is the only character in your user-defined numeric format.
yy	Displays the year in two-digit numeric format with a leading zero, if applicable.
yyy	Displays the year in four-digit numeric format.
yyyy	Displays the year in four-digit numeric format.
z	Displays the timezone offset without a leading zero (for example, -8). Use **%z** if this is the only character in your user-defined numeric format.
zz	Displays the timezone offset with a leading zero (for example, -08)
zzz	Displays the full timezone offset (for example, -08:00)

Tableau 13.29 THE FOLLOWING ARE EXAMPLES OF USER-DEFINED DATE AND TIME FORMATS FOR DECEMBER 7, 1958, 8:50 PM, 35 SECONDS:

Format	Display
M/d/yy	12/7/58
d-MMM	7-Dec
d-MMMM-yy	7-December-58
d MMMM	7 December
MMMM yy	December 58
hh:mm tt	08:50 PM
h:mm:ss t	8:50:35 P
H:mm	20:50
H:mm:ss	20:50:35

M/d/yyyy H:mm	12/7/1958 20:50

0 ***[Verify membership]*** checkbox and associated fields:

The ***[Verify membership]*** option is sub-divided into two sub-options:

- ***[Check in set]*** : The first one is used to test if a value belongs to a set, and put the result of this test in a variable. The second one allows checking if a string is a part of another string.
- ***[Check in string]***: The second one allows checking if a string is a part of another string.

It's also possible to use the ***[Case sensitive]*** option. The use of this new functionality is not different from the other use of this node : a variable can be chosen in the combo box for the ***{Item sought}*** or a constant can be written by the user. The same for the ***{Item being searched}*** combo box.

- Select the Numeric variable to which the result of the test will be assigned from the leftmost drop-down list. After the node execution, this variable will contain the value 0 if the value was not found in the set, or the value 1 if the value was found.
- In the text box to the right of the equal sign, enter a value or select a variable of Numeric, Date or String type.
- In the last text box, select a variable of Set type in which the value will be searched.

Node options:

- [Check in set] checkbox: It permits to check if a { Numeric or a string or a date or a constant } is present in a Set.
- [Check in string] checkbox: It permits to check if a { string or a constant } is present in a { string or a constant }.
- ***[Case sensitive]*** checkbox: Only valid for the ***[Check in String*** option. It allows differentiating capital letters from small letters in a string.

0 ***[Add elements to set]***checkbox and associated fields:

This option is used to add one or more elements to a set.

- From the leftmost drop-down list, select the variable of Set type to which elements will be added .
- Select one or more items to add by clicking ***[Add]***. You can then enter a value using your keyboard or select a variable from the drop-down list. click ***[OK].***

If you want to erase all elements of the set before adding the items of the Item(s) to add list, check Clear set before.

0 ***[String concatenation]***checkbox and associated fields:

This option is used to assign the concatenation of multiple character strings to a String variable.

- Select the String variable to which the concatenation result will be assigned from the leftmost drop-down list.
- In the right-hand text box, enter the string to be assigned to the variable. Variables can be inserted: at run-time, they will be textually replaced by their value.

To include a variable:

- Press ***[F2].***
- Select an existing variable from the appearing list. This variable can be of any type.
- click ***[OK]***.

0 ***[String extraction]*** checkbox and associated fields:

This option is used to extract a sub-string of characters from an existing string.

- In the left hand list, select the String type variable in which the sub-string will be assigned.
- In the list to the right of the equals sign, select the variable containing the text from which the sub-string will be extracted.
- In the scroll down list below, select the position of the character (in the text) from which the part to be extracted will start. You may select a variable, or enter a numerical value manually; this value must be positive. If this start value is larger than the number of characters in the text, the node will send an empty string ("").
- In the lower scroll down list, select the number of characters to be extracted. You may select a variable, or enter a numerical value manually; this value must be positive. If this value is not specified or if there

are fewer characters than in the text (including the start character) all the characters from the start position to the end of the text will be extracted.

0 ***[Export to associated call]*** checkbox and associated fields:

This option is used to change the value of a global variable of an associated cal (see § 8.3.1.10).

In the first drop-down list, select the variable you want to export in the associated-call global variable set in the text box on the left.

0 ***[Import from associated call]*** checkbox and associated fields:

This option is used to enter the value of a global variable of an associated cal (see § 8.3.1.10).

In the first drop-down list, select the variable in which you want to get the current value of the associated-call global variable set in the text box on the left.

0 ***[Import from remote Server]*** checkbox and associated fields:

This option is used to assign an inbound status value from a remote Server to a variable.

- Select the variable to which the value will be assigned from the leftmost drop-down list.
- In the combo box to the right of the equals sign, select a status from the drop-down list.
- In the lowermost combo box, select a Server name or a variable from the drop-down list, or type a Server name in the text box.
- In the bottom text box, select a filter or variable name from the scroll down list, or enter a filter ID in the text box. No filter is used if the text box is empty.

Note: The global variables and filters must be defined on both sites.

0 ***[Retrieve Server]*** checkbox and associated fields:

This option is used to assign a Server name to a variable according to the best value of an inbound status. If a Server meets the criterion indicated but the corresponding Service is currently closed, this Server will not be selected.

- Select the variable to which the Server name will be assigned from the leftmost drop-down list.
- In the status combo box, select a status from the drop-down list.
- In the lowermost combo box, select the comparison operator from the drop-down list.

Node options:

- ***[Include local Server]*** checkbox: Select this option to include the local Server status in the comparison.

13.2.4.8 DESCRIPTION OF THE "LABEL" NODE

Description

The "Label" node 

does not perform any action. Its main purpose is to make trees more readable (acting like a comment). It can also serve to put an (extra) access condition at the beginning of a tree branch.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "Label" node, there is no Return code variable. This node does not return a value upon execution.

Specific part

This node has no specific properties.

13.2.4.9 DESCRIPTION OF THE "AUTOLANGUAGE" NODE

Description

The AutoLanguage node  selects a set of languages to be used in subsequent nodes of the tree.

At the beginning of call processing, all languages defined for the script are in the set of current languages. That means, for example, that a "PlayVoiceMessage" node (see § 13.2.2.4) plays the sounds in each language.

After the node execution, the set of current languages is either reduced to one (if a valid choice was made) or left intact.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "AutoLanguage" node, the "Return code variable" must be Numeric". After the node is executed, this variable will contain all the current languages from the selection or, in case of error, a group containing only one numeric element, which is the error code.

Tableau 13.30 VALUES OF THE "AUTOLANGUAGE" RETURN CODE VARIABLE

Value	Description
Return code in User Interface trees	
-1	No true access condition (No true access condition)
-2	The language set is a non initialized variable or a variable containing the "Nothing" special value (The language set is a non initialized variable or a variable containing the "Nothing" special value)
-3	The language set is not defined (The language set is not defined)
Return code in IVR (Interactive Voice Response) trees	
-102	The language is not valid (The language is not valid)
If no access condition is checked in the specific IVR tree part, the set will be empty and no messages will be played.	

Specific part

In this part you can define up to four different languages and their associated condition. At run-time, if a condition is true, the corresponding language will automatically be selected for the rest of the tree (without the intervention of the agent). The various conditions are evaluated one after the other; the first condition fulfilled is selected.

Each line associating a language with a condition can be edited as follows:

- the first three fields (**If** part) is a comparison expression. Variables can be compared to other variables (selected from the drop-down list) or to constants (entered by typing them in the text boxes).
- the last field (**"Then"** part) defines the language. From the drop-down list, select a language defined for the script or select an existing variable of String type containing the name of the language at run-time.

13.2.4.10 DESCRIPTION OF THE "FUNCTIONCALL" NODE

13.2.4.10.1 PRESENTATION OF THE "FUNCTIONCALL" NODE

The "FunctionCall" node  executes an external procedure or function. Arguments can be passed to it and the result can be collected in a variable.

The function called by this node can be synchronous or asynchronous. It must be written precisely (see § 13.2.4.10.2). Certain rules must be followed if windows are to be displayed on the agent screen using this node (see § 13.2.4.10.3).

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "FunctionCall" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.31 VALUES OF THE "FUNCTIONCALL" RETURN CODE VARIABLE

Value	Description
0	No error
-1	Number of argument returned by the function exceeds the number of output variable defined in the node
-2	Invalid output argument type: numeric argument is required : numeric argument is required)
-3	Invalid output argument type: date is required : date is required
-4	Invalid output variable type
-5	A constant is in the output variables list
-6	Cannot convert DataOut Length value to long type
-7	Error raised by the called function
-8	Cannot convert Code value to Long type
-9	A constant is in the FunctionCall Return Variable
-10	A Non numeric variable is used as the Function return Code Variable
-11	An asynchronous function returns output argument in the initiation phase
-12	Error raised by the still executing function (asynchronous function)
-13	Error occurred during notification of the ActiveX component for ExtensionsStateChanges method
-14	Error in initialization of ExecuteExtendedAsynchronous function
-15	Use ExtendedAsynchronous mode with bad value of Options
-16	Use Extended Asynchronous mode with DLL
-17	Use ExtendedAsynchronous mode with ExtensionStateChanges in IVR Script
94	No initialized variable

Specific part

1 **{Select function}** tab:

The external function called by this node can be implemented in two ways: either through a Dynamic Link Library DLL, or through an ActiveXDLL (with the DCOM: DCOM (Distributed Component Object Model)

- Check the ***[Function from DLL]*** box if you want the node to call a function implemented in a DLL. You must then identify the function:
  - ***{DLL Name}*** field: select one of the three items from the drop-down list. "AgoraCustomer" is a library reserved for customer functions, "AgoraProvider" is a library reserved for provider functions, and "AgoraSystem" is reserved for Mitel functions.
  - ***{Code}*** field: in this text box you can enter the numeric identifier of the function inside the DLL. Type this number using your keyboard, or select an existing variable of Numeric type from the drop-down list.
- Check the ***[Function from DCOM]*** box if you want the node to call a function implemented in an ActiveX DLL. You must then identify the function:
  - ***{DCOM Server}*** field: select the server providing the function from the drop-down list.
  - ***{Code}*** field: in this text box you can enter the numeric identifier of the function. Type this number using your keyboard, or select an existing variable of Numeric type from the drop-down list.

Synchronous and asynchronous function calls

Functions implemented using DCOM can be synchronous or asynchronous.

When this node calls a "synchronous" function, the M5000 CC Media Server or M5000 CC User application executing this node is only released at the end of the function call. This means that the M5000 CC Media Server or M5000 CC User cannot handle another call until the execution of the function is finished. Therefore, such calls should only be performed for functions that are quickly executed.

When this node calls an "asynchronous" function, the M5000 CC Media Server or M5000 CC User initializes the execution of the function and then returns immediately to its work. At regular intervals, it asks if the function is still executing. When it receives an answer different of -1, tree execution is resumed.

Extended asynchronous function calls

Functions implemented using DCOM can use extended asynchronous.

This works like an "asynchronous" function, the M5000 CC Media Server or M5000 CC User initializes the execution of the function and then returns immediately to its work. After different actions are produced depending of the options chosen. Currently only one Option is available.

- Check the ***[Activate extension state change notification]*** if you want the ActiveX DLL to be notified of the extension state change. This option is only available in User Interface trees.

At regular intervals, it asks if the function is still executing. When it receives an answer different of -1, tree execution is resumed.

2 **{Data In}** tab:

Use this tab to define the input arguments of the function.

Enter arguments in the text box using your keyboard. Arguments must be enclosed in square brackets; white spaces are ignored between arguments.

Variables can be inserted as arguments. At run time, they will be textually replaced by their value.

To include a variable:

- Press ***[F2].***
- Select an existing variable from the appearing list.
- click ***[OK]***.

3 **{Data Out}** tab:

Use this tab to define the output arguments of the function.

The output arguments of the function are stored in existing variables of the appropriate type. The management of the output arguments list is performed in the following way:

- you can add a variable to the list by clicking ***[Add]*** (the new variable will be added at the end of the list) or by selecting an item from the list and clicking ***[Insert]*** (the new variable will be inserted before the selected item). Select a variable from the list that appears and click ***OK***.
- A variable can be removed from the list by selecting it and clicking the ***[Delete]*** button.

Return value:

The numeric return value of the function must be stored in a variable of "Numeric" type: select it from the ***{Return value}*** drop-down list.

Data out length

The output arguments are stored in a "String": you must specify the maximum length (as a number of characters) in the ***{Data out length}*** combo box. Type this number using your keyboard, or select an existing variable of Numeric type containing this value at run-time from the drop-down list.

Value required

The ***{Data out length}*** value can be deduced from the following guidelines:

- The Numeric and Date variables use as many characters as their textual representation (including decimal separator, etc.). The maximum length of a floating-point number in double precision is 25.
- A String variable has a length equal to the number of characters it contains, white spaces included.
- Each variable is enclosed in square brackets by the system (2 characters).

Example:

If the ***{Data out}*** list contains a "String" of 10 characters and a "Numeric" variable which could contain any integer or floating-point value in double precision, the ***{Data out length}*** value should be set to:

25 (Numeric variable) + 2 (brackets) + 10 (String variable) + 2 (brackets) = 39 characters.

The AgoraSystemDLL:

- A call may be added to a list of outgoing calls from an incoming script (“Call Back" function), using a

"FunctionCall" node (see Section 13.2.4.10.4).

- The integration of a sheet return in a skills application may be simplified using the "Smartpop" DLL (see § 13.2.4.10.5).
- It is possible to create directories dynamically using the "FunctionCall" node and "AgoraSystem" DLL (see Section 13.2.4.10.6).
- It is possible to start a program, open some files, a URL link or an e-mail, using the "FunctionCall" node and "AgoraSystem" DLL (see Section 13.2.4.10.6).

13.2.4.10.2 CREATING A SYNCHRONOUS OR ASYNCHRONOUS FUNCTION FOR A "FUNCTIONCALL" NODE

You can create a synchronous or asynchronous function that may be called by a "FunctionCall" node.

Developing Standard Windows DLL Functions

In a standard Windows DLL, we can only implement synchronous (blocking) functions. Three DLLs can be developed. The first, named "AgoraSystem.dll" is meant for the software developer: Mitel. The second, named "AgoraProvider.dll" is reserved for the distributor: Any integrator. The third, named "AgoraCustomer.dll" is reserved for the customer.

The same object is used as entry point to all DLLs: AgoraEntryPoint. This paragraph explains the development of the object for the "AgoraProvider" DLL. To apply this paragraph to other DLLs, replace "AgoraProvider" with the name of the corresponding DLL.

The object needs to have the following interface:

- According to Visual Basic format:

Table14:

```
Public function AgoraEntryPoint     (ByVal Code As Long,
                                     ByVal DataIn As String,
                                     ByVal DataInLength As Long,
                                     DataOut As String,
                                     ByVal DataOutLength As Long,
                                     NbrOfArgumentsOut As Long) As Long
```

- According to **C** format:

Table15:

```
long _stdcall AgoraEntryPoint     (long Code
                                   char * DataIn,
                                   long DataInLength,
                                   char * DataOut
                                   long DataOutLength
                                   long * NbrOfArgumentsOut)
```

The different arguments have the following meaning:

- Code: As the function call can only call one function of the DLL, the code is used to identify which function is executed. It is used by the DLL to dispatch the request to the different functions implemented in the DLL.
- DataIn: the input arguments (provided by the FunctionCall node to the DLL). All input arguments are passed in a string. Each argument is enclosed in brackets. For example, if the arguments "Hello" (the string), "10" (the number) and "10/12/98" (the date) are passed to the DLL, the DataIn argument contains the string "[Hello][10][10/12/98]".
- DataInLength: contains the number of characters in the DataIn string.
- DataOut: the output arguments (provided by the DLL to the " FunctionCall" node). This argument is a pointer to an empty buffer situated in the calling environment. The DLL can fill the buffer with output

arguments. As for input arguments, output arguments are enclosed between brackets.

- DataOutLength: the size of the buffer provided to the DLL for output arguments. The DLL can not fill the buffer with more character than specified by this argument.
- NbrOfArgumentsOut: the number of arguments returned by the function.

Finally, the DLL can return a long value that will be stored in the script variable used as return value of the "FunctionCall" node. Do not confuse it with the return code variable used to indicate errors occurring while calling the DLL. The return variable is situated in the specific part of the node (Data Out tab) while the return code variable is situated in the generic part of the node).

Developing ActiveX components

In ActiveX components, synchronous and asynchronous functions can be called. Moreover, there's a special extended asynchronous access. As for standard DLL function, three components can be developed. Each component have to contain a single class. The component meant for Dialog Systems contains the AgoraSystems.AgoraEntryPoint class. The component reserved to the distributor contains the AgoraProvider.AgoraEntryPoint class. The component reserved to the distributor contains the AgoraProvider.AgoraEntryPoint class.

1 Using function call with synchronous and asynchronous functions

In each AgoraEntryPoint class two methods have to be implemented. The first, called Execute is used to execute synchronous functions and to initiate asynchronous functions. It is very similar to the function implemented in standard DLL and has the following interface (written in **Visual Basic** format):

Table16:

```
Public function Execute        ByVal Code As Long,
                               ByVal DataIn As String,
                               ByVal DataInLength As Long,
                               DataOut As String,
                               ByVal DataOutLength As Long
                               NbrOfArgumentsOut As Long) As Long
```

Arguments have the same meaning as in Standard DLL. The return value of the Execute function has a special meaning. The special value –1 is meant to indicate that the called function is asynchronous and is successfully initiated. Other values indicate that the called function is synchronous; they are saved in the script variable used as return value.

If the called function is asynchronous, the DataOut and NbrOfArgumentOuts arguments of the Execute function are ignored. Furthermore, a second method of the class have to be implemented and is frequently called to check if the asynchronous function is terminated. This second method has the following interface (written in **Visual Basic** format):

Table17:

```
Public Function StillExecuting (DataOut As String,
                                ByVal DataOutLength As Long
                                NbrOfArgumentsOut As Long) As Long
```

This function must return the special value –1 as long as the asynchronous function is not terminated. In this case, the StillExecuting arguments are ignored. When the asynchronous function is terminated, the function can return any value (except the special value –1). In this case, the arguments of the StillExecuting method have the same meaning as the corresponding arguments of the Execute method. They are used to pass information from ActiveX component to script. The value returned by the StillExecuting method is stored in the script variable used as return value of the FunctionCall node.

Furthermore, the "FunctionCall" node can stop the asynchronous function at any time. It does so simply by releasing its reference to the object that implements the asynchronous function. It implies that the FunctionCall node must be the only one to have a reference to this object.

0 Using the function call with extended asynchronous functions

In each AgoraEntryPoint class two methods have to be implemented. The first, called ExecuteExtendedAsynchronous is used to initiate asynchronous functions. It is very similar to the function implemented in standard DLL and has the following interface (written in **Visual Basic** format):

Table18:

```
Public function ExecuteExtendedAsynchronous    (ByVal Code As Long,
                                                ByVal DataIn As String,
                                                ByVal DataInLength As Long,
                                                Options As Long)   As Long
```

The arguments have the same meaning as the corresponding arguments in Standard DLL. Only the last argument differs. Options express a combination of various options chosen in the select function tab of the FunctionCall node definition form. Currently, only one option is supported. This option defined if the ActiveX component wants to be notify of each status change of the extension or not.

The return value of the "ExecuteExtendedAsynchronous" function has a special meaning. The special value 0 indicates that the called function is successfully initiated. All other values are saved in the function call return value and the return code variable of the FunctionCall node is -14.

Furthermore, a second method of the class have to be implemented and is frequently called to check if the asynchronous function is terminated. This second method has the following interface (written in **Visual Basic** format):

Table19:

```
Public Function StillExecuting    (DataOut As String,
                                   ByVal DataOutLength As Long
                                   NbrOfArgumentsOut As Long) As Long
```

This function must return the special value –1 as long as the asynchronous function is not terminated. In this case, the StillExecuting arguments are ignored. When the asynchronous function is terminated, the function can return any value (except the special value –1). In this case, the arguments of the "StillExecuting" method have the same meaning as the corresponding arguments Standard DLL. They are used to pass information from ActiveX component to script. The value returned by the StillExecuting method is stored in the script variable used as return value of the FunctionCall node.

Extended asynchronous options:

Activate extension state change notification: Introduced above, this option defined if the ActiveX component wants to be notified of each status change of the extension or not. The corresponding function in the ActiveX must have the following interface (written in Visual Basic format):

Table20:

```
Public function ExtensionStatusChanges    (ByVal ExtensionDn As String,
                                           ByVal ExtensionStatus As Long,
                                           ByVal CallId As String) As Long
```

The different arguments have the following meaning:

- **ExtensionDn**: This argument represent the DN (telephone number) of the extension.
- **ExtensionStatus**: This numeric argument represent the status of the extension.

The possible values are:

Tableau 13.1 VALUE OF THE EXTENSION STATUSES OF THE "FUNCTIONCALL" NODE

Value	Description
0	Extension status: FREE
1*	This value is not used with this function.
2	Extension status: RESERVED, corresponding to an inbound call.
3	Extension status: DCP, corresponding to an outbound call.
4	Extension status: ON HOLD, corresponding to an inbound call.
5*	This value is not used with this function.
6*	This value is not used with this function.
7*	This value is not used with this function.
8	Extension status: RESERVED, corresponding to an outbound call.
9	Extension status: DCP, corresponding to an outbound call.
10	Extension status: ON HOLD, corresponding to an outbound call.

- **CallId**: contains the id of the associated ICD Call.

During the execution of a "FunctionCall "node using an ActiveX component, these methods or functions are called on the instance of the object created by the CreateObject function and this instance of the object (defined by the "AgoraEntryPoint" class) is associated with a particular M5000 CC call.

Result:

- When an extension of an agent switches to private-in or private-out, this change cannot be notified because there is no M5000 CC call and thus no script associated with it.
- The changes in the status of two distinct extensions associated with two distinct scripts (and therefore two distinct M5000 CC calls) are notified by the call of a function on two independent instances of the object.

  Furthermore, the "FunctionCall" node can stop the extended asynchronous function at any time. It does it simply by releasing its reference to the object that implements the extended asynchronous function. It implies that the FunctionCall node must be the only one to have a reference to this object.

13.2.4.10.3 DISPLAYING A CUSTOM WINDOW IN THE M5000 CC USER APPLICATION BY MEANS OF A FUNCTIONCALL NODE

You can display a personalised window in the M5000 CC User application by means of a “FunctionCall” node.

Creating an ActiveX DLL

To display a custom window in the M5000 CC User application, we create an ActiveX DLL that implements an asynchronous function. This asynchronous function displays the window in its initialization part and is terminated when the window becomes invisible. The function implemented must absolutely be asynchronous to prevent this window from blocking the M5000 CC User application during all the time the window is displayed.

Furthermore, the implementation of the asynchronous function must follow this simple rule: the M5000 CC User application must be able to remove the Custom Window. It does it simply by releasing its reference to the object that implements the asynchronous function. So, it implies that **the M5000 CC User application must be the only application to have a reference to the object that implements the asynchronous function**.

Examples

The template described in this document illustrates the development of asynchronous function and is developed with Visual Basic 5.0. It enables two different custom windows to be displayed.

The first, named frmInfo, is used to show information in a text box to the user.

The second, named frmCapture is used to capture custom information.

Moreover, this template shows the use of an extended asynchronous function (Refresh state of the extension in frmInfo).

1 The **frmInfo** window

The function used to display this window has one input argument and no output argument. The input argument contains the text to display in the window. To implement this window, we create a Visual Basic ActiveX DLL project. We add a new form and name it frmInfo. Then, we add a text box named txtInfo to the window and a command button named cmdOK.

We add also a class module named AgoraEntryPoint (see § 13.2.4.10.2). In this class module, we add the two methods Execute and StillExecuting. These two methods must have the following interface:

Table14:

Public Function Execute	(ByVal Code As Long, ByVal DataIn As String, ByVal DataInLength As Long, DataOut As String, ByVal DataOutLength As Long, NbrOfArgumentsOut As Long) As Long

Table15:

Public Function StillExecuting	(ArgumentsOut As String, DataOutLength As Long, NbrOfArgumentsOut As Long) As Long

When the Execute method is called with 1 for the Code argument, the Execute method creates a new frmInfo window, extracts the argument from DataIn, displays it in the txtInfo text box and shows the created frmInfo window. It finally returns 1.

The StillExecuting method of the AgoraEntryPoint object returns –1 while the frmInfo window is visible. This is simply done by checking the IsStillExecuting property of the window. This property is set to True when the frmInfo object is loaded. It is not checked (False) when the frmInfo is unloaded. When he frmInfo window becomes invisible, he "StillExecuting" method returns 0. It previously passed the argument on output to 0 and the argument string on output to an empty string.

The "Terminate" event of the "AgoraEntryPoint" object checks that an "frmInfo" window has been created. In this case, we unload the window and release the reference to it. This ensures that any displayed "frmInfo" window will be removed when the M5000 CC User application releases its reference to the "AgoraEntryPoint" object.

0 The **"frmCapture"** window

This function shows a frmCapture window that is used to capture up to 10 custom data elements. The number of input arguments and of output arguments depends of the number of custom data elements we want to capture. The "frmCapture" window contains 10 "lblCapture" labels indexed from 1 to 10. It also contains textboxes called "txtCapture" which are indexed from 1 to 10. The number of labels and textboxes that will be visible when the window is displayed is set by the number of input arguments. The n^{th} input argument is the text that is displayed in the nth label. When the frmCapture is shown, the user can type data in the visible text box. These data will be returned in the output arguments and saved in script variables.

To implement this window, we complete the Execute and StillExecuting methods of the AgoraEntryPoint object.

When the Execute method is called with 2 for the Code argument, the Execute method creates a new frmCapture window, extracts the arguments from DataIn. It makes visible as many labels and text boxes as DataIn arguments and displays each input argument in the corresponding label. Finally, it shows the created frmCapture window and returns –1.

The StillExecuting method of the AgoraEntryPoint object returns –1 while the frmInfo window is visible. This is done in the same way as the one used for frmInfo. When the frmCapture window become invisible, the StillExecuting method extracts the data provided by the user and saves it in DataOut. It also saves the number of output arguments in "NbrOfArgumentsOut". It finally returns 0.

On the terminate event of the AgoraEntryPoint object, we check if a frmCapture has been created. In this case, we unload the window and release the reference to it. This ensures that any displayed "frmInfo"

window will be removed when the M5000 CC User application releases its reference to the "AgoraEntryPoint" object.

Extended asynchronous function

- Activate extension state change notification

  The function used to display this window has one input argument and no output argument. To implement this window, we create a Visual Basic ActiveX DLL project. We add a new form and name it frmInfo. Then we add to the window two textboxes called "txtInfor" and "txtExensionStateChanges" and a command button called cmdOK.

  We add also a class module named AgoraEntryPoint (see § 13.2.4.10.2). In this class module, we add the three methods "ExecuteExtendedAsynchronous", "ExtensionStateChanges" and "StillExecuting". These three methods must have the following interface:

Table16:

Public function ExecuteExtendedAsynchronous	(ByVal Code As Long,
	ByVal DataIn As String,
	ByVal DataInLength As Long
	Options As Long) As Long

Table17:

Public function ExtensionStateChanges	(ByVal ExtensionDn As String,
	ByVal ExtensionStatus As Long
	ByVal CallId As String) As Long

Table18:

Public Function StillExecuting	(ArgumentsOut As String,
	DataOutLength As Long,
	NbrOfArgumentsOut As Long) As Long

When the ExecuteExtendedAsynchronous method is called with 1 for the Code argument, the ExecuteExtendedAsynchronous method creates a new frmInfo window, extracts the argument from DataIn, displays it in the txtInfo text box and shows the created frmInfo window. It finally returns 0.

If the extension state associated to this instance of this ActiveX DLL changes, ExecuteExtendedAsynchronous is executed. In this function, you can do everything. For example, we have implemented a refresh of the content of the txtExtensionStateChanges text box present in frmInfo and a set the focus to this form.

The StillExecuting method of the AgoraEntryPoint object returns –1 while the frmInfo window is visible. This is simply done by checking the IsStillExecuting property of the window. This property is checked (set to True) when the frmInfo object is loaded. It is not checked (False) when the frmInfo is unloaded. When he frmInfo window becomes invisible, the "StillExecuting" method returns 0. It previously passed the argument on output to 0 and the argument string on output to an empty string.

On the terminate event of the AgoraEntryPoint object, we check if a frmCapture has been created. In this case, we unload the window and release the reference to it. This ensures that any displayed "frmInfo" window will be removed when the M5000 CC User application releases its reference to the "AgoraEntryPoint" object.

13.2.4.10.4 ACTIVATION OF THE "CALL BACK" IN A "FUNCTIONCALL" NODE

To add a call in dial list from an inbound script, use a FunctionCall node (see § 13.2.4.10):

- Select "Function From DCOM" in the "Select Function" tab
- In the "DCOM Server" select "AgoraSystem".
- In the "Code" text box, enter the code 4 when adding an OutboundCall in dial list for a Service in Production

and the code 5 when adding an OutboundCall in dial list for a Service in Beta.

- In "Data In", enter the arguments for the call with the following syntax: *[ServiceId] [CallId] CallName] [PhoneNumber] [Priority] [NextCallTime] [LeftConnects] [LeftRetries] [UseDialListProperties] [AgentId] [TeamId] [NumberOfLanguages] [LanguageId1] [LanguageLevel1] [LanguageId2] [LanguageLevel2]…[NumberOfSkills] [SkillId1] [SkillLevel1] [SkillId2] [SkillLevel2]…*

  Where:

  - "ServiceId" is the name of the Service where the call must be added
  - "CallId" is the id of call
  - "CallName" is the name of the call
  - "PhoneNumber" is the number to dial (see § 13.2.2.7.4).
  - "Priority" is the priority associated with the call
  - "NextCallTime" is the next call attempt time
  - "LeftConnects" is the "LeftConnects" (number of connections remaining) property for the call
  - "LefRetries" is the LeftRetries (number of call attempts remaining) property for the call
  - "UseDialListProperties" (dialing properties) always 0
  - AgentId is the id of the agent associated with the call
  - TeamId is the team to which the agent must belong to treat the call
  - NumberOfLanguages is the number of languages for which languages levels are required.
  - LanguageIdx is the ids of languages for which a language level is required.
  - "LanguageLevelx" is he level required for the previous "LanguageIdx"
  - "NumberOfSkills" is the number of skills for which skills levels are required.
  - "SkillIdx" are the ids of skills for which a skill level is required.
  - "SkillLevelx" is he level required for the previous "SkillIdx"

  Example for an outbound Service with the following parameters:

  - name of the Outbound Service
  - Languages in the Service: English, French
  - skills in the Service: Skill1, Skill2

    If an agent with a level 2 or more in English must treat the call, the arguments should be:

    [Outbound] [Id1] [Name1] [8004] [0] [3/10/99 12:30] [3] [3] [1] [] [] [1] [English] [2] [0]

- In Return argument, the argument for the return code must be a "string" type variable. If successful, this variable is 0, and in other cases:
  - -1 if the service "ServiceId" does not exist
  - -2 if the "CallId" is already used in the dial list
  - -3 if the "dial number" is incorrect
  - -4 if the "priority" is incorrect
  - -5 if the "LeftConnects" is incorrect
  - -6 if the "LeftRetries" is incorrect
  - -7 if a "LanguageId" does not exist in the Service
  - -8 if a "Level" for a language is incorrect
  - -9 if the string for the languages is incorrect
  - -10 if a "SkillId" does not exist in the Service
  - -11 if a "Level" for a skill is incorrect
  - -12 if the string for the skills is incorrect
  - -13 if the dial list is already open by another application
  - -14 if a field for a language or a skill is not present in the dial list
  - -15 if "ServiceId" is not an outbound Service
  - -16 if the "Priority" is not a numeric value
  - -17 if "NextCallTime" is not a date

- -18 if "LeftConnect" is not a numeric value
- -19 if "LeftRetries" is not a numeric value
- -20 if "UseDialListProperties" is not a Boolean
- -21 if "NumberOfLanguages" is not a numeric value
- -22 if "NumberOfSkills" is not a numeric value
- -23 if a "Level" is not a numeric value

13.2.4.10.5 DESCRIPTION OF THE "SMARTPOP" DLL

You can use the "Smartpop" DLL to facilitate the integration of a sheet return in a skills application.

The DLL "Smartpop" is used to make the link between M5000 CC and the business application according to the following principle: by using the "FunctionCall" node see § 13.2.4.10) the script sends various information to the "Smartpop" component. This transfer is carried out by UDP message. When these messages are received, the "SmartPop" component informs the skill application who takes over the sheet return.

It should nevertheless be specified that the M5000 CC User application is required for the "SmartPop" operation. In fact, the M5000 CC User application executes the script that contains the "FunctionCall" node.

To parameter the "FunctionCall" node:

- Use the "AgoraSystem" DCOM Server with code 7
- The input arguments are as follows:
  - P_CallCLID: The calling party's number
  - P_CallDNIS: the called party number
  - a "string" type variable (global or local). It may contain information to send to the skill application via "SmartPop".
  - P_AgentExtension: the extension that receives the call.

Note: The order of arguments must be respected.

- The return arguments are "string" type variables that provide an indication of the state of the data transfer between the "FunctionCall" node and the "SmartPop" component.

Example:

- T_FC_DataOut1 = 0 and T_FC_DataOut2 containing '***[OK]***' indicates that the transfer was carried out correctly.
- Other return code: T_FC_DataOut1 = -1 when the IP port is not defined.

Integrating in a skills application

Note: The following description is based on an integration in VisualBasic 6.

First the skill application must have a reference to the "SmartPop" DLL.

Then a "SmartPop.MainCLS" type "WithEvents" object must be defined. This object contains the "RingingEvent" event:

Table19:

RingingEvent (ByVal pstrCallerNumber As String, ByVal pstrCalledNumber As String, ByVal pstrCallData As String, ByVal pstrExtension As String)	**Effect**	SmartPop generates this event when a new call is transmitted to the skill application
	Arguments	• pstrCallerNumber: calling party number. • pstrCalledNumber: called number (Service DNIS) • pstrCallData: contains a string defined from the agent script. • pstrExtension: the extension that receives the call.

Visual Basic code example:

```
'----------------------------------------
'Definition of the object variable
'----------------------------------------
Dim WithEvents mobjSmartPop As SmartPop.MainCLS

'-------------------------------------------------------------------
'Use of a method to initialize the object
'-------------------------------------------------------------------
Private Sub Form_Load()()
Set mobjSmartPop = New SmartPop.MainCLS
End Sub

' ---------------------------------------------------------------------------------------------
' Event that is generated when a new call arrives
' The skill application places the code in this method
' to return the sheet.
' ---------------------------------------------------------------------------------------------
```

Table20:

```
Private Sub mobjSmartPop_RingingEvent( _
    ByVal pstrCallerNumber As String, _
    ByVal pstrCalledNumber As String, _
    ByVal pstrCallData As String, _
    ByVal pstrExtension As String)


    Debug.Print pstrCallerNumber
    Debug.Print pstrCalledNumber
    Debug.Print pstrCallData
    Debug.Print pstrExtension

    End Sub
```

Note: The "SmartPop" DLL must be installed by the skill application on the agent set. The M5000 CC User application must also be installed on this same set.

13.2.4.10.6 DESCRIPTION OF THE DLL "AGORASYSTEM"

Dynamic directory creation has been made possible via the “FunctionCall” node using the AgoraSystem dll.

The "FunctionCall" node options must be as follows:

- Function from DCOM
- Mode: synchronous/asynchronous
- DCOM server = AgoraSystem
- Code = 10

Input argument

- The full path of the directory to be created

Output argument

- The return code corresponding to the result of the request (numeric)
- The description corresponding to the return code (character string)

Possible return codes

Code	description	explanation
0	Folder is Created	

Code	description	explanation
-1	Already Exists	The directory exists already.
Microsoft error code	Error description	Cannot create directory

Automatic program execution, opening of files, URL links and e-mails are possible via the “FunctionCall” node, using the AgoraSystem dll.

The "FunctionCall" node options must be as follows:

- Function from DCOM
- Mode: synchronous/asynchronous
- DCOM server = AgoraSystem
- Code = 11

Input arguments

- [File] The path of the file to open, the executable path, the URL address or e-mail link
- [CommandLine] associated with the program to be executed (if no command line must be specified, an empty string may be used as argument).

Output argument

- The return code corresponding to the result of the request (numeric)
- The description corresponding to the return code (character string)

Possible return codes

Tableau 13.1

Code	description	explanation
0	Success	No execution error
2	File not found	The file path does not exist.
3	Path not found	The directory path does not exist.
5	Access denied	
8	Out of memory	
32	DLL not found	
26	A sharing violation occurred	
27	Incomplete or invalid file association	
28		
29	DDE transaction failed	
30	DDE busy	
31	No association for file extension	
11	Invalid EXE file or error in EXE image	

All these return codes correspond to the return codes for the ShellExecuteA function in API Win32. For more information, please refer to the associated Microsoft documentation.

Running a program with or without Command line

To start a program located in a FilePath:

- With the command line:
  - First argument = FilePath

- Second argument = Command line

• Without command line:

- First argument = FilePath
- Second argument = empty string

Opening a document (.doc, .txt, .jpg. .wav, .mdb, …)

It is possible to open a file with a specific extension, provided there is an association between this extension and a program (Example: .doc ' Microsoft Word).

To do this, just proceed as follows:

- First argument = full file path
- Second argument = empty string

Opening an internet URL via a browser

To easily access an internet address, just proceed as follows:

1) Use the default browser:

- First argument = URL of the requested web page
- Second argument = empty string

This option enables you to use the default browser but for Internet Explorer, it is probable that if a web page is already open, it will be replaced by the new page requested. (Default option of Internet Explorer)

To ensure that the page is open in a new window (so no existing window is overwritten), it is possible to proceed differently (see point 2).

2) Start the web browser with a command line.

- First argument = iexplore
- Second argument = URL of the requested web page

Iexplore is the name of the Internet Explorer executable. It is necessary to specify the full path because the operating system recognises the path automatically.

Sending an e-mail with pre-entry of e-mail information

It is possible to start editing a new e-mail (using the default e-mail utility) and to fill in the details of this e-mail (subject, addressees, etc.) in advance.

- First argument = Command of the type described below
- Second argument = empty string

E-mail command:

mailto:emailaddress1;emailaddress2;…?subject=sujet&body=corps&cc=emailaddress;…&bcc=emailaddress

The first e-mail addresses specified are recipients of the e-mail. Then the different arguments after "?" are specified: :

- Subject = subject of the e-mail
- Body = body of the e-mail
- Cc = recipients to be copied
- Bcc = Blind carbon copy recipients

The arguments are not obligatory and their order is not important. Each of the arguments is separated by a &. If the argument is not specified, it is not necessary to add a “?”.

If in the argument Body, you wish to start a new paragraph, add the following special characters: %0D%0A

Let us take the example below:

I wish to send an e-mail.

- at the address: user@mitel.com
- with as subject "Hello"
- and as body two lines:

This is the body of the e-mail.
In two lines

Here is the command to enter:

mailto:user@mitel.com?subject=Bonjour&body=This is the body of the e-mail%0D%0AIn two lines

It is possible to retrieve the identifier of the agent connected to a terminal via the “FunctionCall” node, using the

AgoraSystem dll.

The "FunctionCall" node options must be as follows:

- Function from DCOM
- Mode: synchronous/asynchronous
- DCOM server = AgoraSystem
- Code = 13

Input arguments

- [DN] a telephone extension to which a user is currently connected

Output argument

- The return code corresponding to the result of the request (numeric)
- identifier of the subscriber using the telephone associated with the previous extension (character string)
- Data out length = 40

Possible return codes

Tableau 13.2

Code	description	explanation
0	Success	No execution error
94	Invalid use of null	E/S variable not initialized

Examples

- A user "Richard" is connected to phone P210 (containing DNs 210, 710, 810); calling the function using the argument
  - 210 will return "Richard".
  - 710 will return "Richard".
  - 810 will return "Richard".
- If nobody is using P210, the function will return an empty character string.

Agent availability and detailed status can be obtained through the "FunctionCall" node using the AgoraSystem DLL.

The "FunctionCall" node options must be set as follows :

- DCOM function
- Synchronous / asynchronous mode
- DCOM Server = AgoraSystem
- Code = 14

Input arguments

- Agent identifier.
- Availability type to return. 0 : the agent is available if all her / his extensions are idle; call identifier (CallId): the agent availability depends on the configuration of the service associated to this call.

Output arguments

- Agent availability (0: not available, 1: available).
- Agent status (0: logged on, 1: logged out).
- Agent activity (0: ready, 1: not ready, 2: PCP, 3: break).
- Activity code, only meaningful if activity = 1 or 2.
- Number of extensions used by the agent.

Length: 100.

Possible return codes

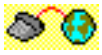
Tableau 13.3

Code	description	explanation
0	Success	No execution error
1	Invalid AgentId argument	No agent corresponds to this identifier
2	Invalid CallId argument	No call corresponding to this identifier exists in the system.

13.2.4.11 DESCRIPTION OF THE BIDIRECTIONAL"ASSOCIATION" NODE

There are two types of association: "Bidirectional association" (between Voice call and call) and "Unidirectional association" between two calls of the same service (independently of the media - Voice, E-mail or Web).

Description

The" Association" node  creates an association (see definition in § 1.4) between **two sessions using different media (Voice and Web)**.

This association means sharing global variables in order to offer coordination between these two media sessions.

This node is used to find another session corresponding to the required criteria. Only one "Association" node is needed in a script to link two sessions.

Once the association is performed, the global variables of the two media sessions are shared in order to offer coordination between them. There's no mechanism to break it manually (no DeAssociation node).

Note: An "Association" node is required to carry out a synchronization (see definition in § 1.4 and § 13.2.4.13).

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "Association" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable.

The possible values are:

Tableau 13.4 VALUES OF THE "ASSOCIATION" RETURN CODE VARIABLE

Value	Description
0	No error (No error)
-1	No other sessions used by another call respecting the condition(s) (There is more than one session used by another call respecting the conditions)
-2	More than one session used by another call respecting the condition(s) There is more than one session used by another call respecting the condition(s)
-3	Condition not defined (Condition not defined)
-4	Invalid use (Association node not available in Email trees) Use not valid (the Association node is not available in the e-mail trees)
-5	Association already done: one session used by another call respects the condition(s) but this session is already associated to another one (association already exists: There is one session used by another call respecting the condition(s), but this session is already associated to another one
-6	Impossible to make the association. No "Multimedia agents" licence available.

Specific part

The node tries to identify a logical link between global variables of the current session and global variables of other media sessions for this Service version number.

1 **{Association conditions}** field:

Operators between global variables can be , <>, >, <=, >, >=.

Operators between conditions can be AND, OR.

0 **{Association type}** field:

You have to choose whether you want the tree concerned by the association to be ***[Master]*** or ***[Slave]*** of this association (check the relevant radio button). This option determines the way the global variables will be managed (important for the sharing, statistic and synchronizing parts).

If there are two identical global variables with different values in the sessions to associate, which global variable value will be kept? The 'master' option answers this question. The resulting value of each global variable is the value of the session that has the 'master' parameter.

The association fails if:

- There is no other session used by another call respecting the condition(s)
- There is more than one session used by another call respecting the condition(s)
- There is one session used by another call respecting the condition(s), but this session is already associated to another one

The association succeeds if:

- There is one and only one session (not already associated) used by another call respecting the condition(s)

Comments:

- The association will only share variables when the Voice and Web masks are selected.
- When two sessions are associated, the reading and writing of the call global variables have to be done through the Server, so that it costs time and the performance can be slowed down.
  As a consequence, we would recommend using global shared variables only when necessary. In other cases (global variables not shared), a 'cache' mechanism is used in the client applications to read the global variables, what allows increasing the speed of the reading.
- In the M5000 CC User application, the Resume option is no longer available when an association is done.

Atomicity

M5000 CC must guarantee execution integrity. Let's suppose two sessions acceding to the same system variable X.

Table14:

Session 1	Session 2	X
Read X from the system		**5**
	Read X from the system	**5**
Change X locally: X=X+1		**5**
	Change X locally: X=X*2	**5**
Write X to the system		**6**
	Write X to the system	**10**

If X=5 before the execution of the two sessions, at the end of the first session, X=6 and at the end of the second session, X=10.

This is not atomic: both sessions have been executed but the result of one of them has been ignored.

If the atomicity is respected, both sessions have to be carried out one after another and the resulting value of X has to be 12(=(5+1)*2) or 11 (=(5*2)+1) according to the order in which they execute.

A session can change X, only if this variable is not modified by another session.

By introducing the association between calls, it may occur that a call wants to change a global variable (shared between calls) while another call of the association is doing a similar action.

The problem mainly appears in the "Assignment" node where readings are followed by writings (Simple Assignment, Add Items to a Set, String Concatenation) and in the "AutoLanguage" node (the languages must be written to Set variable in one time).

These nodes (or node options) guarantee that atomicity is preserved.

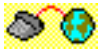
All other nodes (or node options, including reading the generic parts of each node) do not guarantee atomicity.

Note: Creation of bidirectional association between Web session and Voice session allows sharing global variables and synchronization (with synchronization node).

13.2.4.12 UNIDIRECTIONAL " ASSOCIATION " NODE DESCRIPTION(HEADING4.SDP)

There are two types of association: "Bidirectional association" (between Voice call and call) and "Unidirectional association" between two calls of the same service (independently of the media - Voice, E-mail or Web).

Description

This node  allows unidirectional association between two calls of the same service (independently of the media - Voice, E-mail or Web).

This association allows finding to which other call the current call (that use the association node) must be associated.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "Association" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable.

The possible values are:

Tableau 13.1 VALUES OF THE "ASSOCIATION" RETURN CODE VARIABLE

Value	Description
0	No error (No error)
-1	No other sessions used by another call respecting the condition(s) (There is more than one session used by another call respecting the conditions)
-2	More than one session used by another call respecting the condition(s) There is more than one session used by another call respecting the condition(s)
-3	Condition not defined (Condition not defined)
-4	Invalid use (Association node not available in Email trees) Use not valid (the Association node is not available in the e-mail trees)
-5	Association already done: one session used by another call respects the condition(s) but this session is already associated to another one (association already exists: There is one session used by another call respecting the condition(s), but this session is already associated to another one
-6	Impossible to make the association. No "Multimedia agents" licence available.

Specific part

- ***{Association type}*** field: Create a unidirectional association between the current call and another call. If the association succeeded, the Assignation node can be used to import global variables from the associated call or to export information from the current call to the global variables of the associated call.

Association fails when:

- A session, used by another call that respect the conditions, is already associated to another call (bidirectional Master or Slave association only)

Association success when:

- Exists only one session (not associated yet) used by the another call that respect the conditions (bidirectional Master or Slave association only)
- Exists only one session used by another call respecting the conditions (unidirectional association)

13.2.4.13 DESCRIPTION OF THE "SYNCHRONIZATION" NODE

Description

The "Synchronization" node  (System node) makes a synchronization between **two different media sessions (Voice and Web)**.

Synchronization introduces an explicit "cobrowsing" concept. The script of one session decides when and in which node the other session is synchronized.

The synchronization works when two media are associated (see § 13.2.4.11). For example, a customer wants to consult his mailbox using his browser and phone. The web session controls the navigation by synchronizing the voice session.

It is possible to imagine the behaviour to the contrary, where the voice session synchronizes the web session (using PUSH technology): the IVR or Voice User script could force the web script to send a URL to the web browser.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "Synchronization" node, there is no Return code variable. This node does not return a value upon execution.

Specific part

This system node considers the following parameters:

- Tree Destination
- Node destination

The possible values are:

Tableau 13.2 VALUES OF THE "SYNCHRONIZATION" RETURN CODE VARIABLE

Value	Description
0	No error (No error)
-1	Bad destination tree Id (Wrong destination tree ID)
-2	Bad destination node Id (Bad destination node Id)
-3	Error (Error)
-4	Bad ICDCall type wrong ICDCall type
-5	Not associated not associated
-6	Bad associated ICDCall type wrong ICDCall type
-7	Bad associated ICDCall connected component (Bad associated ICDCall connected component)

Tableau 13.2 VALUES OF THE "SYNCHRONIZATION" RETURN CODE VARIABLE

Value	Description
-8	Bad associated ICDCall status (Bad associated ICDCall status)
-9	ICDCall synchronizing (ICDCall synchronizing)
-10	Associated ICDCall synchronizing (Associated ICDCall synchronizing)
-11	Timeout (Timeout)

When the media script executes a "Synchronization" node, the execution of the script of another medium is interrupted (a specific return code is given): 2147483648) and the next node to be executed by the script of the other medium is specified in the "Synchronization" node parameter (like the "GoTo" node.

The synchronization fails if:

- There is no association
- Bad call status
- The User tree is the destination and the status of the call is IVR, WAIT, Reserved, etc.. (Voice session)
- he IVR tree is the destination and the status of the call is DCP, HOLD, PCP, etc. (Voice session)

The synchronization succeeds if:

- There's an existing association

There are some compilation restrictions:

- Bad session type:
  - The Voice User tree is the destination and the session type is Web
  - The IVR tree is the destination and the session type is Web
  - The Web tree is the destination and the session type is Voice
- There must be a destination tree and node

Comments:

- Interrupting a script removes all trees from the stack, so the execution of the "Synchronization" node is different from the execution of the "GoSub" node, where there's a way to return to the 'initial tree'.
- When updating a script, a global variable problem may occur
- If a call runs for a Service X and version Y in IVR part (after the update procedure, the Service and version are not changed), and this call is associated to a new call (with the updated script), the synchronization can fail if the destination tree does not exist.

Constraints for all the nodes:

- For all nodes, you must specify whether the atomicity is respected; for example:
  - The "AutoLanguage" node respects atomicity.
  - The "Info" node does not guarantee atomicity.
- For all asynchronous nodes, a new return code is set to 2147483648 when a synchronization is requested by another session.

13.2.4.14 WAIT " NODE DESCRIPTION

Description

The "Wait" node  allows waiting the end of the call on the IVR resource or waiting a period of time before ending the node execution.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-440).

Generic Part

In the generic part (see § General description of the "generic" part of a node editing window) of the "Wait" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this

variable.

The possible values are:

valeur	description
0	Node execution succeeded
-1	Time Out
-2	Release call detection
-122	Timeout value not valid

Specific Part

There are two options: [Wait end of call] and [Wait interval]

- ***[Wait end of call]*** option: the script execution stays in the wait node as long as the physical call still exists on the associated IVR resource. It allows, in combination with the "Conference" node, to wait the caller hangs up before ending the script. If there is no physical call on the associated IVR resource, the node terminates immediately.
- ***[Wait interval]*** option: wait a specific period of time (to be selected as a numeric variable or introduce as an numeric constant)

13.2.4.15 "RESERVEIVRRESOURCE " NODE DESCRIPTION

Description

The "ReserveIVRResource" node  allows the creation of a new logical call in M5000 CC and the reservation of an IVR resource for this call. Like "ChangeResourceType" node, it allows to precise a destination tree and to pass information to this tree as argument. The destination tree must be an IVR tree (with IVR) in the same service version as the calling tree, and cannot be a "starting tree".

When executing this node, the M5000 CC check if there are any available IVR resources (IVR resource of type "Strapping" or "Mixed" without physical or logical call associated). The available IVR resource (if exist) is reserved and a new logical call is created. A new script (defined by destination tree) is then started for this new call.

Note: If the available resource is of "mixed" type, it will be first put in "Not Ready" state.

Note: The "ReserveIVRResource" is mono Media Server, the node only reserve resource located on the same Media Server as the resource of the calling tree.

Note: The language used for the new call is the same of the the one from the script executing "ReserveIVRResource".

Edit the node

Edit or add the node to display the dialog box (see Sheet U-440).

Generic Part

In the generic part (see § General description of the "generic" part of a node editing window) of the "Conference" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable.

The possible values are:

valeur	description
0	Node execution succeeded
-2	Release call detection
-3	No available resource on the Media Server

valeur	description
-4	Node execution failed

Specific Part

[Options] frame:

- ***[Created call ID]*** checkbox: allows saving the call ID (with the ***{Created call ID}*** field).
- ***{Created call ID}*** field: Enable if ***[Created call ID]*** checkbox is checked. Select a script variable (string type) for saving the new call ID.
- ***{Destination tree}*** field: select an IVR tree (that isn't a "starting tree") of the service as destination tree.

[Arguments of the destination tree] frame: List of arguments is updated when a destination tree is selected in the ***{Destination tree}***. All arguments of the destination tree must be set.

(Right-click on an argument of the list)

- ***{Set value with constant}*** option: enter a fixed value for the argument
- ***{Set value with variable}*** option: Open a list of script variable that have the same type of the argument, user must select a variable of this list.

Note: If variable are chosen as argument of the destination tree, they are passed by value, modifications of those variables in the destination tree don't change their value in the calling tree.

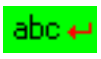
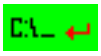
13.2.5 USER INTERFACE (UI)NODES ADD-ON MODULE

13.2.5.1 DESCRIPTION OF THE USER INTERFACE (UI) NODES ADD-ON MODULE

13.2.5.1.1 PRESENTATION OF THE MODULE AND LIST OF USER INTERFACE (UI) NODES

The nodes of the User Interface (UI) module  are used in the User Interface trees (trees executed by the web Portal or by the M5000 CC User application): they define the information and questions that appear on the agent's screen.

List of User Interface (UI)  **module nodes**:

-  AlphaNum (see § 13.2.5.2)
-  MCQ (see § 13.2.5.3)
-  Date (see § 13.2.5.4)
-  Numeric (see § 13.2.5.5)
-  Info (see § 13.2.5.6)
-  Address (see § 13.2.5.7)
-  ManualLanguage (see § 13.2.5.8)
-  AgentTransferCall (see § 13.2.5.9)
-  Dialog (see § 13.2.5.10)
-  ExecuteCommandLine(see § 13.2.5.11)

13.2.5.1.2 PROPERTIES OF THE USER INTERFACE NODES

This section describes properties common to all nodes of the User Interface module.

Specific parts of the User Interface nodes

In most User interface nodes, some (or all) properties configured in the specific part are dependent on the language. These properties must therefore be defined in each language of the service version.

User interface nodes are in fact composed of a generic part and as many specific parts as the number of languages defined for the script. (Each specific part of a user node corresponds to a language). The textual information of a User Interface node must therefore be defined in all the script languages.

Question nodes

The agent may ask the caller questions using several nodes ("AlphaNum", "Date", "Numeric" and "MulitpleChoiceQuestion"). The specific parts of these nodes have a common structure, listed below.

There are three options, which can be selected by radio buttons, to define the **"Execution"** mode of the question nodes:

- ***[Bypass the node if its return code is assigned*** radio button: the node will not be executed if its "Return code variable" (see definition in Section 1.4) is already assigned (before its execution). The "Back" action will not be available. This execution mode is very useful for transfers between agents (defined in the agent script) in order to avoid the second agent asking a question that has already been asked by the first agent. The execution of the node will therefore be omitted when the script is executed.
- ***[Pre-supply the answer with the return code]*** radio button: the execution of the node will never be omitted, the node will therefore always be executed and the response will be pre-supplied with the value of the return code variable. In other words, the response field in the M5000 CC User application call window will contain the value of the return code variable. This execution mode may be very useful if you want to provide the agents with "default" answers.
- ***[Do not pre-supply the answer]*** radio button: the execution of the node will never be omitted, the node will therefore always be executed and the response will be pre-supplied with the value of the return code variable, even if this has already been assigned (before its execution).

These options are not language-dependent.

Comments: There are 3 ways to assign a return code:

- use it as a return code in another node
- assign it using the "Assignment" node (see § 13.2.4.7)
- give it an initial value

Scripts written in versions earlier that V30A04 will keep their behavior after the M5000 CC File Structure update procedure. This means that the question nodes will keep their omission property if their return code variable is a global variable, and not if it is a local variable. None of these existing nodes will have the "pre-supplied response" property.

{Question} field:

This text will appear in the User Interface of the agent as a comment relative to the question asked to the caller.

Enter the question in this text box; it must not be longer than 255 characters. The text can contain multiple lines of text (you must press **CTRL + ENTER** to move to the next line). The Question is wrapped as the user types text extending beyond the text box.

***{Answer(s)}* field:**

After execution of this node, the agent will be reminded of the answer given by the caller by means of a sentence. This sentence is composed of three parts: a prefix, the answer itself and a suffix.

For example, if the answer to a Numeric node is ″13", the prefix "The client wants" and the suffix is "tins of product", the agents will see the phrase "The client wants 13 tins of product" displayed.

Enter your "Prefix" and "Suffix" where applicable. They must not be longer than 255 characters each.

***{Notes}* field:**

This text will appear in the User Interface of the agent as a comment relative to the question asked to the caller. This comment is typically composed of constraints on the answer to receive (For example, the answer to an "AlphaNum" node could have to be one of the "Alpha", "Beta" and "Gamma" strings: this should be written in the Notes).

Enter the question in this text box; it must not be longer than 255 characters. The Notes can contain multiple lines of text (Press ***CTRL + ENTER*** to move to the next line). The text is wrapped as the user types text extending beyond the text box.

13.2.5.2 DESCRIPTION OF THE "ALPHANUM" NODE

Description

The "AlphaNum" node  corresponds to an agent's question to the caller. The expected answer to this question is a sequence of alphanumeric characters.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "AlphaNum" node, the "Return code variable" must be String". The value assigned to this variable after the execution of this node will be the answer given to the question.

Select text language: A specific part has to be written for each language (see § 13.2.5.1.2) of the Service version. Select each language from the dropdown list and fill in the corresponding specific part.

Specific part: entries in: <Selected language>

This part has the structure common to all question nodes (see § 13.2.5.1.2).

13.2.5.3 DESCRIPTION OF THE "MCQ" NODE

Description

The "MCQ"node  corresponds to a question asked by the agent to the caller. The answer to this question has to be selected from a set of available choices.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "MCQ" node, the "Return code variable" must be "Numeric". The value assigned to this variable after the node execution will be the index of the selected choice.

Formally, a return code value of "Nothing" corresponds to the "No answer" tab, and a value of i (between 1 and 12) corresponds to tab "i".

Note: If you decide to store the "Return code variable" in the Statistics while the No answer tab is selected, the Null value will be saved in the field corresponding to this global variable in the Statistics when the node is executed.

Select text language: A specific part has to be written for each language (see § 13.2.5.1.2) of the Service version. Select each language from the dropdown list and fill in the corresponding specific part.

Specific part: entries in: <Selected language>

This part follows the structure common to all question nodes for the "Question" and "Notes" parts (see § 13.2.5.1.2). It differs from the other Question nodes in its ***{Answer}*** part.

In the ***{Number of choices}*** field, enter a number between 2 and 12. Then for each choice available (corresponding to an active tab), you may specify the parameters in the ***{answer(s)}*** part.

- the text that will appear in the User Interface of the agent as the choice selected by the caller. For each choice, click its tab and type its text in the ***{Text of this choice}*** text box.
- a comment relative to the choice. For each choice, click its tab and type its text in the ***{Associated phrase}*** text box.

13.2.5.4 DESCRIPTION OF THE "DATE" NODE

Description

The "Date" node  corresponds to an agent's question to the caller. The expected answer to this question is a value of "Date" type.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "Date" node, the "Return code variable" must be "Date". The value assigned to this variable after the execution of this node will be the answer given to the question.

Select text language

A specific part has to be written for each language (see § 13.2.5.1.2) of the Service version. Select each language from the dropdown list and fill in the corresponding specific part.

Specific part: entries in: <Selected language>

This part has the structure common to all Question nodes (see § 13.2.5.1.2).

13.2.5.5 DESCRIPTION OF THE "NUMERIC" NODE

Description

The  "Numeric" node corresponds to an agent's question to the caller. The expected answer to this question is a value of "Numeric" type.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "Numeric" node, the "Return code variable" must be "Numeric". The value assigned to this variable after the execution of this node will be the answer given to the question.

Select text language: A specific part has to be written for each language (see § 13.2.5.1.2) of the Service version. Select each language from the dropdown list and fill in the corresponding specific part.

Specific part: entries in: <Selected language>

This part has the structure common to all question nodes (see § 13.2.5.1.2).

Besides, the range of the expected numeric value can be specified:

- In the **Lower bound text box you can enter the minimum acceptable value for the expected answer.**
- In the Upper bound text box you can enter the maximum acceptable value for the expected answer.

  These two values will appear in the agent's User Interface during the node execution. They can be any number ranging from -3.402823E38 to - 1.401298E-45 for negative values and from 1.401298E-45 to 3.402823E38 for positive values.

13.2.5.6 DESCRIPTION OF THE "INFO" NODE

Description

The "Info" node  displays textual information on the agent's screen. The ability to insert variables into the text allows this information to depend on the value of these variables at the node execution time.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "Info" node, the "Return code variable" must be "Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.3 VALUES OF THE "INFO" RETURN CODE VARIABLE

Value	Description
0	No error (No error)
94	The information to display contains a non initialized variable (The information to display contains a non initialized variable)

Specific part

1 ***{Select language}*** field:

A specific part has to be written for each language (see § 13.2.5.1.2) of the Service version. Select each language from the dropdown list and fill in the corresponding specific part.

0 Frame where the info will appear:

- If the information you want to communicate to the agent is rather short, like a phone number or the name of the person to call, you can select the ***[Display in permanent frame]*** option. The comment will be displayed in a small frame at the top of the agent's screen.
- If you want to give the agent a longer explanation, you can select the ***[Display in question frame]*** option. The comment will be displayed in a bigger frame at the bottom of the agent's screen.

0 ***{Comments}*** field: Elements in: <Selected language>

For each language selected, enter the information text in the ***{Comment}*** box. Variables can be included in the comment. At run time, they will be textually replaced by their value.
To include a variable:

- Press ***[F2]***.
- Select an existing variable from the appearing list.
- Click ***[Validate]***.

Note: *Variables appear in bold underlined format in the **{Comment}** text box.*

13.2.5.7 DESCRIPTION OF THE "ADDRESS" NODE

Description

The "Address" node  stores the different components of an address in variables for later use.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "Address" node, there is no Return code variable.

Specific part

For each address part you want to store, select the corresponding check box, and then select an existing variable of the correct type in the corresponding drop-down list.

13.2.5.8 DESCRIPTION OF THE "MANUALLANGUAGE" NODE

Description

The "ManualLanguage" node  allows the agent to select one of the available languages to be used in the rest of the tree execution.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "ManualLanguage" node, the "Return code variable" must be "String". After the execution of this node, the name of the language selected by the agent will be assigned to this variable.

Specific part

You can enter an initial language by selecting an item in the ***{Choose an initial value}*** drop-down list. This value can be either:

- one of the languages defined for the script, or
- an existing variable of "String" type containing the name of the language at run-time.

13.2.5.9 DESCRIPTION OF THE "AGENTTRANSFERCALL" NODE

13.2.5.9.1 GENERAL PRESENTATION OF THE "AGENTTRANSFERCALL" NODE

Description

The "AgentTransferCall" node  enables agents to transfer calls. The difference between this node and the "TransferCall" node (see § 13.2.2.7) is that this transfer is requested by an agent, instead of by the M5000 CC Media Server, and it is therefore a "User Interface" type node (see § 13.2.5.1.1). One other difference is the possibility of carrying out a conference with another agent.

Execution in the web portal

An agent using the portal always has **total control on the transfer process**: the system neither dials nor transfers a call without user intervention.

As a consequence, all parameters in the **{Options}** tab of this node are ignored, as well as the **{Preferences}** tab: the type of transfer (blind or with consultation call) is chosen by the agent, the operation can be terminated as a transfer or a conference, the script is always transferred with the call, the call is never transferred immediately and the system does not select the destination of the transfer

When this node is executed, a message appears in the question frame of the script window, requesting the agent to place the call (transfer to extension or to particular agent) or to select a destination agent from the list (transfer to service member).

The list of destination agents is visible in the Directories application, when clicking on the corresponding button. At any time, this list is updated to show the potential agents to whom the current call could be transferred.

For instance, if an "AgentTransferCall" node with destination set to a service member and a particular team is specified, the destination agents list in the Directories application will only show the members of this team.

In this destination agents list, an icon next to each agent indicates whether she/he is available for transfer, and the agent handling the current call can only dial to her / him if so.

Execution in the User application

The choice of agent for call distribution is independent of the "Use agent script" option defined in the node.

It does not therefore matter which option is chosen, since the agent logs on through his telephone set or agent application (M5000 CC User or User API).

Consequently, if an agent logged on via his telephone set is selected and the option "Use agent script" has been selected, the call will be transferred irrespective of the option mentioned above.

Here are some of the characteristics of the transfer:

- It can be monitored or transferred with consultation (the transfer will only be made after getting an answer from the agent).
- It can be immediate, the agent will not have to press the ***[Transfer call]*** button.
- The system can choose the person to whom the transfer will be made following the same rules as for the "TransferCall" node.

If the **{Use agent script}** field in the **{Options}** tab is set to **"No"**, only the call will be transferred, not the script (the agent to whom the transfer is made will not see the information on his screen).

Impact on the execution of the tree

If this node is executed, 2 things can happen: depending on whether the ***[Transfer immediately]*** option is checked or not, the transfer is either carried out immediately, or a ***[Transfer]*** button is presented to the agent, to be pressed whenever he wants. Script execution is not blocked, so the agent can execute some other nodes before pushing the transfer button.

Transfers can be blind or with a consultation call.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "TransferCall" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.4 VALUES OF THE "AGENTTRANSFERCALL" RETURN CODE VARIABLE

Value	Description
0	Call successfully transferred (transfer activated immediately) or transfer button successfully activated (transfer activated by the agent) Call successfully transferred (transfer activated immediately) or transfer button successfully activated (transfer activated by the agent)
-2	Release call detection
-3	No logged user able to answer the call
-4	Selected agent is logged out
-6	Selected agent is not in the Service
-7	Unable to start agent script
-13	Invalid call status
-14	User application M5000 CC User has not the call control
-15	Call is in conference
-16	Transfer cancelled by the user
-17	Global variables could not be exported

Specific part

1 **{Destination}** tab:

There are three different transfer destinations, defining three types of transfer with specific parameters: a transfer to an extension, to an agent or to a Service member or to a phone extension.

Transfer to a phone extension:

To select this type of transfer, check ***[Extension]***

There are several possibilities to select an extension in the ***[Extension]*** frame:

- Right-click the text box and select **[Variable]**. You can then select an existing variable of String type containing the extension at run-time by double-clicking a list item.
- Right-click the text box and select **[Server Object]**. You can then select one of the extensions defined in the system by double-clicking a list item.
- Right-click the text box and select **[Insert Value]**. You can then enter an extension number using the keyboard. Validate your input by pressing ***Enter***.

Transfer to agent:

To select this type of transfer, check ***[Agent]***

In the selected ***{Agent}*** frame, specify an agent in one of the following ways:

- Right-click the text box and select **[Variable]**. You can then select an existing variable of String type containing the agent identifier at run-time by double-clicking a list item.
- Right-click the text box and select **[Server Object]**. You can then select the identifier of an agent defined in the system by double-clicking a list item.

Transfer to the best Service member available:

To select this type of transfer, check ***[Service Member].***

In the **{Service member}** frame, specify whether you want the destination agent to be a member of one team or more teams:

- Right-click in the text box and select **[Yes]** or **[No]**.

- Right-click the text box and select **[Variable]**. You can then select a variable of Numeric type, containing the value at run-time, by double-clicking on a list item. A zero value means **Yes**, and any other numeric value means **[No]**.

If you selected **Yes** or a variable, you have to specify the teams of interest.

- Right-click in the ***{Selected teams}*** list box and select **[Add variable]**. You can then select an existing variable of String type containing the team name at run-time by double-clicking a list item.
- Right-click in the ***{Selected teams}*** list box and select **[Add Server object]**. You can then select the name of a team defined in the system by double-clicking a list item.
- Finally, you must specify whether the agent has to belong to ***[At least one of the selected teams]*** or to ***[All selected teams]*** by checking the corresponding option.

0 **{Required abilities}** tab:

If the targeted Service member has to satisfy some criteria, these can be defined in the corresponding tab.

In the ***{Required language level}*** specify the minimum language level (value between 0 and 99) required for each agent in each of the languages defined in the Service version.

The required language level may be specified or modified in several different ways:

- Right click in the ***{Required language level}*** field and select the **{Define level}** menu. The "Level selection" window opens. Enter the required value and press ***[Enter].*** Only numerical values between 0 and 99 are accepted.
- Right click in the ***{Required language level}*** field and select the ***{Variable}*** menu. A "numeric" type variable may be selected. This variable will contain the required level at run-time.
- To increase the language level of a unit, right click in the ***{Required language level}*** field and select ***[Increase level].***
- To reduce the language level of a unit, right click in the ***{Required language level}*** field and select ***[Reduce level].***

In the ***{Required skills level}*** list box, specify the skills and corresponding knowledge levels required of the agent.

To add a skill to the list:

- Right-click in the list box and select **[Add variable]**. You can then select an existing variable of String type containing the skill name at run-time by double-clicking a list item.
- Right-click in the ***{Selected teams}*** list box and select **[Add Server object]**. You can then select the name of a skill defined in the system by double-clicking a list item.

To attribute a required level to a skill:

- Right click on the name of a skill in the Required skill levels and select the **[Define level]** menu. The **"Level selection"** window opens. Enter the required value and press ***[Enter].*** Only numerical values between 0 and 99 are accepted.
- Right click on the name of a skill in the ֍☼♏❑◆♓❒♏♎ ♦&♓●● ●♏❖♏●♦❝ and select the [Add variable] menu. A "numeric" type variable may be selected: it will contain the skill level at script run-time.
- To increase the skill level of a unit, right click on the name of the corresponding skill and select **[Increase level]**
- To reduce the skill level of a unit, right click on the name of the corresponding skill and select **[Reduce level]**

0 **{Preferences}** tab:

If more than one agent matches the specified languages level and skills level defined so far, it is possible to define preferences in order to select the 'best' agent among those who match the requirements.

You can enable the preferences definition by right-clicking the ***{Preferential agent based on skill and language}*** text box and then selecting **[Yes]** or **[No]**.

Three preferences can be defined. The preferred agent is the one who has the highest value for the first preference. The second preference is used only if more than one agent has the "High" value for the first preference, and so on. Each preference is a list of agent capabilities (languages + skills). If a list contains more than one ability, the corresponding degree is computed as the sum of the item levels for each agent.

0 You can add a skill or the languages in one of the preference lists by right-clicking the list and selecting the desired capability.

0 **{Options}** tab:

- ***{Type of transfer}*** field:

If you check ***[Blind Transfer]***, the call is transferred from an agent to another in one step.

On the other hand, if you check ***[Transfer with Consultation call]***, the transfer from an agent to another is done in two steps. In the first step, the transfer is initiated, the phone rings on the chosen agent's phone. In the second step, the first agent (having spoken with the chosen agent or not) transfers the call (the second agent is on the line with the caller).

The Transfer with Consultation call type is used to set up a conference. This is also performed in two steps. In the first step, the conference is initiated, the phone rings on the chosen agent's phone. In the second step, the first agent (having spoken with the chosen agent or not) transfers the call (the second agent is on the line with the caller).

- ***{Transfer mode}*** field:
  - ***[Transfer]*** radio button: this mode enables the agent to initiate a transfer to another agent.
  - ***[Conference]*** radio button: this mode enables the agent to set up a conference between himself, the caller and the other agent, but leaves him the opportunity of transferring the call to the second agent. If this mode is selected, the Conference option will be checked by default in the User interface (see § 13.2.5.9.2).
- ***[Transfer immediately]*** checkbox:

  Check this if you want the call to be transferred when the node is executed. Clear this if you want the call to be transferred at agent's convenience (later during script execution). In order to execute the transfer, the agent needs to push on a transfer button.
- ***[The system selects the transfer agent]*** checkbox:

  Check this if you want the system to select the agent to transfer to. Do not check this option if you want to leave the choice to the agent.
- ***{Use agent script}*** fields:

  Select **Yes** if you want the user interface to appear on the screen of the destination agent upon call transfer. In this case, a tree must be defined as the starting tree for the User Interface.

  You can set the value of this option in one of the following ways:
  - Right-click in the text box and select **[Yes]** or **[No]**.
  - Right-click the text box and select **[Variable]**. You can then select a variable of "Numeric" type containing the value at run-time by double-clicking on a list item. A zero value means **Yes**, and any other numeric value means **[No]**.

13.2.5.9.2 THE "AGENTTRANSFERCALL" NODE IN THE APPLICATION M5000 CC USER

This node allows the agent to transfer the call and all information relating to it to another agent.

Configuration on the agent's screen

This node appears in the question box (see Fiche U-501) in a M5000 CC User application's "voice" window.

The configuration depends on the options which are set:

- ***[Transfer]*** or ***[Conference]*** mode radio buttons and
- ***[Transfer script]*** checkbox.

  The "Inbound Call" window may appear in 4 different ways:
  - transfer without script transfer mode,
  - transfer with script transfer mode,
  - conference without script transfer mode,
  - conference with script transfer mode,

13.2.5.10 DESCRIPTION OF THE "DIALOG" NODE

Description

The "Dialog" node  can be used to display many kinds of web forms to the agent, which can show information collected by the script and request multiple inputs from the agent.

It is only executed if the agent is connected using the web Portal. In the M5000 CC User application this node is skipped.

Typical use cases

Unlike most other nodes in the User Interface Nodes add-on module, the Dialog node opens a wide range of possible uses. Here are some typical examples.

- Complex input form

A single Dialog node is capable of displaying multiple script-dependent values on the same web page, and gather agent input from several places of this page.

Using this node, all customer data can thus be gathered on a unique page, allowing the agent to conveniently access and complete all fields in one step.

- CRM card

A Dialog node can be used to open up a CRM card at the desired step within a User Interface tree of the script.

It is therefore possible to perform any operations in the agent script before showing the CRM card. Furthermore, the corresponding URL can include script variables, and be different for each language defined in the service version.

In addition, the CRM card can be displayed in the question frame area of the Portal script page or in the permanent frame. In the first case the script blocks on the CRM card. In the second case however, it becomes possible, in parallel with the CRM card, to continue the script execution and show subsequent User Interface nodes in the question frame.

- Web application initialized by script

Since any type of URL can be opened by a Dialog node, the target page or web application can leverage server-side capabilities and interact with the agent on its own.

When the page is loaded, script variables can be provided using two mechanisms: in the URL itself or by manipulating HTML elements on the page.

For example, a Dialog node could open a page listing all product orders already placed by the caller. This page would perform a database query using parameters specified in the URL, and would then dynamically generate a web page displaying the query results in a table.

Multi-language support

This node can be configured to display a language-specific web page, by specifying a different URL for each language defined in the service version.

Depending on the mechanism used to obtain the web pages, these URLs could refer to the same page that is localized during generation, such as

http://some.server.com/resource?lang=fr

http://some.server.com/resource?lang=en

The URLs could also point to different (possibly static) pages, for instance

http://some.server.com/resourceInFrench.html

http://some.server.com/resourceInEnglish.html

In all cases, all pages obtained from the different URLs are supposed to have a common structure. In particular, some HTML elements with specific identifiers must be present on all language-dependent pages so that they can be used to display some values or get input from the agent.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-440).

Generic part

In the generic part (see § General description of the "generic" part of a node editing window) of the "Dialog" node, the "Return code variable" must be "Numeric". After the execution of this node, the return code associated with the element clicked by the agent will be assigned to this variable.

Specific part

- **{URL}** tab:

By default, the ***[Show in permanent frame]*** option is not checked and the web page is displayed in the question frame area of the agent script window.

Check this option to display the web page in the permanent frame area of the agent script window. In this case, the script execution resumes automatically as soon as the page is displayed: no further interactions with the script can occur on this page. For this reason, the {Assigned variables} and **{Return codes}** tabs are not available.

If the ***[Show in permanent frame]*** option is un-checked, it is recommended to specify at least one HTML element in the **{Return codes}** tab, otherwise the script execution will stop on this node. This is indicated by a compilation warning message (and not an error, as blocking on a Dialog node might be the desired behavior).

The ***{URL}*** field is the only language-dependent option that must be configured in the Dialog node. Select each language defined in the service version and type the corresponding location of the web page in the ***{URL}*** field.

The same URL may be specified for multiple languages, but if the ***{URL}*** field is empty for one of the languages defined the script does not compile.

In the ***{URL}*** field, script variables may be inserted by pressing the ***[F2]*** key.

- **{Displayed values}** tab:

This tab specifies how to modify the web page(s) pointed to by the URL(s), using script-dependent data. A web page displayed to the agent through the Dialog node should therefore be considered as a **template** that is adapted and completed using the different elements specified in the **{Displayed values}** tab.

Use the ***[Add]***, ***[Edit]*** and ***[Remove]*** buttons to manage the list of script-dependent values to display on the web page.

Each element of this list allows one of the following changes to be performed on the web page.

Data: the HTML element specified in the ***{HTML element ID}*** field is changed so that its contents (or inner HTML) is set to the value indicated in the ***{New value}*** box.

Attribute: the particular attribute (named after the ***{Attribute to set}*** box) of the HTML element specified in the ***{HTML element ID}*** field is set to the value indicated in the ***{New value}*** box.

Remove: the HTML element specified in the ***{HTML element ID}*** field is removed from the web page.

In all cases, an element with "id" attribute corresponding to the ***{HTML element ID}*** field must exist on all language-dependent pages with addresses indicated in the ***{URL}*** field.

For the **Data** and **Attribute** display methods, the value specified in the ***{New value}*** box can be composed of free text as well as script variables, inserted by pressing the ***[F2]*** key.

- **{Assigned variables}** tab:

In this tab, script variables are associated to HTML input elements in the web page(s) pointed to by the URL(s), allowing the agent to assign those variables to the values of the corresponding input elements.

If a variable has already been assigned before the execution of this node (such as with an initial value or through a previous Assignment or GetRecords node), the web page input is pre-supplied with the current value.

Use the ***[Add]***, ***[Edit]*** and ***[Remove]*** buttons to manage the list of variables assigned from the web page. Each variable is associated to a particular ***{HTML element ID}*** field value which identifies an HTML input element on the page.

The supported variable types are **String**, **Numeric** and **Date**. When the Dialog node is executed, the value entered by the agent must be convertible into the corresponding variable type, otherwise the assignment will fail.

For each variable, an element with "id" attribute corresponding to the ***{HTML element ID}*** field must exist on all pages obtained from the language-dependent ***{URL}*** fields. The list of supported HTML elements is the following.

Input elements of **text** type and **textarea** elements can be used to assign any type of variable, provided that the value entered by the agent is convertible into this type.

Input elements of **radio** and **checkbox** types can be used to assign Numeric variables, with the convention that 0 is equivalent to false and 1 is equivalent to true.

Select elements can be used to assign String variables. Nested **option** elements must be present on the HTML page; the select element (and the script variable) receives the **value** attribute of the selected option.

- **{Return codes}** tab:

This tab lists the HTML elements on the page that, when clicked by the agent, terminate the execution of the Dialog node and assign a particular value to the return code variable.

Use the ***[Add]***, ***[Edit]*** and ***[Remove]*** buttons to manage the list of selectable return code values. Each code is associated to a particular ***{HTML element ID}*** field value which identifies a clickable HTML element (such as a button) on the page.

At least one return code should be specified if the web page is displayed in the question frame area, to avoid blocking the script on this node (see ***{URL}*** tab).

Construction of the web pages

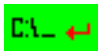
When designing a web page that will be displayed through the execution of a Dialog node, it is critical to specify an identifier to all elements that interact with the node, by setting a unique value to the **id** attribute of these elements.

In most HTML editors, web controls can be dragged from a Toolbox and dropped on the page. At this point a unique value is usually assigned to the id attribute of the corresponding HTML element.

If this is not the case, the id attribute must be set manually, either by editing the corresponding entry in the Properties list of the element or by switching from Design to HTML mode and adding the id attribute.

13.2.5.11 DESCRIPTION OF THE "SHELLCOMMANDLINE" NODE

Description

The "ShellCommandLine" node  executes a program (exe, bat, …) on the platform where the web Portal is running. Notice that the "MitelLaunch" file, available in path "M5000CC\tools" will be launch in order to execute this Shell Command Line (no Java Applet is used). If this file is not installed on Client PC, look for on CD ROM. An associated file "MiteLaunch.reg" must be registered in registery database. Check,after opening this file, The command "shell\open\command" must match with "M5000cc\tools" path.The ability to insert variables into the command line allows this command to depend on the value of these variables at the node execution time.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "ExecuteCommandLine" node, the "Return code variable" must be "Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.5 VALUES OF THE "EXECUTECOMMANDLINE" RETURN CODE VARIABLE

Value	Description
0	No error (No error)
-1	Execution cancelled (Execution cancelled by user)
-2	Execution failed: unknown error occurs (Execution failed : unknown error occurs)
94	The information to display contains a non initialized variable (The information to display contains a non initialized variable)

Specific part

1 ***{Select language}*** field:

A specific part has to be written for each language (see § 13.2.5.1.2) of the Service version. Select each language from the dropdown list and fill in the corresponding specific part.

0 ***{Command line}*** field: Elements in: <Selected language>

For each language selected, enter the command line text in the ***{Command line}*** box. Variables can be included in the command line. At run time, they will be textually replaced by their value.
To include a variable:

- Press ***[F2]***.
- Select an existing variable from the appearing list.
- Click ***[Validate]***.

Note: *Variables appear in bold underlined format in the **{Command line}** text box.*

0 ***{Immediate execution}*** field:

The execution of the "ExecuteCommandLine" node can be performed without interacting with an agent. To do so, an Immediate execution checkbox is available. When the box is checked, the command line associated with the node (see Sheet U-441) is immediately executed to the agent during the User script execution.

0 ***{Wait end of execution}*** field:

The execution of the "ExecuteCommandLine" node can wait the end of the command line execution to terminate the node. When the box is checked, the User script execution waits the closing of the application that is open with the command line associated with the node (see Sheet U-441).

Note: The execution of this node in the User application is skipped. You have to use Portal in order to have execution.

13.2.6 "WEB" NODES MODULE

13.2.6.1 DESCRIPTION OF THE "WEB" NODE MODULE

The nodes of the "Web" module  are used in Web trees (inbound Services only). They allow interactions between the system and the web customer.

This module contains three nodes used to send or retrieve information via l'M5000 CC WebCall Service. The information exchange can be summarized to variables (in a similar way to the "SendUDP" and "GetUDP" nodes) and URL to redirect the web customers.

List of "Web" module  **nodes:**

-  GetData (see § 13.2.6.2)
-  PushData (see § 13.2.6.3)
-  NavigateToURL (see § 13.2.6.4)
-  Dialog (see §13.2.6.5)

13.2.6.2 DESCRIPTION OF THE "GETDATA" NODE

Description

The  "GetData" node is used to get and manage messages sent by M5000 CC WebCall Service to change variable values.

Description

This node blocks the script execution until variable values are sent from the M5000 CC WebCall Service through the SendData() method. The variables to set are specified as arguments of this method and are therefore not specified as parameters of the GetData node.

It is possible to indicate a timeout that will end the node if no data has been received. The timeout value can be dynamic by the use of a variable. It can also be ignored by defining a negative value.

The requests sent by M5000 CC WebCall Service are stacked in an M5000 CC Media Server buffer while waiting to be handled by a "GetData" node. When the script execution enters in such a node, the variables of

one request are updated. The system must encounter new "GetData" nodes to handle the next requests. If a variable changed by M5000 CC WebCall Service does not exist in the script or is not accessible (tree variable), the system ends the node and a specific error code is generated.

The script designer can choose a local or global variable (“Numeric” type) to receive the value that will be specified in the "SendData" method of M5000 CC WebCall Service. This variable is used to identify the customer's action and to perform the corresponding operation in a branch or sub-tree of the script.

Invocation from WebCallUserInterface

It is possible to start a Web Server tree and execute a GetData node from the web application (site) **WebCallUserInterface**.

The URL to use has the following form:

http://.../WebCallService/UserInterface/Script/Start?service=service_name&var=value...

The query string in this URL indicates the service name ("service" parameter) as well as the values of some String variables that are local to the tree containing the GetData node.

By convention, the request is sent to the Production version of the service, and the request identifier of the GetData node is set to 0.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "GetData" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.6 VALUES OF THE "GETDATA" NODE RETURN CODE VARIABLE

Value	Description
0	Data have been received on the socket to which the run is associated and all variables have been assigned Data have been received on the socket associated with the run and all variables have been assigned
- 1	The node timeout has expired (Node timeout has expired).
- 2	The M5000 CC WebCall Service has sent a disconnection notification (The M5000 CC WebCall Service has sent a disconnection notification).
- 3	The socket connection timed out (M5000 CC WebCall Service ‘Alive’ notifications are missing) The socket connection timed out (M5000 CC WebCall Service ‘Alive’ notifications are missing).
- 4	Data have been received on the socket to which the run is associated but error(s) occurred during the assignment Data received on the socket associated with the run but errors occurred during assignment
-2147483648	A synchronization has been requested A synchronization has been requested
- 500	Invalid type or inaccessible variable for the Assignment id Invalid type or inaccessible variable for the Assignment id
- 501	Web socket no more associated to the Run Web socket no longer associated with the Run

As the "GetData" node may be the only asynchronous node in the web script, the initiation cannot abort due to a bad timeout. If it occurs (i.e. if the variable is not initialized), the node is initialized with a default timeout (30 sec) and a message is logged in the main window.

1 ***{Specific request ID part}*** field:

The Request ID specified in M5000 CC WebCall Service messages can be stored in a “numeric” type variable. Select an existing variable from the drop-down list.

0 ***{Timeout (seconds)}*** field:

This drop-down list is used to define the maximum amount of time while the execution stays in the node.

The timeout can be defined by typing its numeric value in the combo box or by selecting a numeric variable from the drop-down list. The node timeout can be ignored by specifying a negative value (constant or via a variable).

13.2.6.3 DESCRIPTION OF THE "PUSHDATA" NODE

Description

The "PushData" node 

is used to send variable data to M5000 CC WebCall Service.

It is a **synchronous** node used to send variable values to M5000 CC WebCall Service. This node specifies the local and global variables which must be updated in M5000 CC WebCall Service. The data of a variable transmitted are the name, type (string, numeric, etc.), value and “PushData” Request ID used to synchronize M5000 CC WebCall Service with the script.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "PushData" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.7 VALUES OF THE "PUSHDATA" NODE RETURN CODE VARIABLE

Value	Description
0	The data sending has succeeded (data sent successfully)
- 520	Invalid Request Id variable (impossible to get the value) Invalid Request Id variable (impossible to get the value)
- 521	Invalid variable defined in the node (impossible to get the value) Invalid variable defined in the node (impossible to get the value)
- 522	Error in sending Data (log message with error code) Error in sending Data (log message with error code)
- 523	Socket no more associated to the Run socket no longer associated with the Run

1 ***{Specific request ID part}*** field:

Enter a number in the Request Id combo box to identify the sent request, or select an existing variable of numeric type in the drop-down list.

0 ***{Pushed variables}*** field:

This list enumerates the variables which will be sent to M5000 CC WebCall Service.

The "Data" field of TCP messages exchanged between the contact center and the customers is a string containing parts enclosed in square brackets. The ordered list of variables corresponding to the "Data" field of the TCP message is managed as follows:

- A variable can be added using the ***[Add]*** button (variable added at the end of the list) or by selecting a variable from the list and clicking ***[Insert]*** (the new variable will be added before the selected variable). You can then select an existing variable from the list that appears, by clicking it and then clicking the ***[OK]*** button, or by double-clicking it.
- A variable can be removed from the list by selecting it and clicking the ***[Delete]*** button.

13.2.6.4 DESCRIPTION OF THE "NAVIGATETOURL" NODE

Description

The "NavigateToURL" node 
is a "synchronous" node that is used to redirect a customer to another page. When the M5000 CC WebCall Service client web page receives the request, it may display the URL in a frame or a specific window. The parameters which must be defined in the node are one URL address per language defined in the Service and the name of the frame or a window that must be updated.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "NavigateToURL" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.8 VALUES OF THE "NAVIGATETOURL" RETURN CODE VARIABLE

Value	Description
0	The data sending has succeeded (data sent successfully)
- 510	Invalid variable for the frame name (impossible to get the value) Invalid frame name defined in the node (impossible to get the value)
- 511	Invalid URL variable (impossible to get the value) Invalid URL variable (impossible to get the value)
- 512	Error in sending data (log message with error code) Error in sending Data (log message with error code)
- 513	Socket no more associated to the Run socket no longer associated with the Run
- 514	No current language defined No current language defined

Specific part

1 ***{Frame name}*** field:

Enter the name of the frame where the page will be displayed in the ***{Frame name}*** combo box, or select an existing variable of string type in the drop-down combo.

You can either enter the name of an existing frame of your web page or any of the arguments below interpreted by the M5000 CC WebCall Service client web page:

Tableau 13.9 FRAME CONFIGURATION ARGUMENTS

Argument	Comment
"_self"	Show in the current frame
"_parent"	Show in the parent frame
"_top"	Show in the topmost frame
"_blank"	Show in a new unnamed top-level window
name	Show in a new top-level window named name

Note: The name of the frame is common to all languages.

0 ***{URL}*** field:

For each language defined in the Service, you must define a URL address that will indicate to the web page where the web browser must be redirected. The URL address can be typed directly in the URL combo box or can be stored within a variable (local, global or argument). This variable has to be selected in the URL combo box.

13.2.6.5 DESCRIPTION OF THE "DIALOG" NODE

Description

The  "Dialog" node is used to display a web form page and collect data provided by the

correspondent.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "Dialog" node, the "Return code variable" must be Numeric. After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.10 VALUES OF THE "DIALOG" RETURN CODE VARIABLE

Valeur	Description
0	Form displayed and data collected successfully.

Specific part

- **{URL}** tab

The ***{URL}*** field is the only language-dependent option that must be configured in the Dialog node. Select each language defined in the service version and type the corresponding location of the web page in the ***{URL}*** field.

The same URL may be specified for multiple languages, but if the ***{URL}*** field is empty for one of the languages defined the script does not compile.

In the ***{URL}*** field, script variables may be inserted by pressing the ***[F2]*** key.

- **{Displayed values}** tab

This tab specifies how to modify the web page(s) pointed to by the URL(s), using script-dependent data. A web page displayed to the correspondent through the Dialog node should therefore be considered as a **template** that is adapted and completed using the different elements specified in the **{Displayed values}** tab.

This model typically contains **identifiers between double curly braces** which are dynamically replaced by script-dependent values.

Use the ***[Add]***, ***[Edit]*** and ***[Remove]*** buttons to manage the list of script-dependent values to display on the web page.

The model part specified in the ***{Template key}***, including double curly braces, is replaced by the value indicated in the ***{New value}*** area.

Example: if the model contains the following line:

Call identifier: {{CallId}}.

The template key is CallId and the node execution gives for instance:

Call identifier: EI15-C22345.

Note : if the value to display contains HTML tags, **triple** curly braces must be used instead of double curly braces around the corresponding template key in the model.

- **{Assigned variables}** tab

In this tab, script variables are associated to parts of the web page(s) pointed to by the URL(s), allowing the correspondent to assign those variables to the values of the corresponding input elements.

If a variable has already been assigned before the execution of this node (such as with an initial value or through a previous Assignment or GetRecords node), the web page input is pre-supplied with the current value.

Use the ***[Add]***, ***[Edit]*** and ***[Remove]*** buttons to manage the list of variables assigned from the web page. Each variable is associated to a particular ***{Request data key}*** field value which identifies a model part to modify using the same procedure as described in the **{Displayed values}** tab.

The supported variable types are **String**, **Numeric** and **Date**. When the Dialog node is executed, the value entered by the correspondent must be convertible into the corresponding variable type, otherwise the assignment will fail.

For each variable, an element with "name" attribute corresponding to the ***{Request data key}*** field must exist on all pages obtained from the language-dependent ***{URL}*** fields. In addition, these elements must be contained in a form (HTML **form** tag) with **action** attribute pointing to the following URL:

/WebCallService/UserInterface/Script/Next

Furthermore, a hidden field (**input** tag with **hidden** type) must exist on this form, with **value** attribute set to the "{{_session}}" string, allowing to keep the web session context and to terminate the Dialog node correctly.

Sample model

The following model can be used to display a question containing HTML tags ("Question" key) and to collect a

variable value ("Answer" key):

```
<form method="post" action="/WebCallService/UserInterface/Script/Next">
  <p>{{{Question}}}</p>
  <p>Answer to this question:
    <input type="text" size="100" name="Answer"/>
    <input type="hidden" name="session" value="{{_session}}"/>
  </p>
  <p>
    <input type="submit" value="OK"/>
  </p>
 </form>
```

Name and location of model files

All model files must have the "mustache" extension.

They must be located in the following subfolder of the product installation directory:

WebCallService/UserInterface/Views/Script/

13.2.7 "E-MAIL NODES " NODES MODULE

It is important to underline the fact that when the e-mail has left the in-box, the operations performed by the e-mail nodes are no longer possible on the in-box: any e-mail node executed thereafter will systematically return an error (return code is not 0) upon execution of the distribution node because in this case, it is not a direct operation on the e-mail.

13.2.7.1 DESCRIPTION OF THE "E-MAIL NODES" ADD-ON MODULE

The nodes of the  "e-mail Nodes" module are used both in the "E-mail Server" and " e-mail User" trees. All nodes can be used in both E-mail Server and E-mail User trees, except the DistributeEmail node, which can only be used in an E-mail Server tree.

List of "e-mail Nodes" module  **nodes:**

-  DistributeEmail (see § 13.2.7.2)
-  ReplyEmail (see § 13.2.7.3)
-  ForwardEmail (see § 13.2.7.4)
-  DeleteEmail (see § 13.2.7.5)
-  CopyEmail (see § 13.2.7.6)
-  MoveEmail (see § 13.2.7.7)

13.2.7.2 DESCRIPTION OF THE "DISTRIBUTEEMAIL" NODE

Description

The  "DistributeEmail" node places the e-mail into the "pool" (see Sheet U-441) and makes it available to the agents through their M5000 CC User application. It can only be inserted in an e-mail server tree. M5000 CC distributes e-mails to the most appropriate agent, considering team membership, languages and skills as well as knowledge levels, as it is the case for calls. You can also target a particular agent who must handle incoming e-mails.

Like the "TransferCall" node, the "DistributeEmail" node will block the execution of the E-mail Server script during the time the e-mail is handled by an agent. As soon as the agent has finished (end of the E-mail User tree), the execution of the E-mail Server script continues. This means that other nodes can thus be executed after the DistributeEmail node, even another DistributeEmail node for instance.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "DistributeEmail" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.11 VALUES OF THE "DISTRIBUTEEMAIL" RETURN CODE VARIABLE

Value	Description
0	Message successfully distributed (Message successfully distributed)
-1	Global timeout reached (Global timeout reached)
-2	When the agent script starting failed three times (When the agent script starting failed three times)
-3	No defined user able to handle the message (No defined user able to handle the message)
-4	Agent logged out (Agent logged out)
-5	Agent not affected to the Service (Agent not affected to the Service)
-6	Agent unknown (Agent unknown)
-8	Agent script cancelled (Agent script cancelled)
-9	Agent script stopped (Agent script stopped)
-10	Agent script error (Agent script error)
-11	Agent disconnected during processing (Agent disconnected during processing)

Specific part

This part of the "DistributeEmail" node edition dialog box specifies parameters for the distribution of e-mails to agents.

1 **{Destination}** tab:

In the ***{Service member}*** frame, specify whether you want the destination agent to be a member of one team or more teams:

- Right-click in the text box and select **[Yes]** or **[No]**.
- Right-click the text box and select **[Variable]**. You can then select a variable of Numeric type, containing the value at run-time, by double-clicking on a list item. A zero value means **No**, and any other numeric value means **[Yes]**.

If you selected **Yes** or a variable, you have to specify the teams of interest.

- Right-click in the ***{Selected teams}*** list box and select **[Add variable]**. You can then select an existing variable of String type containing the team name at run-time by double-clicking a list item.
- Right-click in the ***{Selected teams}*** list box and select **[Add Server object]**. You can then select the name of a team defined in the system by double-clicking a list item.

Finally, you must specify whether the agent has to belong to ***[At least one of the selected teams]*** or to ***[All selected teams]*** by checking the corresponding option.

In the Selected agent frame, specify the agent to whom you want to distribute the e-mail:

- Right-click the text box and select **[Variable]**. You can then select a variable of String type containing the name of an agent at run-time by double-clicking on a list item.
- Right-click in the text box and select **[Server object]**. You can then select the name of an agent defined in the system by double-clicking a list item.

In case of distribution to a particular agent, the **{Required abilities}** tab is not available.

0 **{Required abilities}** tab:

This tab is used to define the "required abilities" which need to be satisfied by the the targeted Service member .

In the ***{Required language level}*** specify the minimum language level (value between 0 and 99) required for each agent in each of the languages defined in the Service version.

The required language level may be specified or modified in several different ways:

- Right click in the ***{Required language level}*** field and select the **{Define level}** menu. The **"Level selection"** window opens. Enter the required value and press ***[Enter].*** Only numerical values between 0 and 99 are accepted.
- Right click in the ***{Required language level}*** field and select the **[Variable]** menu. A "numeric" type variable may be selected. This variable will contain the required level at run-time.
- To increase the language level of a unit, right click in the ***{Required language level}*** field and select **[Increase level].**
- To reduce the language level of a unit, right click in the ***{Required language level}*** field and select **[Reduce level].**

In the ***{Required skills level}*** list box, specify the skills and corresponding knowledge levels required of the agent.

To add a skill to the list:

- Right-click in the list box and select **[Add variable]**. You can then select an existing variable of String type containing the skill name at run-time by double-clicking a list item.
- Right-click in the list box and select **[Add Server object]**. You can then select the name of a skill defined in the system by double clicking a list item.

To enter the required skill level

- Right click on the name of a skill in the ֍☼♏❑◆♓❒♏♎ ♦&♓●● ●♏❖♏●♦❝ and select the [Define level] menu. The "Level selection" window opens. Enter the required value and press ***[Enter].*** Only numerical values between 0 and 99 are accepted.
- Right click on the name of a skill in the ֍☼♏❑◆♓❒♏♎ ♦&♓●● ●♏❖♏●♦❝ and select the [Add variable] menu. A "numeric" type variable may be selected: it will contain the skill level at script run-time.
- To increase the skill level of a unit, right click on the name of the corresponding skill and select **[Increase level]**
- To reduce the skill level of a unit, right click on the name of the corresponding skill and select **[Reduce level]**

0 **{Options}** tab:

In the "Global timeout is activated" text box, specify whether or not you want to use a timeout to monitor e-mails that are in the pool.

- Right-click in the text box and select **[Yes]** or **[No]**.
- Right-click the text box and select **[Variable]**. You can then select a variable of Numeric type, containing the value at run-time, by double-clicking on a list item. A zero value means **No**, and any other numeric value means **[Yes]**.

If you select **[No]**, the message ***"If the global timeout is not active and if no agent who can treat e-mails is connected, the e-mails will be placed directly in the "Completed Items" folder*** appears.

If you select **[Yes]** or a variable, you have to specify the delay of the time-out. This value represents the number of seconds, hours and/or days during which the e-mail can be picked up. If nobody has picked up the message before the time-out is reached, the distribution fails and an error value of –1 is assigned to the Return code variable. When this error appears and if the "DistributeEmail" node is the last node, the e-mail is nevertheless moved to the Completed Items folder.

Global timeout management:

- The destination specified is an agent:

Destination	Timeout activated	Agent logged in	Description
Agent	Yes	Yes	E-mail remains in the pool until it is handled by an agent or until the global timeout is reached.
Agent	No	Yes	E-mail remains in the pool as long as the agent is connected.
Agent	No	No	E-mail is immediately sent to the 'Completed Items' folder.
Agent	Yes	No	E-mail remains in the pool until an agent logs in or until the global timeout is reached.

- The destination specified is a Service member:

Destination	Timeout activated	At least 1 Service member is logged in (note)	Description
Service member	Yes	Yes	E-mail remains in the pool until it is handled by an agent or until the global timeout is reached.
Service member	No	Yes	E-mail remains in the pool as long as the agent is connected.
Service member	No	No	E-mail is immediately sent to the 'Completed Items' folder.
Service member	Yes	No	E-mail remains in the pool until an agent logs in or until the global timeout is reached.

Note: In addition, the Service member logged in should have the corresponding skills and language levels.

- The destination specified is an agent or a Service member:

  An e-mail will be added to the 'Completed Items' folder of the inbound mailbox if:

  - the e-mail has not been handled (no agent is logged in and no global timeout is defined) and the "DistributeEmail" node is the last node of the E-mail Server tree.
  - once the e-mail has been handled by an agent and the "DistributeEmail" node is the last node of the E-mail Server tree.
  - if the global timeout is reached and the "DistributeEmail" node is the last node of the E-mail Server tree.

  Note: *To avoid this kind of situation, the script developer will have to manage the different possible errors cases, using the different values of the return code variables.*

Start user tree in Portal

Select this option to require the script tree(s) of User type to be executed and displayed in the web portal used by the agent. If this option is checked, the User Interface nodes appear in place of a CRM card: the ***{CRM card}*** tab is therefore not shown.

0 The **{CRM record}** tab

This tab is only available if the ***[Start user tree in Portal]*** option is not selected.

It is used to define the URL of a CRM record which will be displayed when an e-mail is opened by an agent using the M5000 CC Portal.

In the ***{CRM record (URL) address}***, enter the URL to be used to start the CRM record. You can select some variables by pressing **<F2>** and selecting the variable. When the node is executed, each variable will be replaced by its value when the CRM record is presented.

In the ***{Allow CRM record to be opened by agents}*** drop-down list, specify whether the agent can reopen the CRM record after closing it. You can also select a numeric variable. If this variable contains 0, the agent will be unable to reopen the CRM record after closing it. On the other hand, any other value in this variable will allow the record to be reopened.

Note: For a CRM record to be displayed in the portal when an e-mail is opened:

- *The {CRM record (URL) address} text box must be filled in. This text box contains variables only; the variables should not be empty the character string.*

The validity of the URL entered is not checked upon compilation: what is checked is only that the variables used actually exist.

To be able to modify the CRM record address, you must first load the script.

For more information about the CRM card display function, see Section **8.8 : CRM sheet :**.

0 Description of the ***{Email Color tab}***

Call Color tab allow to set custom color for calls in "Call & Email" application of the portal.

- Activation of the custom colors by ***[Use Custom Email Color]*** check box

- Selection of the type of configuration (colors can be fixed constant or a script variable)

* ***[Select Constant Colors]*** radio button: Selection of colors by a color palette (for fixed color) can be done by Clicking on corresponding ***[Pick]*** button, custom colors selected by user in the palette willl be saved with the user preferences.

* ***[Select Variable for Colors]*** radio button: Selection of colors by selecting a variable of "String" type (for color code)

Color variable can have different form (compatible with css color standard), here some exemples:
- Color name ("white")
- rbg(REDvalue, BLUEvalue, GREENValue)
  exemple : red = rbg(255,0,0)blue = rbg(0,255,0) green = rbg(0,0,255)
- Hexadecimal mode (white=#FFFFFF)

Default values have to be set for each option:

- As default, custom color is not activated

- As default, fixed colors are set for background and foreground.

13.2.7.3 DESCRIPTION OF THE "REPLYEMAIL" NODE

13.2.7.3.1 GENERAL PRESENTATION OF THE "REPLYEMAIL" NODE

Description

The ReplyEmail node  is used to reply to e-mails. The use of this node in an E-mail Server tree is completely automatic, while in an E-mail User tree, an interface is presented to the agent. In an e-mail User tree this node must be used with an "Info" node  . In this way, the permanent frame of the agent's mail window (see Sheet U-441) can be filled with information by using global variables (see § 13.3.1) concerning the e-mail: sender, recipients, subject, body text…

Note: It is not possible to reply to an e-mail, which is a transformed fax.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "ReplyEmail" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.12 VALUES OF THE "REPLYEMAIL" RETURN CODE VARIABLE

Value	Description
0	Message successfully sent
-1	Reply failed: time-out reached time-out reached)
-2	Reply failed: unknown error occurs unknown error occurs)
-3	Connection to the e-mail server failed
-4	Reply failed: the message is not in the Inbox the message is not in the Inbox)
Nothing (Nothing)	"No reply" was selected by the agent

Specific part

This part of the ReplyEmail node edition dialog box specifies parameters for replying to an e-mail.

1 Language and comments

A specific part has to be defined for each language of the Service version. Select each language in the ***{Select language :}*** scroll down list and fill in the corresponding specific part. For each language selected, enter the information text in the ***{Comment}*** box. Variables can be included in the comment. At run time, they will be textually replaced by their value. The corresponding message for each current language of the script will appear in the body text of the replied e-mail, one beneath the other.

To include a variable:

- Press ***[F2]***.
- Select an existing variable from the appearing list.
- click ***[OK]***.

Note: *Variables appear in bold underlined format in the {Comment} text box.*

0 Answer

You can either:

- ***[Reply to all]***: the answer is then sent to all recipients who received the e-mail, or
- ***[Reply to sender]***: the answer is sent only to the sender of the e-mail. See also e-mail addresses management (in Section 13.2.7.3.2).

0 Original message

Check the ***[Include original message]*** option if you want to keep the original e-mail in the reply.

0 Unattended execution

The execution of the "ReplyEmail" node in User scripts can be performed without interacting with an agent. To do this, an ***[Unattended Execution]*** checkbox is available in the User script. When the box is checked, the mail window associated with the node (see Sheet U-441) is not presented to the agent during the User script execution. The execution of the node is similar in the User script and in the Server script.

13.2.7.3.2 FAQ - HOW DOES M5000 CC MANAGE E-MAIL ADDRESSES?

This paragraph provides general information to questions that may arise from time to time concerning the management of e-mail addresses in the M5000 CC.

- What happens if the e-mail address used to reply to the e-mail is different from the one the e-mail was sent to ?

  When a "ReplyEmail" node is executed, the replier address is the address of the "primary mailbox" of the profile (see configuring the client mail in the installation manual" and not the address of the inbound mailbox for the e-mail. This primary mailbox is the first mailbox that has been created with this profile. We would recommend that you put the mailboxes of one Service in one profile.

- What happens if the e-mail is received in a secondary mailbox and the agent chooses the "Reply to All" action ?

  If you use a profile with several mailboxes and if the e-mail is received in the primary mailbox, the "Reply to All" action will work correctly. If the e-mail is received in one of the secondary mailboxes and the agent

chooses the "Reply to All" option, the system will identify the secondary mailbox and remove it from the recipients' list. But as in the case above, the replier address still remains the one of the primary mailbox.

There are still 2 important limitations:

- **Mailing lists**: if you use mailing lists (containing several mailboxes) and the ***[Reply to All]*** option, the system cannot identify the mailbox(es) and remove it/them. It means that each time you will use the ***[Reply to All]*** option to reply to a mailing list, the e-mail will be sent to the sender and to the Mitel 5000 Contact Center. This may saturate your mailbox very quickly.
- **Display name**: if you use the same display name for 2 different mailboxes, it may occur that none of the mailboxes will receive the e-mail.

13.2.7.4 DESCRIPTION OF THE "FORWARDEMAIL" NODE

Description

The ForwardEmail node  is used to forward e-mails. The use of this node in an E-mail Server tree is completely automatic, while in an E-mail User tree, an interface is presented to the agent. In an “User e-mail tree” this node must be used with an "Information" node  . In this way, the permanent frame of the agent's mail window (see Sheet U-441) can be filled with information by using global variables concerning the e-mail: sender, recipients, subject, body text…

Up to now, the forward of an e-mail to another Service is not available. This is only possible with e-mail addresses that don't belong to the specific mailbox.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "ForwardEmail" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.13 VALUES OF THE "FORWARDEMAIL" RETURN CODE VARIABLE

Value	Description
0	Message successfully forwarded (Message successfully forwarded)
-1	Forward failed: time-out reached (Forward failed：time-out reached)
-2	Forward failed: unknown error occurs (Forward failed：unknown error occurs)
-3	Connection to the E-mail Server failed (Connection to the email server failed)
-4	Forward failed: the message is not in the Inbox (Forward failed：the message is not in the Inbox)
-5	Forward failed: no recipients (Forward failed：no recipient)
Nothing	"No forward" was selected by the agent ("No forward" was selected by the agent)

Specific part

This part of the ForwardEmail node edition dialog box specifies parameters to forward the e-mail.

1 Language and comments

A specific part has to be defined for each language of the Service version. Select each language in the ***{Select language :}*** scroll down list and fill in the corresponding specific part. For each language selected, enter the information text in the ***{Comment}*** box. Variables can be included in the comment. At run time,

they will be textually replaced by their value. The corresponding message for each current language of the script will appear in the body text of the copied e-mail, one beneath the other.

To include a variable:

- Press ***[F2]***.
- Select an existing variable from the appearing list.
- click ***[OK]***.

Note: Variables appear in bold underlined format in the {Comment} text box.

0 Audience of this document

In the ***{Recipients}*** dropdown list, specify to whom the e-mail will be forwarded. The e-mail can be sent to several people at the same time (separated with semi-colon). The destination address can be specified in one of the following ways:

- Type the complete e-mail addresses in the dropdown list.
- Click the ***To...*** button. Select recipients in the Address Book (if the Profile hasn't been defined, choose one first);
- Enter the first letters or the alias name of the mail recipient, then click the ***[Check Names]*** button to complete the addresses. If the name is ambiguous or unknown, a message will be displayed.
- Choose a variable from the dropdown list, which will contain the mail recipient at run-time.

When a "ForwardEmail" node is included in an E-mail Server tree, the Service manager has to fill the ***{Recipients}*** text box, otherwise the compilation of the script fails.

On the contrary, if the node is added in an E-mail User tree, the ***{Recipients}*** value can remain empty. Indeed, an agent can specify the recipient's address at run-time according to the context. As a conclusion, it isn't mandatory to have a default destination when an e-mail is forwarded.

0 Unattended execution

The execution of the "ForwardEmail" node in User scripts can be performed without interacting with an agent. To do so, an ***Unattended Execution*** checkbox is available in the User Email tree. When the box is checked, the mail window associated with the node (see Sheet U-441) is not presented to the agent during the User script execution. The execution of the node becomes similar in the User script and in the Server script.

13.2.7.5 DESCRIPTION OF THE "DELETEEMAIL" NODE

Description

The "DeleteEmail" node  is used to delete e-mails.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "DeleteEmail" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.14 VALUES OF THE "DELETEEMAIL" RETURN CODE VARIABLE

Value	Description
0	Message successfully deleted Message deleted successfully
-1	Delete failed: time-out reached (Delete failed：time-out reached)
-2	Delete failed: unknown error occurs (Delete failed：unknown error occurs)
-3	Connection to the E-mail Server failed (Connection to the email server failed)

Tableau 13.14 VALUES OF THE "DELETEEMAIL" RETURN CODE VARIABLE

Value	Description
-4	Delete failed: the message is not in the Inbox (Delete failed：the message is not in the Inbox)

Specific part

This part of the "DeleteEmail" node edition dialog box specifies the parameter for the deletion of an e-mail.

1 Delete the e-mail permanently

When you delete an e-mail from the Mailbox, the ***[Delete the e-mail permanently]*** option tells you whether the e-mail will be deleted permanently or will be moved to the "Deleted items" folder.

13.2.7.6 DESCRIPTION OF THE "COPYEMAIL" NODE

Description

The "CopyEmail"node  is used to copy an e-mail in any mailbox or public folder related to the profile used with this Service.

A comment can be added in the copy.

The use of this node in an E-mail Server tree is completely automatic, while in an E-mail User tree, an interface is presented to the agent.

When the e-mail is copied, its status is set to unread.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "CopyEmail" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.15 VALUES OF THE "COPYEMAIL" RETURN CODE VARIABLE

Value	Description
0	Message successfully copied (Message successfully copied)
-2	Copy failed: unknown error occurs (Copy failed：unknown error occurs)
-3	Connection to the E-mail Server failed (Connection to the email server failed)
-4	Copy failed: the message is not in the Inbox (Copy failed：the message is not in the Inbox)
-7	Copy failed: invalid store name (Copy failed：Invalid storage name
-8	Copy failed: invalid folder path (Copy failed：invalid path name)
Nothing	"No copy" was selected by the agent ("No copy" was selected by the agent)

Specific part

This part of the CopyEmail node edition dialog box specifies parameters to copy an e-mail.

1 Language and comments

A comment can be written for each language of the Service version. Select each language in the ***{Select language :}*** scroll down list and fill in the corresponding specific part. For each language selected, enter the information text in the ***{Comment}*** box. Variables can be included in the comment. At run time, they will be

textually replaced by their value. The corresponding message for each current language of the script will appear in the body text of the copied e-mail, one beneath the other.

To include a variable:

- Press ***[F2]***.
- Select an existing variable from the appearing list.
- click ***[OK]***.

Note: Variables appear in bold underlined format in the {Comment} text box.

0 Store:

In the ***[Mailbox]*** drop down list, specify the store (Microsoft Outlook tem which refers to a mailbox or public folder) to which the e-mail will be copied.

The store can be accessed in one of the following ways:

- Choose a store in the first part of the dropdown list (list of all mailboxes and public folders related to the profile used with this Service)
- Choose a variable (String type) in the second part of the dropdown list, which will contain the store name at run-time

0 Path:

In the ***[Destination directory]***: dropdown list, specify the path to the file (sub-division of the mailbox which stores the information in the same way as a disk directory) in which the e-mail will be copied (<Filename>\<Sub_filename>, etc.).

This path has to exist in the store you defined in the previous section (i.e.: "Inbox\Product"). To access the root folder (see note), specify "\" as path.

Note: The root folder (main subdivision of the mailbox). To view its content (in Microsoft Outlook), you have to deselect the **[Show Folder Home Page]**" option in the **[View]** menu.

The folder path can be specified in one of the following ways:

- Type the complete folder path in the dropdown list
- Choose a variable (String type) in the dropdown list, which will contain the path at run-time

0 Unattended execution

The execution of the "CopyEmail" node in User scripts can be performed without interacting with an agent. To do so, an ***Unattended Execution*** checkbox is available in the User Email tree. When the box is checked, the mail window associated with the node (see Sheet U-441) is not presented to the agent during the User script execution. The execution of the node becomes similar in the User script and in the Server script.

13.2.7.7 DESCRIPTION OF THE "MOVEEMAIL" NODE

Description

The "MoveEmail"node  is used to move an e-mail in any mailbox or public folder related to the profile used with this Service.

Comments can be added in the moved e-mail.

The use of this node in an E-mail Server tree is completely automatic, while in an E-mail User tree, an interface is presented to the agent.

When the e-mail is moved, its status is set to unread.

When an e-mail has been moved successfully, it is obvious that it will no longer be located in the Service Inbox. This means that the next e-mail nodes will systematically return an error (example: SendEmail) except the DistributionEmail node. On the other hand, if the move fails, the e-mail will remain in the Inbox and can be processed further.

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "MoveEmail" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable.

The possible values are:

Tableau 13.16 VALUES OF THE "MOVEEMAIL" RETURN CODE VARIABLE

Value	Description
0	Message successfully moved (Message successfully moved)
-2	Move failed: unknown error occurs (Move failed：unknown error occurs)
-3	Connection to the E-mail Server failed (Connection to the email server failed)
-4	Move failed: the message is not in the Inbox (Move failed：the message is not in the Inbox)
-7	Move failed: invalid store name (Move failed：Invalid storage name
-8	Move failed: invalid folder path (Move failed：invalid path name)
Nothing **(Nothing)**	"No move" was selected by the agent ("No move" was selected by the agent)

Specific part

This part of the MoveEmail node edition dialog box specifies parameters to move the e-mail.

1 Language and comments

A comment can be written for each language of the Service version. Select each language in the ***{Select language :}*** scroll down list and fill in the corresponding specific part. For each language selected, enter the information text in the ***{Comment}*** box. Variables can be included in the comment. At run time, they will be textually replaced by their value. The corresponding message for each current language of the script will appear in the body text of the moved e-mail, one beneath the other.

To include a variable:

- Press ***[F2]***.
- Select an existing variable from the appearing list.
- click ***[OK]***.

Note: *Variables appear in bold underlined format in the {Comment} text box.*

0 Store:

In the ***[Mailbox]*** drop down list, specify the store (Microsoft Outlook term which refers to a mailbox or public folder) to which the e-mail will be moved.

The store can be accessed in one of the following ways:

- Choose a store in the first part of the dropdown list (list of all mailboxes and public folders related to the profile used with this Service)
- Choose a variable (String type) in the second part of the dropdown list, which will contain the store name at run-time

0 Path:

In the ***[Destination directory]***: dropdown list, specify the path to the file (sub-division of the mailbox which stores the information in the same way as a disk directory) in which the e-mail will be copied (<Filename>\<Sub_filename>, etc.).

This path has to exist in the store you defined in the previous section (i.e.: "*Inbox\Product")*.To access the root folder (see note), specify "\" as path.

Note: *The root folder (main subdivision of the mailbox). To view its content (in Microsoft Outlook), you have to deselect the **[Show Folder Home Page]**" option in the **[View]** menu.*

The folder path can be specified in one of the following ways:

- Type the complete path in the dropdown list
- Choose a variable (String type) in the dropdown list, which will contain the path at run-time

0 Unattended execution

The execution of the MoveEmail node in User scripts can be performed without interaction with an agent. To do this, an ***[Unattended Execution]*** checkbox is available in the User script. When the box is checked, the mail window associated with the node (see Sheet U-441) is not presented to the agent during the User script execution. In this way, the User script execution is similar to the Server script execution.

13.2.8 E-MAIL NODES " NODES MODULE

It is important to underline the fact that when the e-mail has left the in-box, the operations performed by the e-mail nodes are no longer possible on the in-box: any e-mail node executed thereafter will systematically return an error (return code is not 0) upon execution of the distribution node because in this case, it is not a direct operation on the e-mail.

13.2.8.1 DESCRIPTION OF THE "MULTIMEDIA NODES" ADD-ON MODULE

The nodes of the  "Multimedia Nodes" module are used both in the M5000 CC Media Server and User Interface trees. There are accessible in any tree categories of tree (Voice, E-Mail and Web).

List of "Multimedia Nodes" module  **nodes:**

-  Send E-Mail (see § 13.2.8.2)
-  Send SMS (see § 13.2.8.3)

13.2.8.2 DESCRIPTION OF THE "SENDEMAIL" NODE

Description

The SendEmail node  is used to send e-mails. The use of this node in a Server tree is completely automatic, while in an User tree, an interface is presented to the agent. In an “User tree” this node should be used with an "Information" node  . In this way, the permanent frame of the agent's mail window (see Sheet U-441) can be filled with information by using global variables concerning the media: sender, recipients, subject, body text…

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "SendEmail" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.17 VALUES OF THE "SENDEMAIL" RETURN CODE VARIABLE

Value	Description
0	Message successfully sent (Message successfully sent)
-1	Send failed: time-out reached (Send failed：time-out reached)
-2	Send failed: unknown error occurs (Send failed：unknown error occurs)
-3	Connection to the E-mail Server failed (Connection to the email server failed)

Tableau 13.17 VALUES OF THE "SENDEMAIL" RETURN CODE VARIABLE

Value	Description
-5	Send failed: no recipients (Send failed：no recipient)
-9	Send cancelled (Send cancelled by user)

Specific part

This part of the SendEmail node edition dialog box specifies parameters to send the e-mail.

1 Send mode and options

In its default execution mode (***Assign variables and send***), this node assigns script variables (if variables are specified for the various fields) and then immediately sends the mail to the recipients. Another mode is available when selecting the ***Only assign variables*** option, in which the mail is not sent: this can be useful for sending the message by another mechanism or submitting the message to a supervisor and sending it at a later point in the script (using a new Distribute node and another SendEMail node).

The execution of the "SendEmail" node in User scripts can be performed without interacting with an agent. To do so, an ***Unattended Execution*** checkbox is available in the User tree. When the box is checked, the mail window associated with the node (see Sheet U-441) is not presented to the agent during the User script execution. The execution of the node becomes similar in the User script and in the Server script.

The ***Save in Sent Items*** options controls whether to save a copy of the sent message in the Sent Items folder or not.

Note: In the User application this node is always executed unattended. Agent interaction is only possible through the Portal.

Note: The **Only assign variables** option is not available in Server trees. If it is selected in a User tree, the **Unattended execution** and **Save in Sent Items** options are always deselected.

0 Languages and comments

A specific part has to be defined for each language of the Service version. Select each language in the ***{Select language :}*** scroll down list and fill in the corresponding specific part. For each language selected, enter the information text in the ***{Subject}*** box and ***{Comment}*** box. Variables can be included in the comment. At run time, they will be textually replaced by their value. The corresponding message for each current language of the script will appear in the body text of the copied e-mail, one beneath the other.

To include a variable:

- Press ***[F2]***.
- Select an existing variable from the appearing list.
- click ***[OK]***.

Note: Variables appear in bold underlined format in the {Subject} and {Comment} text box.

0 Recipients

In the ***{Recipients}*** dropdown list (To, Cc and Bcc), specify to whom the e-mail will be sent. The e-mail can be sent to several people at the same time (separated with semi-colon). The destination address can be specified in one of the following ways:

- Type the complete e-mail addresses in the dropdown list.
- Choose a variable from the dropdown list, which will contain the mail recipient at run-time.

When a "SendEmail" node is included in an Server tree, the Service manager has to fill the ***{Recipients}*** text box, otherwise the compilation of the script fails.

On the contrary, if the node is added in an User tree, the ***{Recipients}*** value can remain empty. Indeed, an agent can specify the recipient’s address at run-time according to the context. As a conclusion, it isn’t mandatory to have a default destination when an e-mail is forwarded.

0 Priority

In the ***{Priority}*** dropdown, specify importance of the e-mail will be sent.

The priority can be specified in one of the following ways:

- Choose a value High, Normal or Low in the dropdown list
- Choose a variable from the variable dropdown list, which will contain the mail priority at run-time. This is

a numeric value (1: Low, 2: Normal and 3: High)

0 Attachments

In the ***{Attachments}*** dropdown, specify attachments of the e-mail will be sent.

Many attachments can be sent at the same time (separated with semi-colon). The URL must be a network path accessible by the Server.

The attachments can be specified in one of the following ways:

- Type the complete Network path in the dropdown list
- Choose a variable from the dropdown list, which will contain the network path at run-time

13.2.8.3 DESCRIPTION OF THE "SENDSMS" NODE

Description

The SendSMS node  is used to send SMS. The use of this node in a Server tree is completely automatic, while in an User tree, an interface is presented to the agent. In an “User tree” this node should be used with an "Information" node  . In this way, the permanent frame of the agent's mail window (see Sheet U-441) can be filled with information by using global variables concerning the media: sender, recipients, body text…

Edit the node

Edit or add the node to display the dialog box (see Sheet U-441).

Generic part

In the generic part (see § 13.2.1.2) of the "SendSMS" node, the "Return code variable" must be Numeric". After the node is executed, an error code value is returned in this variable. The possible values are:

Tableau 13.18 VALUES OF THE "SENDEMAIL" RETURN CODE VARIABLE

Value	Description
0	Message successfully sent (Message successfully sent)
-1	Send failed: time-out reached (Send failed：time-out reached)
-2	Send failed: unknown error occurs (Send failed：unknown error occurs)
-3	Connection to the SMS Server failed (Connection to the SMS server failed)
-5	Send failed: no recipients (Send failed：no recipient)
-9	Send cancelled (Send cancelled by user)
-10	Send failed: message too long (Send failed : message too long)

Specific part

This part of the SendSMS node edition dialog box specifies parameters to send the SMS.

1 Language and comments

A specific part has to be defined for each language of the Service version. Select each language in the ***{Select language :}*** scroll down list and fill in the corresponding specific part. For each language selected, enter the information text in the ***{Comment}*** box. Variables can be included in the comment. At run time, they will be textually replaced by their value. The corresponding message for each current language of the script will appear in the body text of the copied SMS, one beneath the other.

To include a variable:

- Press ***[F2]***.
- Select an existing variable from the appearing list.
- click ***[OK]***.

Note: Variables appear in bold underlined format in the {Comment} text box.

0 Recipients

In the ***{Recipients}*** dropdown list, specify to whom the SMS will be sent. The SMS can be sent to several people at the same time (separated with semi-colon). The destination address can be specified in one of the following ways:

- Type the complete phone number in the dropdown list.
- Choose a variable from the dropdown list, which will contain the phone number recipient at run-time.

When a "SendSMS" node is included in an Server tree, the Service manager has to fill the ***{Recipients}*** text box, otherwise the compilation of the script fails.

On the contrary, if the node is added in an User tree, the ***{Recipients}*** value can remain empty. Indeed, an agent can specify the recipient's address at run-time according to the context. As a conclusion, it isn't mandatory to have a default destination when an e-mail is forwarded.

0 Unattended execution

The execution of the "SendSMS" node in User scripts can be performed without interacting with an agent. To do so, an ***Unattended Execution*** checkbox is available in the User tree. When the box is checked, the mail window associated with the node (see Sheet U-441) is not presented to the agent during the User script execution. The execution of the node becomes similar in the User script and in the Server script.

Note: The attended execution in the User application is skipped. You have to use Portal in order to have attended execution.

13.3 DETAILED DESCRIPTION OF THE VARIABLES

This appendix presents the following detailed descriptions:

- intrinsic variables for the inbound Services (see § 13.3.1),
- intrinsic variables for the outbound Services (see § 13.3.2),
- return code variable values (see § 13.3.3).

13.3.1 INTRINSIC VARIABLES FOR INBOUND SERVICES

The mask concept linked to the global variables indicates the script in which the variables may be used.

There are three types of mask:

- Voice: this variable can be used in a Voice Server with IVR script, in a Voice Server without IVR script or in a Voice User script.
- Web: this variable can be used in a Web script.
- E-mail: this variable can be used in an e-mail Server script or a User Interface script.

13.3.1.1 DESCRIPTION OF READ-ONLY INTRINSIC VARIABLES

Tableau 13.19 DESCRIPTION OF READ-ONLY INTRINSIC VARIABLES (1/8)

Variable	type	Media	Descriptions
AgentId	string	Voice, E-mail	Voice: Identifier of the agent to whom the call has been transferred E-mail: Identifier of the agent who is handling or has handled the e-mail. This variable is filled when the status of the e-mail changes from Reserved to User. The value is kept in the variable after the end of the agent script, until the end of the Call Server script or until another agent takes the e-mail. If no agent handled the e-mail, this variable contains a zero-length string.
AgentName	string	Voice, E-mail	Voice: Name of the agent to whom the call has been transferred E-mail: Name of the agent. The lifetime of this intrinsic variable is similar to the one of the AgentId variable.
AgentPhone	string	Voice	Phone of the agent to whom the call has been transferred
AgentExtension	string	Voice	Extension of the agent to which the call has been transferred
ServiceINICallNumber	Num.	Voice, Web, E-mail	Service status: Number of calls in the IVR status
ServiceWAITCallNumber	Num.	Voice, Web, E-mail	Service status: Number of calls in the waiting status
ServiceRSVCallNumber	Num.	Voice, Web, E-mail	Service status: Number of calls in the Reserved status
ServiceACDCallNumber	Num.	Voice, Web, E-mail	Service status: Number of calls in the DCP (conversation) status
ServiceHOLDCallNumber	Num.	Voice, Web, E-mail	Service status: Number of calls in On Hold status
ServicePCPCallNumber	Num.	Voice, Web, E-mail	Service status: Number of calls in the PCP status
ServiceIDLEExtensionNumber	Num.	Voice, Web, E-mail	Service status: Number of extensions in the Idle status
ServiceACDExtensionNumber	Num.	Voice, Web, E-mail	Service status: Number of extensions in DCP (in conversation) status
ServiceRSVExtensionNumber	Num.	Voice, Web, E-mail	Service status: Number of extensions in the Reserved status

Tableau 13.19 DESCRIPTION OF READ-ONLY INTRINSIC VARIABLES (2/8)

ServiceHOLDExtensionNumber	Num.	Voice, Web, E-mail	Service status: Number of extensions in On Hold status
ServicePRVExtensionNumber	Num.	Voice, Web, E-mail	Service status: Number of extensions in Private status
ServicePrivateInExtensionNumber	Num.	Voice, Web, E-mail	Service status: Number of extensions in Private in status (receiving a private call not distributed by the ICD)
ServicePrivateOutExtensionNumber	Num.	Voice, Web, E-mail	Service status: Number of extensions in the Private out status (giving a private call outside a call campaign)
ServiceAvailableAgentNumber	Num.	Voice, Web, E-mail	Service status: Number of available agents
ServiceREADYAgentNumber	Num.	Voice, Web, E-mail	Service status: Number of agents in the Ready status
ServiceNOTREADYAgentNumber	Num.	Voice, Web, E-mail	Service status: Number of agents in the Not Ready status
ServiceReadyIdleAgentNumber	Num.	Voice, Web, E-mail	Status of a Service: this variable contains the number of agents who are assigned to the Service, are Ready and at least one of whom has a free extension.
ServicePCPAgentNumber	Num.	Voice, Web, E-mail	Service status: Number of agents in PCP status
ServiceBREAKAgentNumber	Num.	Voice, Web, E-mail	Service status: Number of agents in Break status
ServiceQuality	Num.	Voice, Web, E-mail	Service status: Quality of Service (not taking into account calls that are not to be transferred).
ServiceAverageWaitingTimeBeforeAnswer	Num.	Voice, Web, E-mail	Service status: average waiting duration before transfer (not taking into account calls which are not to be transferred)
ServiceAverageWaitingTimeBeforeAbort	Num.	Voice, Web, E-mail	Service status: average waiting duration before call abandon
ServiceToTransferCallNumber	Num.	Voice, Web, E-mail	Service status: number of calls not transferred yet, for which CallToTransfer <>0
ServiceNotToTransferCallNumber	Num.	Voice, Web, E-mail	Service status: Number of calls not transferred yet, for which CallToTransfer = 0
ServiceLongestWaitTimeBeforeAband	Num.	Voice, Web, E-mail	Service status: Longest waiting time among all calls that have been disconnected before transfer (CallToTransfer <> 0).

Tableau 13.19 DESCRIPTION OF READ-ONLY INTRINSIC VARIABLES (3/8)

ServiceLongestWaitTimeBeforeAnswer	Num.	Voice, Web, E-mail	Service status: longest waiting time among all successfully transferred calls
ServiceLongestWaitTimeStillWaiting	Num.	Voice, Web, E-mail	Service status: Longest waiting time among all calls which are not transferred yet, nor abandoned (CallToTransfer<> 0).
ServiceAbortPercentage	Num.	Voice, Web, E-mail	Service status: Percentage of abandoned calls
ServiceTotalCallsNumber	Num.	Voice, Web, E-mail	Service status: Total number of voice calls for the Service. It's the sum of all the variables concerning the different calls statuses (PCP, Hold, etc.).
ServiceEmailsServerNumber	Num.	Voice, Web, E-mail	Service status: The number of E-mails in the Server status
ServiceEmailsWaitNumber	Num.	Voice, Web, E-mail	Service status: Number of E-mails being in Wait status
ServiceEmailsReservedNumber	Num.	Voice, Web, E-mail	Service status: Number of e-mails being in Reserved status
ServiceEmailsUserNumber	Num.	Voice, Web, E-mail	Service status: Number of e-mails in User status
ServiceEmailsNumber	Num.	Voice, Web, E-mail	Service status: Total number of E-mails. This number is equal to the sum of the four previous variables
ServiceEmailsLongestTreatmentDuration	Num.	Voice, Web, E-mail	Service status: longest processing time for all the e-mails processed fully (this time range is in the M5000 CC Administrator application): time for the calculation of the average value (see Sheet U-441)
ServiceEmailsAverageTreatmentDuration	Num.	Voice, Web, E-mail	Service status: average processing time for all the e-mails processed fully (this time range is in the M5000 CC Administrator application): time for the calculation of the average value (see Sheet U-441)
ServiceEmailsInProcessLongestTreatmentDuration	Num.	Voice, Web, E-mail	Service status: longest processing duration among all the e-mails that are still being processed
ServiceEmailsQOSThreshold	Num.	Voice, Web, E-mail	Service status: the value of the E-mail quality of Service threshold. A value in days, hours, minutes and seconds indicating a good lapse of time for an E-mail to be treated.

Tableau 13.19 DESCRIPTION OF READ-ONLY INTRINSIC VARIABLES (4/8)

ServiceEmailsPercentageBeforeThreshold	Num.	Voice, Web, E-mail	Service status: percentage of e-mails treated before the e-mail threshold defined in the time interval defined in the M5000 CC Administrator is reached: time for the calculation of the average value (see Sheet U-441) in the M5000 CC Service Manager (see ServiceEmailsQOSThreshold, Sheet U-441
ServiceEmailsPercentageAfterThreshold	Num.	Voice, Web, E-mail	Service status: percentage of e-mails processed after the e-mail threshold defined in the time interval defined in the M5000 CC Administrator is reached: time for the calculation of the average value (see Sheet U-441) in the M5000 CC Service Manager (see ServiceEmailsQOSThreshold, Sheet U-441
ServiceWebAssocSessionsNumber	Num.	Voice, Web, E-mail	Service status: number of opened web sessions that are associated to a voice session
ServiceWebNonAssocSessionsNumber	Num.	Voice, Web, E-mail	Service status: number of opened web sessions that aren't associated to a voice session
ServiceWebSessionNumber	Num.	Voice, Web, E-mail	Service status: total number of opened web sessions. It's the sum of the ServiceWebAssocSessionsNumber and the ServiceWebNonAssocSessionsNumber variables.
CallId	string	Voice, E-mail	Call identifier
CallTime	Date	Voice, Web, E-mail	Call arrival date/time
CallCLID	string	Voice	If directory search is activated, the CLID is temporarily equal to "ZERO", until name resolution is completed. At the end of name resolution, if the contact belongs to a red record, the CLID is then replaced by the string "" so as to protect the caller's secret number. If the directory search does not show that the contact belongs to a red record, the CLID uses the caller's number. If directory search is not activated, the CLID uses the caller's number.
CallDNIS	string	Voice	**If case of call return to attendant**, a directory search is made (if activated). During the time required for number resolution, the variable is reset to "ZERO". There are two possibilities at the end of directory search. Either the number corresponds to a contact with red record, in which case the string is "" so as to preserve the secret number, or the contact is not a red record and the variable then uses the number of the person in charge of call return to the attendant. **In all the other cases**, the variable uses the caller's number.

Tableau 13.19 DESCRIPTION OF READ-ONLY INTRINSIC VARIABLES (5/8)

CallDNISAlias	string	Voice	For each call, this variable contains the alias associated with the DNIS composed by the caller. For call return to attendant, this variable indicates “answered return” or “unanswered return”. If it is not a call return to the attendant and no alias has been defined, this variable will not contain anything.
CallUserUserInfo	string	Voice	User to User Signaling associated with the call
CallWaitingTime	Date	Voice	Date/time of the beginning of the waiting period (or CallTime if no Transfer node has reset this value)
CallTransferTime	Date	Voice	Date/time of the call transfer
CallDisconnectionTime	Date	Voice	Date/time of the end of the physical call
CallEndPCPTime	Date	Voice	Date/time of the end of the PCP period
CallAgentScriptEndTime	Date	Voice, E-mail	Voice: Date/time of the end of the User Interface script E-mail: Date and time of the end of the agent's script. Corresponds to the change of status from user to Server. If more than one agent handles the same e-mail, only the date/time of the latest agent's script is stored
CallWaitingDuration	Num.	Voice	Duration of the waiting period (in seconds)
CallPCPDuration	Num.	Voice	Duration of the PCP period (in seconds)
CallCallServerDuration	Num.	Voice	Total duration of the call (not only physical calls) (in seconds)
CallAgentDuration	Num.	Voice, E-mail	Voice: Duration of the agent period (including PCP, excluding offline scripting) (in seconds) E-mail: Duration (in seconds) of the handling of the e-mail by the agent. This duration starts when the e-mail status changes from Reserved to User and ends when it changes back to Server
CallServiceId	string	Voice, Web, E-mail	Service identifier
CallServiceVersion	Num.	Voice, Web, E-mail	Service version number
CallDisconnectionStatus	Num.	Voice	Status of the call when it has been terminated : 0=IVR; 1=Wait; 2&3=Reserved; 4= DCP (conversation); 5=Hold; 6=PCP
CallDisconnectionTreeId	string	Voice	Identifier of the current tree when the call has been disconnected
CallDisconnectionNodeId	string	Voice	Identifier of the current node when the call has been disconnected
NumberOfTransferAgentToAgent	Num.	Voice	Number of agent to agent transfers for a call

Tableau 13.19 DESCRIPTION OF READ-ONLY INTRINSIC VARIABLES (6/8)

CallTransferringServerName	string	Voice	Name of the remote Server from which a call is transferred
CallDestinationServerName	string	Voice	Name of the remote Server where the call is transferred
NetworkId	string	Voice	Name of the Server where the call is first received, followed by the Call Id
CallTreatment	string	Voice	Property specifying if the call is processed locally or remotely
NumberOfRemoteTransfer	Num.	Voice	Number of remote transfers which have been done for the call
CallerDisplayName	string		Correspondent's first name and surname if directory search is activated (directory server defined with resolution authorisation in the service) and if this search yields a result. Note that during the time required for directory search, this variable contains the string "ZERO". If directory search does not find any contact, this variable is equal to "".
CallerFirstName	string	Voice	Correspondent's first name if directory search is activated (directory server defined with resolution authorisation in the service) and if this search yields a result. Note that during the time required for directory search, this variable contains the string "ZERO". If directory search does not find any contact, this variable is equal to "".
CallerLastName	string	Voice	Correspondent's surname if directory search is activated (directory server defined with resolution authorisation in the service) and if this search yields a result. Note that during the time required for directory search, this variable contains the string "ZERO". If directory search does not find any contact, this variable is equal to "".
WebIPAddress	string	Web	IP address of the machine connected to the contact centre via M5000 CC WebCall Service. This data can facilitate synchronization with a Voice over IP session started on the same computer
WebSessionBeginTime	Date	Web	The web session start time (i.e. begin time of the script)
WebSessionEndTime	Date	Web	End time of the web session. (i.e. end time of the script)
WebSessionId	string	Web	Id of the web session (similar to the CallID for vocal session)
EMailImportance	Num.	E-mail	Importance of the message
EMailSenderAddress	string	E-mail	Sender's SMTP Address
EMailSenderName	string	E-mail	Sender's name as defined in the E-mail
EMailMailboxName	string	E-mail	Name of the mailbox where the e-mail arrived
EMailMessageSize	Num.	E-mail	Size of the message in bytes

Tableau 13.19 DESCRIPTION OF READ-ONLY INTRINSIC VARIABLES (7/8)

EMailMessageSubject	string	E-mail	Subject of the message
EMailMessageBody	string	E-mail	Message body: E-mail content without any attachment
EMailMessageType	string	E-mail	Type of message: e-mail = 1; transformed fax = 2; SMS = 3
EMailTimeReceived	Date	E-mail	Date/time the message was received
EMailTimeSent	Date	E-mail	Date/time of sending of the message
EMailNumberOfAttachments	Num.	E-mail	Number of attachments
EMailRecipAddressesInSet	Set	E-mail	Set of all recipient SMTP addresses of the message (in "To" and "Cc")
EMailRecipNamesInSet	Set	E-mail	Set of all recipient names of the message (in "To" and "Cc")
EMailRecipAddressesInString	string	E-mail	Same data as MailRecipAddressesInSet in a string
EMailRecipNamesInString	string	E-mail	Same data as MailRecipNamesInSet in a string
EMailHandlingBeginTime	Date	E-mail	Date/time when the e-mail is handled by M5000 CC
EMailHandlingEndTime	Date	E-mail	Date/time of end of e-mail processing by M5000 CC
EMailAttachmentPaths	Set	E-mail	String type set representing the complete network paths of the message attachments.
CallTransferringServerName	string	Voice	Name of the remote Server from which a call is transferred
CallDestinationServerName	string	Voice	Name of the remote Server where the call is transferred
NetworkId	string	Voice	Name of the Server where the call is first received, followed by the Call Id
CallTreatment	string	Voice	Property specifying if the call is processed locally or remotely
NumberOfRemoteTransfer	Num.	Voice	Number of remote transfers which have been done for the call
CallDisconnectingParty	Num.	Voice	Indicates who hung up the call first (agent or caller). A specific value is reserved for calls for which the on-hook was not detected (0 = no on-hook detected, 1 = on-hooked by agent, 2 = on-hooked by caller). Note: The CallDisconnectingParty intrinsic value is set at 0 (no hangup detected) and is updated when the call is hung up. If, when the script ends, the call is still present, the value saved will be 0 (no hang up detected). Therefore, whether or not the scripts uses IVR ports, the value 0 will be saved as the information that indicated when the hangup comes from only arrives when the system is no longer managing any calls.

Tableau 13.19 DESCRIPTION OF READ-ONLY INTRINSIC VARIABLES (8/8)

CallType	Num.	Voice, Web, E-mail	Indicates the call type. Three values are possible: 1 = the call is an unanswered return. 2 = the call is an answered return. 0 = the call is not a return or arrived in a configuration with IVR.
ReturningPartyFirstName	string	Voice, Web, E-mail	First name of the correspondent responsible for call return to attendant if directory search is activated (directory server defined with resolution authorisation in the service) and if this search yields a result. Note that during the time required for directory search, this variable contains the string “ZERO”. If directory search does not find any contact, this variable is equal to "".
ReturningPartyLastName	string	Voice, Web, E-mail	Surname of the correspondent responsible for call return to attendant if directory search is activated (directory server defined with resolution authorisation in the service) and if this search yields a result. Note that during the time required for directory search, this variable contains the string “ZERO”. If directory search does not find any contact, this variable is equal to "".
ReturningPartyDisplayName	string	Voice, Web, E-mail	First name and surname of the correspondent responsible for call return to attendant if directory search is activated (directory server defined with resolution authorisation in the service) and if this search yields a result. Note that during the time required for directory search, this variable contains the string “ZERO”. If directory search does not find any contact, this variable is equal to "".
CallOrEMailSection	string	Voice, E-mail	Name of the section to which belong the call

13.3.1.2 DESCRIPTION OF READ-ONLY INTRINSIC VARIABLES SPECIFIC TO THE CONFERENCE SERVICE

Tableau 13.20 DESCRIPTION OF READ-ONLY INTRINSIC VARIABLES SPECIFIC TO THE CONFERENCE SERVICE

Variable	type	Media	Descriptions
ConferenceSubject	string	Voice	Subject of the conference in progress
ConferenceParticipantsNameList	string	Voice	List of names of all participants in the on-going conference
ConferenceParicipantName	string	Voice	Name of the participant calling the service to join the conference
ConferenceOwnerName	string	Voice	Name of the organiser of the current conference

13.3.1.3 DESCRIPTION OF DYNAMIC INTRINSIC VARIABLES ("CUSTOM COUNTER" TYPE VARIABLES

The value of the dynamic intrinsic variables is calculated on the basis of the value of the associated "Custom Counter" type user variable(e.g. Alarm). This value must be seen as a criteria which may or may not be respected according to its value. If the value of this global variable is zero, the criterion (Alarm) is not considered as checked. If the value is not zero (any other numerical value other than zero) the criterion (Alarm) is checked.

Tableau 13.21 DESCRIPTION OF DYNAMIC INTRINSIC VARIABLES ("CUSTOM COUNTER" TYPE VARIABLES

Variable	type	Media	Descriptions
ServiceCurrent_xxx_Calls	Num.	Voice Web, E-mail	The total number of calls for which the criterion is respected (e.g.: the number of calls for which the value of the "Alarm" variable is different from 0)
ServiceFlow_xxx_Calls	Num.	Voice, Web, E-mail	The total number of changes, calculated over all the calls, which enabled the defined criterion to be verified. This number of changes is calculated over a time period that corresponds to the status refresh period. (e.g.: the number of calls for which the value of the "Alarm" user variable has changed from 0 to another numerical value different from 0 for a time period that corresponds to the status refresh period)
ServiceDayAccumulated_xxx_Calls	Num.	Voice, Web, E-mail	The number of calls that had the criterion verified when they were terminated (e.g.: when a call is hung up or an e-mail is processed completely) accumulated over one day. This number only concerns calls that took place for a whole calendar day, from 00:01 to midnight. This value is set at 0 to 00:01 or when the Server starts.
ServiceHourAccumulated_xxx_Calls	Num.	Voice, Web, E-mail	The number of calls that had the criterion verified when they were terminated (e.g.: when a call is hung up or an e-mail is processed completely) accumulated over one hour. This number only concerns calls that took place during the current hour, for example, between 08:00 and 08:59, between 15:00 and 15:59, etc.. This value is set at 0 every hour or when the Server starts.

13.3.1.4 DESCRIPTION OF READ-WRITE INTRINSIC VARIABLES

Tableau 13.22 DESCRIPTION OF READ-WRITE INTRINSIC VARIABLES

Variable	type	Media	Descriptions
CallAgentBreakDuration	Num.	Voice	The break time for the agent between two calls (in seconds, the duration is a positive number). The agent may interrupt this break time (by changing to "Ready" or "Not Ready" status) but cannot extend it. For each call, this variable will be initialized with the duration configured for the service (U-417). Any script (server script or agent script) can decide to modify this variable. At the moment when the agent gets idle, the value of the variable for the call is taken into account for determining the duration of the break. (Modifications of the variable that are done when the agent is already in the break status or later will be ignored.)
CallToTransfer	Num.	Voice	If CallToTransfer = 0, the call does not need to be transferred (pure IVR call) or the transfer has succeeded. If CallToTransfer <> 0, then the call has to be transferred normally

13.3.2 INTRINSIC VARIABLES FOR OUTBOUND SERVICES

13.3.2.1 GENERAL DESCRIPTION OF THE INTRINSIC VARIABLES FOR OUTBOUND SERVICES

Some of these variables can be modified to schedule potential retries. If the script modifies a variable, its new value is stored in the dial list at the end of the call. This new value is taken into account for selecting the agent for the next call attempt.

It is therefore crucial in the script to write the correct values in these variables. However, for some of them, a default behavior is available in the case they are not written.

Description of the modifiable values:

- "CallDNIS" is automatically filled with the number to dial. If this number changes for the next retry, the script should write the new number in this variable.
- "CallPriority" and "CallPersonName" are also automatically filled and should be written only if they change for the next retry.
- **"CallResult"** is the most important variable (see § 13.3.2.5). It is automatically initialized with the Connect ***[OK]*** value.
- "CallNextCallTime" contains the date/time of the next retry (if the call result is neither Connect ***[OK]*** nor Bad number). It can be assigned during the script execution. However, if the script execution does not modify this variable, a default value is inserted. This value is computed thanks to the Waiting Time Before Next Retry property of the Service that corresponds to the result of the call.
- CallLeftRetries and CallLeftConnects are also automatically updated if the script execution does not modify any one of them.
- CallAgentId contains the identifier of the agent to select for making the call (if needed; should be empty otherwise)
- "CallTeamId" contains the identifier of the team to which the selected agent belongs (if needed; should be empty otherwise)
- There is also one intrinsic variable for each language and skill defined in the Service version. These variables contain the level that is required for the selected agent.

13.3.2.2 DESCRIPTION OF READ-ONLY INTRINSIC VARIABLES

Tableau 13.23 DESCRIPTION OF READ-ONLY INTRINSIC VARIABLES (1/4)

Variable	type	Media	Descriptions
AgentId	string	Voice, E-mail	Identifier of the agent to whom the call has been transferred
AgentName	string	Voice, E-mail	Name of the agent to whom the call has been transferred
AgentPhone	string	Voice	Phone of the agent to whom the call has been transferred
AgentExtension	string	Voice	Extension of the agent to which the call has been transferred
ServiceRSVCallNumber	Num.	Voice, Web, E-mail	Service status: Number of calls in the Reserved status
ServiceACDCallNumber	Num.	Voice, Web, E-mail	Service status: Number of calls in the DCP (conversation) status
ServiceHOLDCallNumber	Num.	Voice, Web, E-mail	Service status: Number of calls in On Hold status
ServicePCPCallNumber	Num.	Voice, Web, E-mail	Service status: Number of calls in the PCP status
ServiceIDLEExtensionNumber	Num.	Voice, Web, E-mail	Service status: Number of extensions in the Idle status
ServiceACDExtensionNumber	Num.	Voice, Web, E-mail	Service status: Number of extensions in DCP (in conversation) status
ServiceRSVExtensionNumber	Num.	Voice, Web, E-mail	Service status: Number of extensions in the Reserved status
ServiceHOLDExtensionNumber	Num.	Voice, Web, E-mail	Service status: Number of extensions in On Hold status
ServicePRVExtensionNumber	Num.	Voice, Web, E-mail	Service status: Number of extensions in Private status
ServicePrivateInExtensionNumber	Num.	Voice, Web, E-mail	Service status: Number of extensions in Private in status (receiving a private call not distributed by the ICD)
ServicePrivateOutExtensionNumber	Num.	Voice, Web, E-mail	Service status: Number of extensions in the Private out status (giving a private call outside a call campaign)
ServiceAvailableAgentNumber	Num.	Voice, Web, E-mail	Service status: Number of available agents

Tableau 13.23 DESCRIPTION OF READ-ONLY INTRINSIC VARIABLES (2/4)

Variable	type	Media	Descriptions
ServiceREADYAgentNumber	Num.	Voice, Web, E-mail	Service status: Number of agents in the Ready status
ServiceNOTREADYAgentNumber	Num.	Voice, Web, E-mail	Service status: Number of agents in the Not Ready status
ServicePCPAgentNumber	Num.	Voice, Web, E-mail	Service status: Number of agents in PCP status
ServiceBREAKAgentNumber	Num.	Voice, Web, E-mail	Service status: Number of agents in Break status
CallId	string	Voice, E-mail	Call identifier
CallTime	Date	Voice	Date/time of the beginning of the physical call
CallDialListId	string	Voice	Identifier of the call in the dial list
CallDialListCreationTime	Date	Voice	Date/time of the creation of the call in the dial list
CallImmediateCreator	String	Voice	Identifier of the agent that initiated the call creation. This identifier is only filled in if the call has been added to the list of outgoing calls on an agent's initiative. In this case, this variable contains the agent's identifier, both for the first call attempt and for possible attempts later. Otherwise (call added to the list by the service manager or an external application via API list of outgoing calls), this variable contains the empty character string.
CallScheduledCallTime	Date	Voice	Date/time for which the call was scheduled (i.e. the value of CallNextCallTime of the previous try)
CallPresentationTime	Date	Voice	Date/time of the presentation of the script to the agent
CallDisconnectionTime	Date	Voice	Date/time of the end of the physical call
CallEndPCPTime	Date	Voice	Date/time of the end of the PCP period
CallAgentScriptEndTime	Date	Voice, E-mail	Date/time of the end of the User Interface script
CallPCPDuration	Num.	Voice	Duration of the PCP period (in seconds)
CallAgentDuration	Num.	Voice, E-mail	Duration of the agent period (including PCP, excluding offline scripting) (in seconds)
CallServiceId	string	Voice, Web, E-mail	Service identifier
CallServiceVersion	Num.	Voice, Web, E-mail	Service version number

Tableau 13.23 DESCRIPTION OF READ-ONLY INTRINSIC VARIABLES (3/4)

Variable	type	Media	Descriptions
CallDisconnectionStatus	Num.	Voice	Status of the call when it has been terminated : 6=PCP; 9&10=Reserved; 11=Conversation; 12=Hold
CallDisconnectionTreeId	string	Voice	Identifier of the current tree when the call has been disconnected
CallDisconnectionNodeId	string	Voice	Identifier of the current node when the call has been disconnected
CallLatestCallResult	Num.	Voice	Result of the latest try for the call: 0=First attempt; 1=Busy; 2=No answer; 3=Connect KO; 4=Bad number; 5=Network error; 6=Connect ***[OK]***
CallLatestCallTime	Date	Voice	Date/time of the latest try for the call.
ServiceDialListNumber	Num.	Voice	Total number of calls in the dial list. This intrinsic variable gets the total number of calls in the dial list. This information will be retrieved by a query on the dial list.
ServiceDialListNotAccessedNumber	Num.	Voice	Number of outbound calls not accessed by the system yet. These calls have a call result equalling to 0 (First Attempt).
ServiceDialListNotAccessedPercentage	Num.	Voice	Ratio between the number of outbound calls not accessed by the system yet and the total number of calls in the dial list.
ServiceDialListTerminatedNumber	Num.	Voice	Number of terminated outbound calls (that will not be accessed anymore by the system). So the only calls taken into account are those whose final state is 4 =Bad number , 6=Connect ***[OK]***, 8=Canceled deleted or those for which no more retry is scheduled (because either CallLeftRetries or CallLeftConnects has reached zero).
ServiceDialListTerminatedPercentage	Num.	Voice	Ratio between the number of terminated outbound calls and the total number of calls in the dial list
ServiceDialListPendingNumber	Digital	Voice	Number of pending calls (already accessed by the system but not yet terminated). These calls have a call result different of 0=First Attempt, 4 =Bad number, 6=Connect ***[OK]*** and 8=Canceled deleted. CallLeftRetries and CallLeftConnects are also different from 0.
ServiceDialListPendingPercentage	Num.	Voice	Ratio between the number of pending calls and the total number of calls in the dial list
ServiceDialListDueNumber	Num.	Voice	Number of due calls (having a fixed and overdue next call time). These calls have a call result different from 4 =Bad number, 6=Connect ***[OK]***, 8=Canceled deleted. CallLeftRetries and CallLeftConnects are also different from 0.
ServiceDialListDuePercentage	Num.	Voice	Ratio between the number of due calls to the total number of calls in the dial list

Tableau 13.23 DESCRIPTION OF READ-ONLY INTRINSIC VARIABLES (4/4)

Variable	type	Media	Descriptions
ServiceDialListSucceededNumber	Num.	Voice	Number of succeeded calls (terminated calls having Connect ***[OK]*** as call result)
ServiceDialListSucceededPercentage	Num.	Voice	Ratio between the number of successful calls and the number of terminated calls.
ServiceDialListBusyNumber	Num.	Voice	Number of calls whose call result equals to 1 = Busy
ServiceDialListBusyPercentage	Num.	Voice	Ratio between the number of busy calls to the total number of calls.
ServiceDialListNoAnswerNumber	Num.	Voice	Number of calls whose result equals to 2 = No answer.
ServiceDialListNoAnswerPercentage	Num.	Voice	Ratio between the number of no answer calls to the total number of calls.
ServiceDialListConnectKONumber	Num.	Voice	Number of calls whose result equals to 3 = Connect KO.
ServiceDialListConnectKOPercentage	Num.	Voice	Ratio between the number of connect KO calls to the total number of calls.
ServiceDialListBadNumberNumber	Num.	Voice	Number of calls whose result equals to 4 = Bad Number.
ServiceDialListBadNumberPercentage	Num.	Voice	Ratio between the number of bad number calls to the total number of calls.
ServiceDialListNetworkErrorNumber	Num.	Voice	Number of calls whose result equals to 5 = Network error.
ServiceDialListNetworkErrorPercentage	Num.	Voice	Ratio between the number of network error calls to the total number of calls.
ServiceDialListDeletedNumber	Num.	Voice	Number of calls whose result equals to 7 = Canceled deleted.
ServiceDialListDeletedPercentage	Num.	Voice	Ratio between the number of canceled deleted calls to the total number of calls.
ServiceDialListTimeOutNumber	Num.	Voice	Number of calls whose result equals to 9 = Presentation timeout.
ServiceDialListTimeOutPercentage	Num.	Voice	Ratio between the number of presentation timeout calls to the total number of calls.
ServiceDialListNoCallServerNumber	Num.	Voice	Number of calls whose result equals to 10 = No call server.
ServiceDialListNoCallServerPercentage	Num.	Voice	Ratio between the number of no Call Server calls to the total number of calls.
CallDisconnectingParty	Num.	Voice	This variable indicates who hung up first (the agent or the called person) (1 = hung up by the agent, 2 = hung up by the called person).

13.3.2.3 DESCRIPTION OF DYNAMIC INTRINSIC VARIABLES ("CUSTOM COUNTER" TYPE VARIABLES

The value of the dynamic intrinsic variables is calculated on the basis of the value of the associated "Custom Counter" type user variable(e.g. Alarm). This value must be seen as a criteria which may or may not be respected according to its value. If the value of this global variable is zero, the criterion (Alarm) is not considered as checked. If the value is not zero (any other numerical value other than zero) the criterion (Alarm) is checked.

Tableau 13.24 DESCRIPTION OF DYNAMIC INTRINSIC VARIABLES ("CUSTOM COUNTER" TYPE VARIABLES

Variable	type	Media	Descriptions
ServiceCurrent_xxx_Calls	Num.	Voice	The total number of calls for which the criterion is respected (e.g.: the number of calls for which the value of the "Alarm" variable is different from 0)
ServiceFlow_xxx_Calls	Num.	Voice	The total number of changes, calculated over all the calls, which enabled the defined criterion to be verified. This number of changes is calculated over a time period that corresponds to the status refresh period. (e.g.: the number of calls for which the value of the "Alarm" user variable has changed from 0 to another numerical value different from 0 for a time period that corresponds to the status refresh period)
ServiceDayAccumulated_xxx_Calls	Num.	Voice	The number of calls that had the criterion verified when they were terminated (e.g.: when a call is hung up), accumulated over one day. This number only concerns calls that took place for a whole calendar day, from 00:01 to midnight. This value is set at 0 to 00:01 or when the Server starts.
ServiceHourAccumulated_xxx_Calls	Num.	Voice	The number of calls that had the criterion verified when they were terminated (e.g.: when a call is hung up), accumulated over one hour. This number only concerns calls that took place during the current hour, for example, between 08:00 and 08:59, between 15:00 and 15:59, etc.. This value is set at 0 every hour or when the Server starts.

13.3.2.4 DESCRIPTION OF READ-WRITE INTRINSIC VARIABLES

Tableau 13.25 DESCRIPTION OF READ-WRITE INTRINSIC VARIABLES

Variable	type	Media	Descriptions
CallAgentBreakDuration	Num.	Voice	The break time for the agent between two calls (in seconds, the duration is a positive number). The agent may interrupt this break time (by changing to "Ready" or "Not Ready" status) but cannot extend it. For each call, this variable will be initialized with the duration configured for the service (U-417). Any script (server script or agent script) can decide to modify this variable. At the moment when the agent gets idle, the value of the variable for the call is taken into account for determining the duration of the break. (Modifications of the variable that are done when the agent is already in the break status or later will be ignored.)
CallDNIS	string	Voice	DNIS (called number)
CallLeftConnects	Num.	Voice	Number of connections still allowed
CallLeftRetries	Num.	Voice	Number of retries still allowed
CallNextCallTime	Date	Voice	Date/time of the next retry for the call
CallPersonName	string	Voice	Name of the person to contact
CallPriority	Num.	Voice	Priority of the call (0-99)
CallQualification (see Section 13.3.2.6)	Num.	Voice	Current call qualification.
CallResult (see section 13.3.2.5)	Num.	Voice	Result of the current try.
CallAgentId	string	Voice	Identifier of the agent that has to handle the call
CallTeamId	string	Voice	Identifier of the team the agent must belong to
Call<SkillId>	Num.	Voice	Required level for the agent in the skill
Call<LanguageId>	Num.	Voice	Required level for the agent in the language

13.3.2.5 DESCRIPTION OF THE "CALLRESULT" GLOBAL VARIABLE

Description

This variable is used in outbound Service scripts only. It contains the result of the current call in a script.

As a read-write variable, "CallResult" receives an initial value at execution of the "MakeOutboundCall" node (see § 13.2.3.2) and can be modified later on by the agent script (in an "Assignment" node) (see § 13.2.4.7).

Possible values *:

Tableau 13.26 VALUES OF THE "CALLRESULT" VARIABLE

Value	Assigned by	Description
0		First attempt. This is the value for calls still present in the dial list and not yet tried: the MakeCall node never returns this value.
1	Make call node	The line was busy.
2	Agent script	No answer. The customer did not pick up the phone.
3	Agent script	Connect KO. The person who answered was not the right person.
4	Agent script	Bad number. This is not the right person's phone number.
5	Make call node	Network error. Error during transfer.
6	Make call node	Connect OK. Call successfully handled.
7	Make call node	Rescheduled. The agent decided to reschedule the call after cancelling it.
8	Make call node	Deleted. The agent decided to stop attempting the call.
9	Make call node	Timeout reached.
10	Make call node	No available Call Server resources.
11	Make call node	Attempt aborted. Dial list is unchanged.

13.3.2.6 DESCRIPTION OF THE "CALLQUALIFICATION" GLOBAL VARIABLE

Description

This numeric type variable is only used by some incoming services. It contains the qualification of a current call in a script.

As a read-write variable, "CallQualification" can be modified through the script or when the agent clicks the “nuisance call” button on his or her web interface.

Possible values *:

Tableau 13.27 VALUES OF THE "CALLQUALIFICATION" VARIABLE

Value	Description
0	Default value of the variable. Meaning that no qualification has been assigned to the call in progress.
1	Value indicating that the on-going call has been identified as a nuisance call.
Others	Values reserved for future use.

13.3.3 "RETURN CODE" VARIABLES VALUES

To find out the possible values for a "return code" variable, refer to the detailed description of the relevant node in this appendix in Section 13.2.

Note: The "Root", "GoTo", "GoSub", "End", "Return", "Label", "Address" and "DeleteVoiceMessage " nodes have no return code variable.

13.4 DETAILED PRESENTATION OF THE PREDEFINED SCRIPTS

13.4.1 LIST OF PREDEFINED SCRIPTS

The M5000 CC allows the agents to connect and manage their statuses (Ready, Not Ready and PCP) without any M5000 CC User application. To do so, they just need to call specific Services which are included in the M5000 CC.

The predefined scripts are available or unavailable, depending on the with/without IVR configuration of the system:

Tableau 13.28 SCRIPTS AVAILABLE ACCORDING TO THE WITH/WITHOUT IVR CONFIGURATION

with IVR	without IVR
• **IVRLogin**: enables agents to log in or out (see detailed description in the appendix Section 13.4.2) • **IVRStatus**: enables agents to toggle between "Ready" and "Not Ready" statuses (see detailed description in the appendix § 13.4.3) • **IVRPcp**: enables agents to toggle to "PCP" (see detailed description in the appendix Section 13.4.4) • **Conversation Recording**: involves putting the call on conference with an analog resource. (See detailed description in the appendix Section 13.4.5) • **Conference**: enables users to reserve and participate in conferences organised between several participants. (See detailed description in the appendix Section 13.4.6)	• **IVRLogin**: enables agents to log in or out (see detailed description in the appendix Section 13.4.2) • **IVRPcp**: enables agents to toggle to "PCP" (see detailed description in the appendix Section 13.4.4) **Note:** *The "Ready" and "Not ready" statuses are managed by the PBX. The agent must use the keys that are programmed on his set to toggle between the "Ready" and "Not ready" statuses. The M5000 CC's "PCP" status corresponds to the "Not Ready" status on the PBX. The agent also uses the programmed key on his or her set to toggle from the "PCP" status to "Ready" status.*

Note: The preset "Conversation Recording" script cannot be executed by an M5000 CC installed without a Dialogic card or IP resources since it requires the use of a "SaveVoiceMessage" node.

13.4.2 "IVRLOGIN" PRE-DEFINED SCRIPT

During installation, an "IVRLogin" Service is created. This Service allows the agent to change his status (Ready - Not Ready) without any M5000 CC User application. There are two trees in the script to carry out this operation:

- "IVRLogin": to enable the agent to log in or out when processing calls that arrive on IVR resources.
- "IVRLoginWithoutIVR": to enable the agent to log in or out when processing calls that arrive on inbound call pits.

13.4.2.1 CONFIGURATION WITH IVR: VERSION 1 OF THE SERVICE "IVRLOGIN" TREE

Call the DNIS of the IVR script and follow the instructions given by telephone. A DNIS must be associated with this Service through the M5000 CC Administrator application.

The agent's login is realized through the IVR script of the "IVRLogin" Service which:

- Asks for the agent alias number/password and checks their validity,
- Asks for log in/log out and performs it,
- Handles alias number/password and possible login errors.

This script contains (see Figure 13.2):

- "PlayVoiceMessage" nodes. They are used to play script messages (asking for Alias number and password, login/logout) and to play error-handling messages (wrong Alias number, etc.),
- "GetDTMF" nodes. They are used to store agent alias number and password in local variables, and to select between log in and log out,
- a "FunctionCall" node,
- "GoTo" nodes. They are used in the error handling of the script,
- "Assignment" nodes used to store calling extension value (conversion from string to numeric) in a local variable.

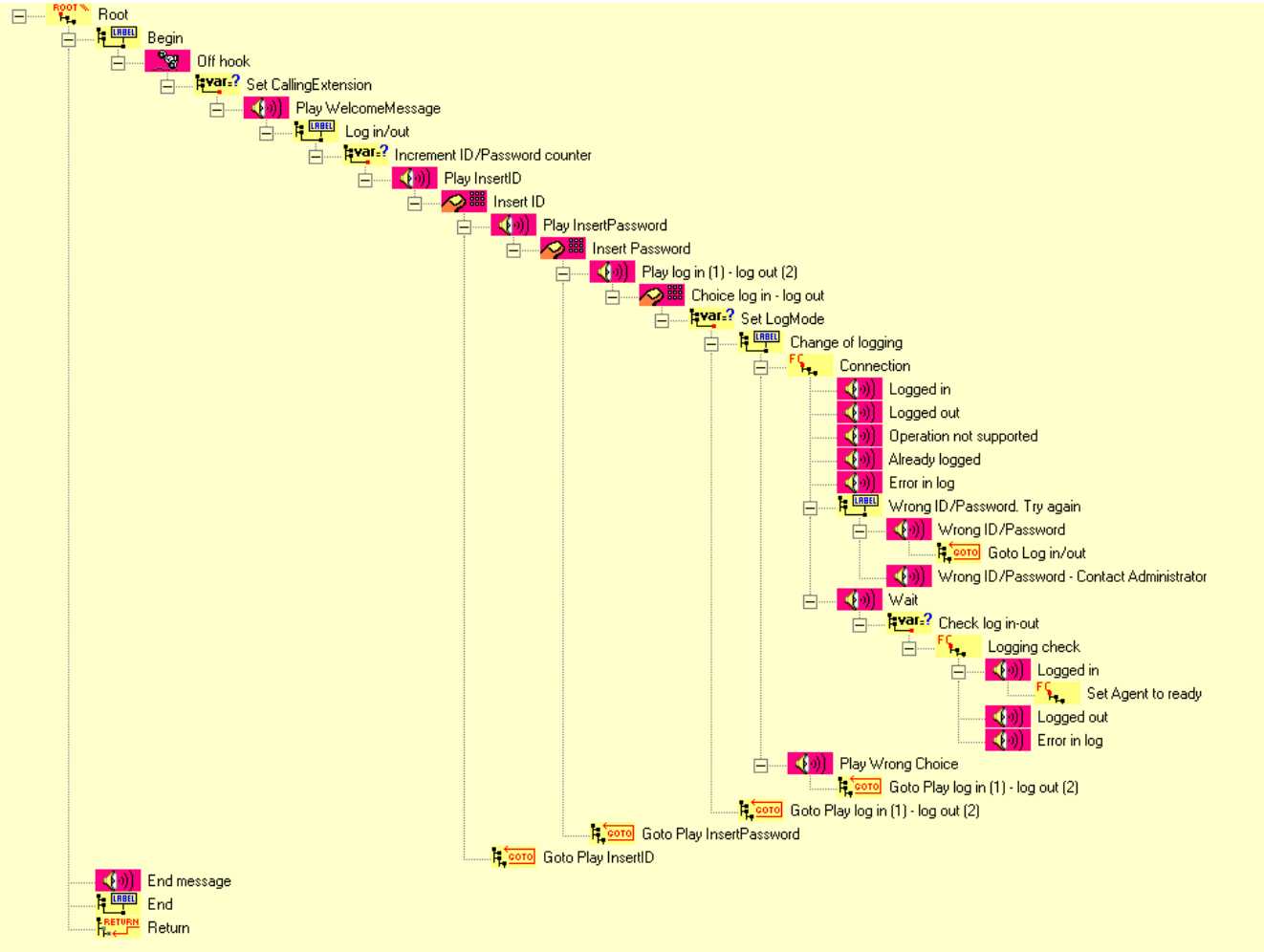


Figure 13.2 VIEW OF THE "IVRLOGIN" TREE

In this IVR script, the "Connection" node will have incoming variables (CallingExtension, UserID, UserPassword and LogMode) to select the action to be done, and outgoing (LogStatus) variable to decide which next message has to be played (error message, logged in/out,...).

In this configuration of the script, the LogMode value can be fixed (by Get DTMF) to:

Tableau 13.29 VALUES OF THE "LOGMODE" INPUT VARIABLE

LogMode	Message
1	Connection
2	Agent log out

Furthermore, in this configuration, the return status LogStatus can have the following values.

LogStatus	Message
3	Already logged in
2	Correct log out
1	Correct log in
-1	Incorrect user
-2	"Wrong password"
-3	Operation not handled
-4	Error in log in/out

Tableau 13.30 VALUES OF THE "LOGSTATUS" OUTPUT VARIABLE

13.4.2.2 CONFIGURATION WITHOUT IVR: VERSION1 OF THE SERVICE - "IVRLOGINWITHOUTIVR" TREE

Agent ID

In this tree, the user's alias and password are not obtained by direct interaction with the caller. The user identification is based on the agent's DN (CLID).

Defining agent sets

The agent sets are defined in the M5000 CC Administrator application (see Sheet U-324). You must define:

- a **"Private"** type telephone and associate it with the name of the user who will log in from it (in the ***{Owner ID}***) field,
- the phone extension.

The user-phone association may be modified at any time in the M5000 CC Administrator application by editing the telephone properties.

Note: The use of a public telephone in an "IVRLogin without IVR" Service generates an error message in the "Server log" file.

Agent login and logout

To use this Service, the agent must call a DNIS, which varies according to the operation to be carried out (login or out). Typically, the DNISes are programmed on the telephone keys. No voice message is played to the agent during the call. After the call, the agent's activity status changes and he may hang up immediately.

During M5000 CC installation, the integrator must modify the pre-recorded DNISs. To do so, he must carry out the following operations:

- in the M5000 CC Administrator application, modify the DNISes associated with the Service U-321) and
- in the M5000 CC Service Manager application, edit the "IVRLoginWithoutIVR" tree (see Figure 13.3) and integrate the new DNISes in the "Assignment" nodes (LOGIN and LOGOUT) of the "Action selection" branch in the main tree. The DNISes are used in the access conditions of the "Assignment" LOGIN and LOGOUT nodes.

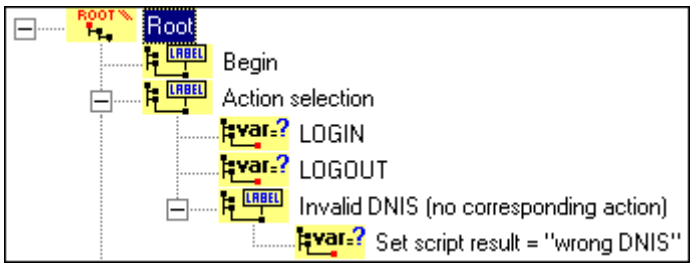


Figure 13.3 EDITION OF THE "IVRLOGINWITHOUTIVR" TREE

Error management

It is possible to analyse the result of each call to the IVRLogin "without IVR" service using the "ScriptResult" global variable. The possible values for this variable are:

Tableau 13.31 VALUES OF THE "SCRIPTRESULT" GLOBAL VARIABLE

Value	Message
0	Login or logout successful
1	Connection request but user already connected No user status change
-1	Invalid DNIS
-2	Login or logout error

13.4.3 IVRSTATUS PREDEFINED SCRIPT

During installation, a new Service "IVRStatus" is created. This Service allows the agent to change his status (Ready - Not Ready) without any M5000 CC User application. This script directly changes the status of the agent logged in on the calling extension. Like the "IVRLogin" script (see § 13.4.2), it processes possible status change errors.

In terms of configuration, a DNIS range has to be associated to this Service through the M5000 CC Administrator application.

This script contains (see Figure 13.4):

- "PlayVoiceMessage" nodes. They are used to play script messages (Ready/NotReady) and to play error-handling messages (No user logged on extension...),
- a "FunctionCall" node,
- "GoTo" nodes. They are used in the error handling of the script,
- "Assignment" nodes used to store calling extension value (conversion from string to numeric) in a local variable.

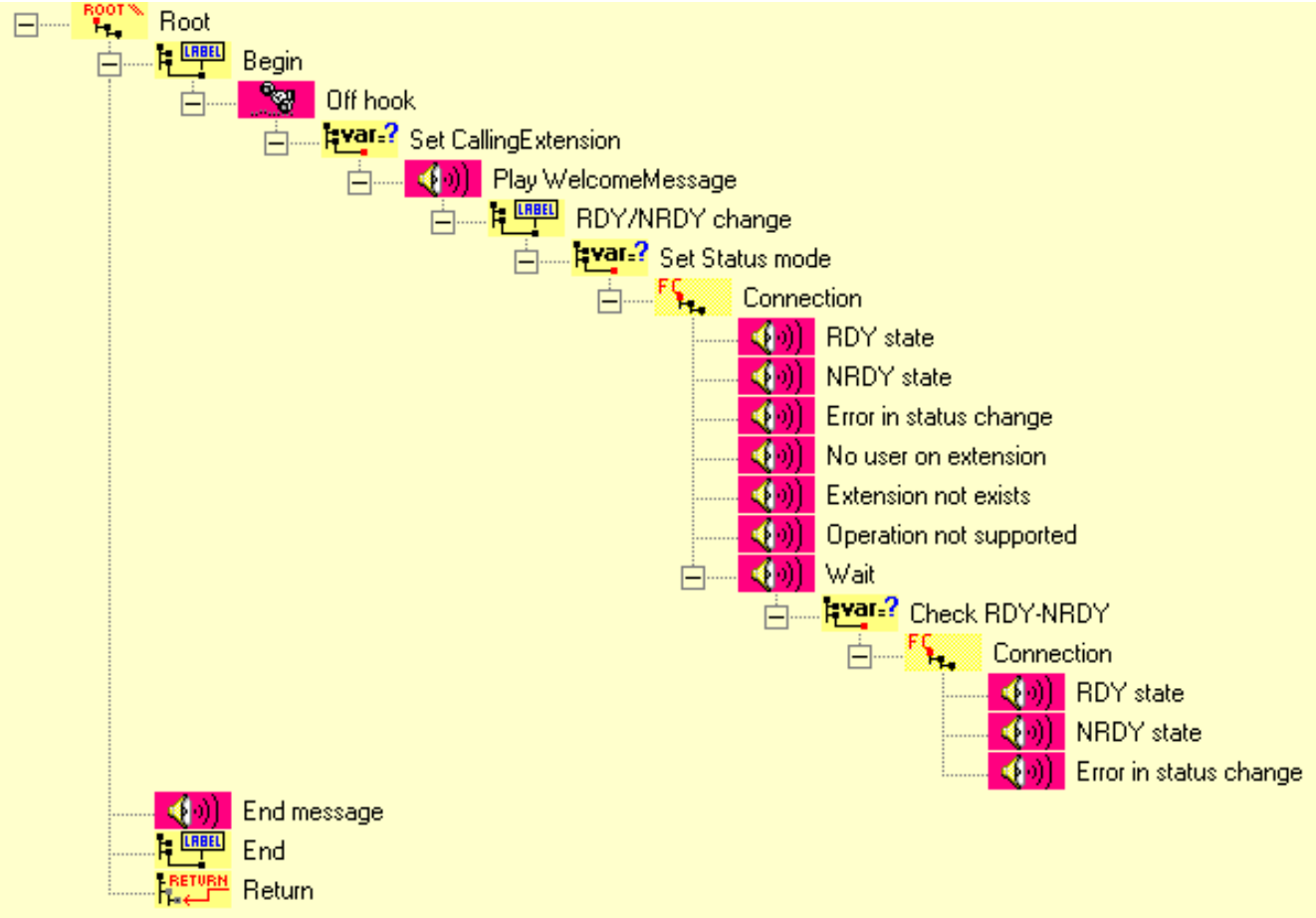


Figure 13.4 VIEW OF THE "IVRSTATUS" TREE

In this IVR script, the "Connection" FunctionCall node will have inbound variables (CallingExtension, and RDYMode) to select the action to be done, and outgoing (RDYStatus) variable to decide which message has to be played next (error message, Ready/NotReady).

The RDYMode can have the following values:

Tableau 13.32 VALUES OF THE "RDYMODE" INPUT VARIABLE

RDYMode	Message
0	Toggle Mode
1	RDY Mode
2	NRDY Mode
3	Unchanged

In the default script, RDYMode has been fixed to 0.

Furthermore, in this configuration, the return status RDYStatus can have the following values:

Tableau 13.33 "RDYSTATUS" RETURNED STATUS VALUES

RDYStatus	Message
2	Correct NRDY change
1	Correct RDY change
-1	No user logged on extension
-2	The extension doesn't exist
-3	Operation not handled
-4	Error in change

Note: The last parameter of the "FunctionCall" node in this script is "ActivityCode" (see definition of the activity code in § 1.4). By default its value is zero, but one can adapt the script to change its value (via DTMF, via variable, ...) using simple Assignment node.

13.4.4 IVRPCP PREDEFINED SCRIPT

Note: PCP is short for Post Call Processing.

When installed, a new Service "IVRPcp" is created. This Service allows the agent to change his PCP status without any M5000 CC User application. There are two trees in the script to carry out this operation:

- "IVRPcp": to enable the agent to modify his or her PCP status when processing calls that arrive on IVR.
- "IVRPcpWithoutIVR": to enable the agent to modify his PCP status when processing calls that arrive on inbound call pits.

13.4.4.1 CONFIGURATION WITH IVR: VERSION 1 OF THE SERVICE "IVRPCP" TREE

The agent's status is changed to PCP through the IVR script of the "IVRPcp" Service. This script only changes the status of the agent to PCP when the agent is in DCP status (i.e. when he is still in conversation). The IVRPcp Service is called from any extension (monitored or not), the agent introduces his alias number and is then set to PCP. Similarly to the "IVRLogin" (see § 13.4.2) and "IVRStatus" scripts (see § 13.4.3), it also handles status change possible errors.

In terms of configuration, a DNIS range has to be associated to this Service through the M5000 CC Administrator application.

This script contains (see Figure 13.5):

- "PlayVoiceMessage" nodes. They are used to play script messages (PCP) and to play error-handling messages (No call associated with this extension),
- a "FunctionCall" node,
- "GoTo" nodes. They are used in the error handling of the script.

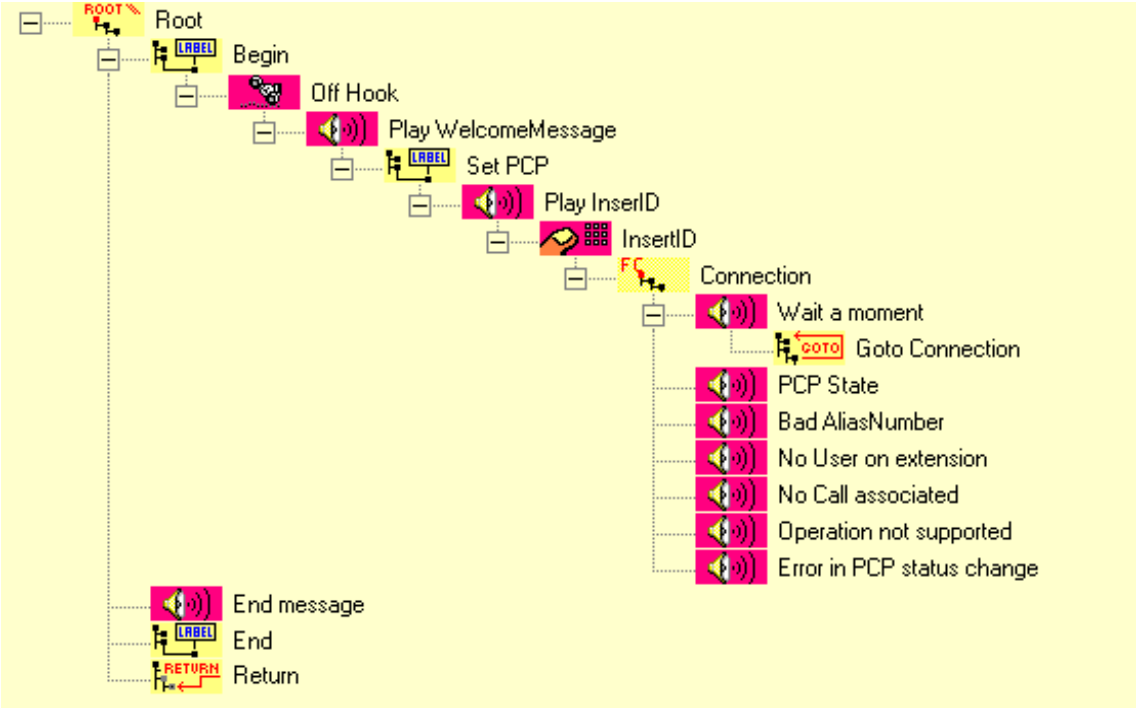


Figure 13.5 VIEW OF THE "IVRPCP" TREE

In this IVR script, the "Connection" FunctionCall node will have inbound variables (UserAliasNumber) to select the action to be done, and outbound (PCPStatus) variables to decide which next message has to be played (error message, PCP).

Furthermore, in this configuration, the return status LogStatus can have the following values.

Tableau 13.34 "PCPSTATUS" RETURNED STATUS VALUES

PCPStatus	Message
1	PCP modified correctly
-1	No agent has this ID
-2	No extension associated with this agent
-3	No call associated with this agent
-4	Operation not handled
-5	Error in PCP status change

Note: The last parameter of the "FunctionCall" node in this script is "ActivityCode" (see definition of the activity code in § 1.4). By default its value is zero, but one can adapt the script to change its value (via DTMF, via variable, ...) using simple Assignment node.

13.4.4.2 CONFIGURATION WITH IVR: VERSION 1 OF THE SERVICE "IVRPCPWITHOUTIVR" TREE

Agent ID

In this tree, the user alias and password are not obtained by interaction with the caller. The identification of this user is based on the agent DN (CLID).

Change to PCP

To change to PCP status, the agent must call the DNIS of the "IVRPcpWithoutIVR" Service from his phone.

The following conditions must be checked for the agent status to be modified:

- the agent is logged into the Server and associated with the phone,
- the agent is logged in,
- the agent is ready,
- the agent must be in conversation.

Note: These conditions are exactly the same as those used to activate the [PCP] button on the M5000 CC User toolbar.

No voice message is played to the agent during the call. After the call, the agent's activity status changes and he may hang up immediately. As soon as the agent has finished his post call processing, he must return to Ready status by using the programmed key on his set.

Tree

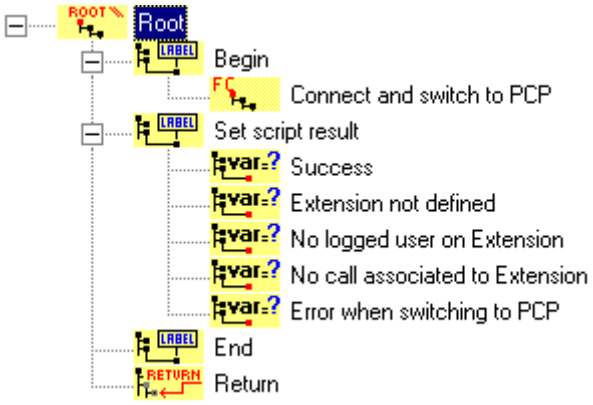


Figure 13.6 EDITION OF THE "IVRPCPWITHOUTIVR" TREE

Error management

It is possible to analyse the result of each call to the IVRLogin "without IVR" service using the "ScriptResult" global variable. The possible values for this variable are:

Tableau 13.35 VALUES OF THE "SCRIPTRESULT" GLOBAL VARIABLE

Value	Message
0	Change to PCP status successful
-1	Extension not defined in the System
-2	No user logged in to the caller extension
-3	No call associated with the caller extension
-4	Login error during change to PCP

13.4.5 CONVERSATION RECORDING PREDEFINED SCRIPT

This Service enables agents to record a conversation on request. A consultation call is made to the DNIS of this Service. The script picks up the call, sets up the conference and records the conversation.

The recordings will be:

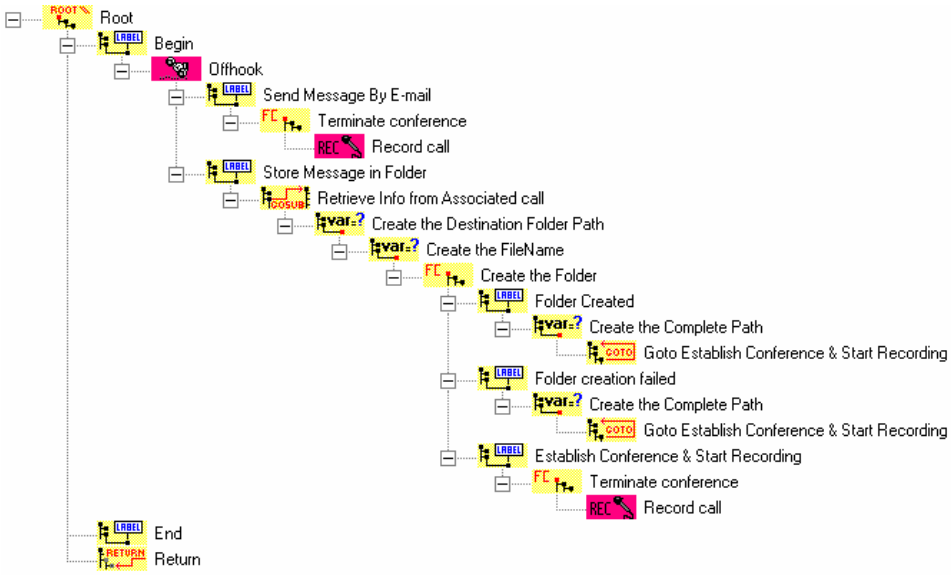
- Backed up in a general directory specified by the user (some sub-directories are automatically created for each agent)
- Sent by e-mail

To specify whether to send an e-mail or back up the records in a directory, there are three global variables to update.

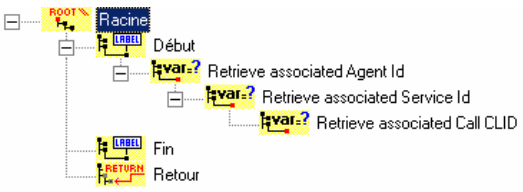
- **SendMessageByEmail** :
  - 0 = record backed up in the directory
  - 1 = record sent by e-mail
- **EmailAddress** : e-mail address to which the record must be sent.
- **MessagesFolderPath** : basic directory in which the records must be backed up. A sub-directory will be created automatically per agent.

Detailed script of Service Conversation Recording :

Main tree



GetAssociatedInfo tree



The script principle is as follows:

- Finding the information associated with the agent (Importing the associated call).
- Setting up a conference between the caller, agent and Dialogic resource (call function)
- Recording the conversation (SaveMessageVocal)
- Backing up the recording or sending it by e-mail

1 Backup in a directory

In this case, information about the agent (AgentId, ServiceId, CLID) is obtained via the **GetAssociatedInfo** tree which uses the “Import from associated call” function of the assignment node (see Section 8.3.1.10).

Once this information is retrieved, a directory in the agent’s name is created using the Function Call node (AgoraSystem, code 10) (see Section 13.2.4.10.6). If for any reason, the agent information cannot be retrieved, an "Unknown" directory will be created and it is in this directory that the recording will be backed up. If the directory cannot be created, the message will be backed up in the basic directory.

The conference is set up using the Function Call node. The "AgoraSystem" Dll will be used with a code 6. The input arguments are the "CallId" variable and the consultation call termination mode ("conference" mode = 1). The conference is received as the result return argument.

The recording is made using the “RecordVoiceMessage” node, and this latter is backed up in the directory of the corresponding agent. The backup format is as follows:

Agt AgentId Srv ServiceId CLID CallCLID - CallId.wav

2 Transmission by e-mail

In this case, information about the agent will be obtained automatically by the RecordVoiceMessage node, and it will be entered automatically in the e-mail.

The conference is set up in the same way as in point 1).

Conversation recording is only available for incoming calls. (It is not possible to record outgoing calls.)

Remark:

- the service in which the node is used corresponds to the one defined for agent recording:

  The link is set up based on the DNIS associated with the agent recording.

  In this case, the same principle is used as for importing the associated call, and the information displayed in the e-mail is information about the associated call (the agent who records the call).

13.4.6 PREDEFINED “CONFERENCE” SCRIPT

During installation, a conference bridge service is created and put into production by default. This service enables users to reserve and participate in conferences organised between several participants. Two distinct versions of this service are taken into account:

- A first version which uses the Text-To-Speech function to execute most of the “PlayVoiceMessage” nodes in the script
- A second version without Text-To-Speech.

The script is made up of:

- An "Off-hook" node which is used to pick up the call
- A first “FunctionCall” node used to find, thanks to the DNIS, the language chosen for the conference when it was being reserved (see the next section). All the voice messages will then be played in this language. The "AgoraSystem" DLL with code 8 will be used. The input argument is the dialled DNIS. As return argument, the language associated with this DNIS in the conference service is received:
- A series of “PlayVoiceMessage” nodes to welcome the caller and prompt him or her to enter his or her authentication code
- A DTMF node, to retrieve the code entered by the caller
- A second “FunctionCall” node used to check the authentication code entered by the caller and find the corresponding conference. The "AgoraSystem" DLL with code 9 will be used. The input argument is the code specified by the caller. The return code will be:
  - 0 if the code is correct
  - -1 if the code does not correspond to any conference (incorrect code)
  - -2 if a participant is already connected to a conference with this code
  - -3 if the conference start time is not yet reached
- A Conference node for managing the conference in progress.

Tree

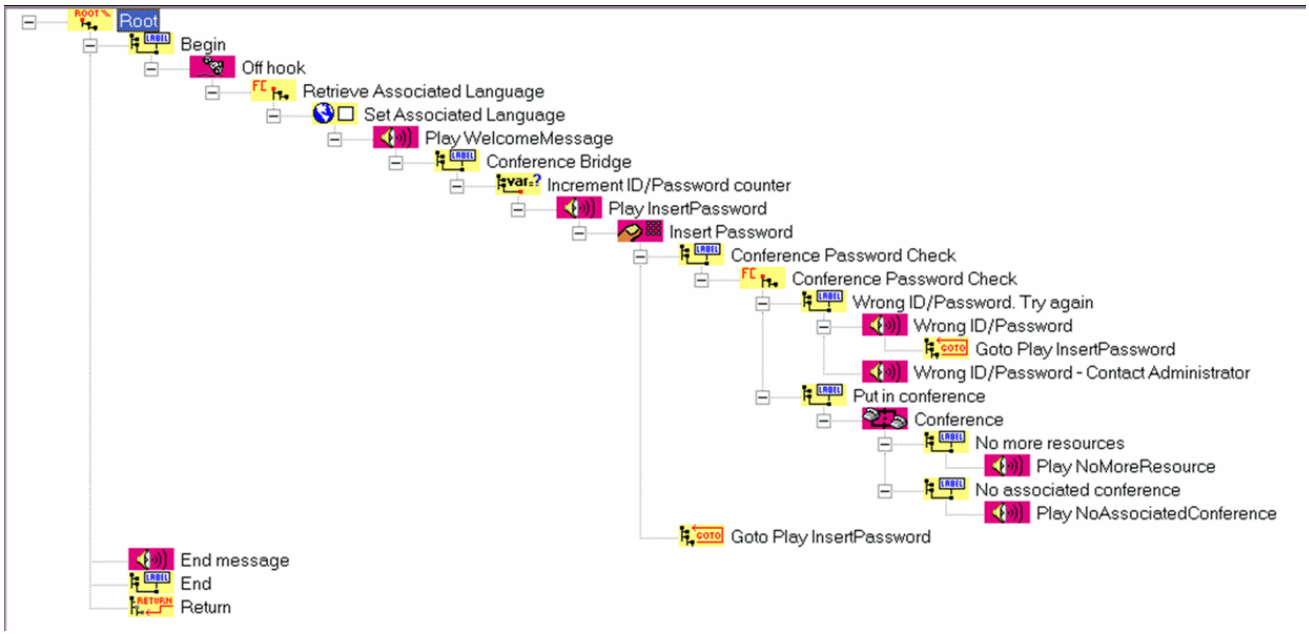


Figure 13.7 EDITING THE "CONFERENCE BRIDGE" TREE

13.5 SCRIPT EXAMPLES

This appendix presents 3 examples of complete scripts:

- Simple sample script(see § 13.5.1):

  This sample shows how to transfer customers to agents depending on their language.

- Sample script: Secured service (see § 13.5.2):

  This sample script is related to an inbound Service available only for registered customers. This Service provides help for the Java and C++ programming languages.

- Sample script: Supermarket (see § 13.5.3):

  This sample script is related to an outbound Service in a supermarket promotion department. When a customer purchases goods in this supermarket, he earns points. At regular intervals, the supermarket calls its clients and proposes them to exchange their collected points for a gift.

13.5.1 SIMPLE SAMPLE SCRIPT

Description

When a customer calls this Service, he is played a welcome message in English and in French. Then he can select the language of his choice by entering a number on his phone pad. Then the call is transferred to an agent who has at least a Low knowledge level in the selected language. If there is no available agent meeting this condition, the script ends.

Call server tree

This simple tree is composed of a single branch starting from the Begin node.

Click any node to go to the corresponding comment.

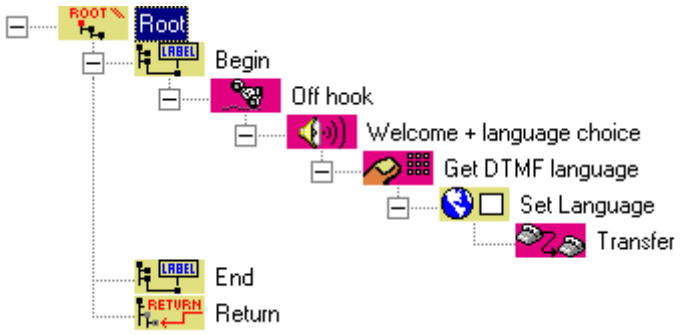


Figure 13.8 EDITION OF A SIMPLE TREE

Tree construction

 Off Hook (see § 13.2.2.2)

Since no data processing is needed before the communication can be established between the caller and the system, the OffHook node is placed at the beginning of the tree.

 Welcome+LanguageChoice (PlayVoiceMessage, see § 13.2.2.4)

Here is the specific part of this "PlayVoiceMessage" node:

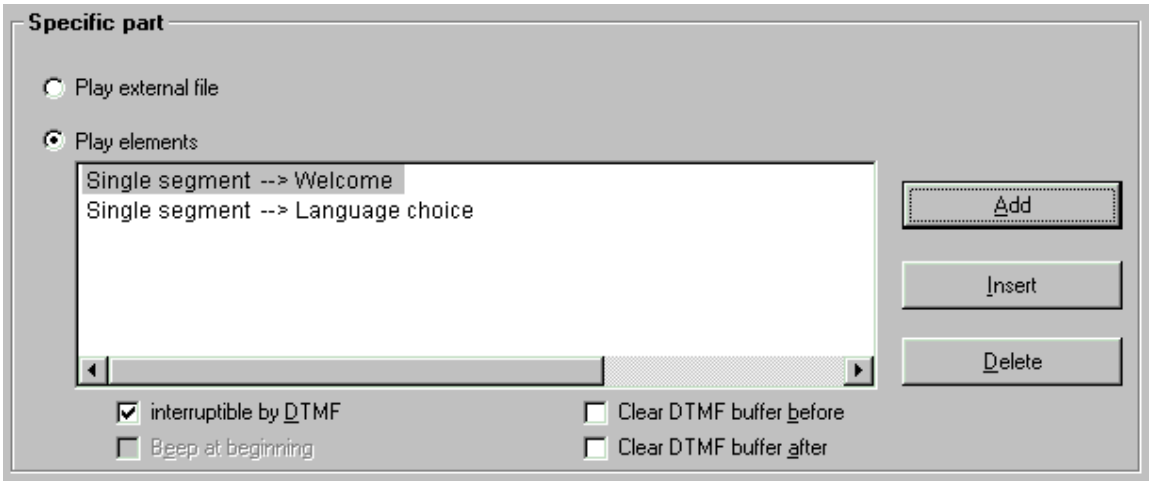


Figure 13.9 SPECIFIC PART OF THE "PLAYVOICEMESSAGE" NODE

This node plays a voice message composed of two parts:

- an introductory message to the caller,
- how to select the chosen language using the keypad: by typing 1 for English or 2 for French.

In order to let the caller enter his choice without having to wait for the messages to be finished, ***[Interruptible by DTMF]*** is checked and ***[Clear DTMF buffer after]*** is cleared. So doing, digits previously entered by the caller are erased: the ***[Clear DTMF buffer before]*** option is checked.

Note: Both messages will be played, first in one language first and then in the other language. If the two messages are to be played separately (i.e. the welcome message in the two languages first, and then the Language choice message), two PlayVoiceMessage nodes must be used.

 GetDTMFLanguage (GetDTMF, see § 13.2.2.3)

In the "Generic part" (see § 13.2.1.2) of this node, the Return code variable is chosen as a local variable of String type. This variable must have been previously defined. It will contain the digit entered by the caller, and will be used in the next node only: this is why a local variable (see § 8.5.6.3.2) has been selected for this purpose.

In the Specific part of this node, the parameters of the DTMF sequence are specified. A single digit is expected, so no "Termination digit" is specified and the "Max number of digits" is set to 1.

The caller has 5 seconds to enter the number trough his keypad. If this time is exceeded, an error code will be returned in the return code variable.

 SetLanguage (AutoLanguage, see § 13.2.4.9),

Here is the specific part of this "AutoLanguage" node:

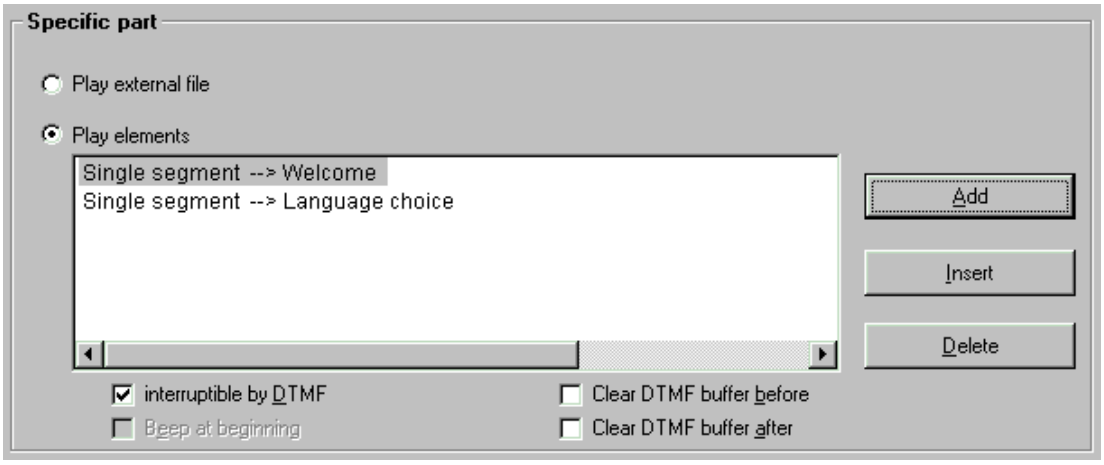


Figure 13.10 SPECIFIC PART OF THE "PLAYVOICEMESSAGE" NODE

The language is selected using the digit value entered by the caller.

The specific part of the AutoLanguage node is evaluated in the same way as the access condition.

 TransferToAgent (TransferCall, see § 13.2.2.7)

This transfer is very simple. Here are the options selected in the "TransferCall" node:

- Destination: Service member
- Agent must be in a set of teams: No
- Required language level: 0
- Type of transfer: Monitored transfer
- Presentation timeout: 10 seconds

Other options keep their default value.

The last two options in the above list have a strong impact on the expected behavior of the agent: if he is available and has not answered the call within 10 seconds, the transfer will be done to another agent and if the agent is already the third to which the transfer is done, the transfer fails.

Caution: *This script is not robust at all. Each node can produce many errors, none of which are dealt with. The other sample scripts show some error handling techniques.*

13.5.2 SCRIPT EXAMPLE : SECURED SERVICE

Description

This sample script is related to an inbound Service available only for registered customers. The company offering this Service provides help for the Java and C++ programming languages.

Two phone numbers (DNIS) allow customers to access this Service, depending on their preferred language: 5209 for English and 5210 for French.

Registered customers are authenticated by their personal code. This code is a 7-digit number. An external Server application: the authentication Server, handles the validation process. This Server receives UDP messages containing integer numbers, checks their validity and returns a UDP message containing 0 (refused) or 1 (accepted).

When a customer calls the Service, he passes through an identification phase.

1 He types his personal code on his phone pad.

0 An external function (in the "AgoraCustomer" DLL) converts the code (a digit sequence) to an integer number.

0 The integer code is sent to the authentication Server in a UDP message. The destination address of the Server consists of the IP address: 007.007.007.007 and the port number: 8080. The server recognizes authentication messages by their value 2001 in the Code field of the header.

0 The return value is received. If the code is refused, the customer can try again.

0 Three consecutive refused attempts end the script immediately.

After being successfully authenticated, the customer has three possibilities. He or she can:

- talk to an agent specialized in the Java language, **or**
- talk to an agent specialized in the C++ language, or
- record a message. Recorded messages are sent by e-mail to the following address: VoiceMailBox@ThisCompany.be

Implementation

- The script implementing the above specifications is made up of two IVR trees:
  - the main IVR tree is the starting tree for the script (see § 13.5.2.1),
  - The Identification tree implements the authentication phase (see § 13.5.2.2).
- In this sample script, more elaborate error handling techniques are used (see § 13.5.2.3).

13.5.2.1 MAIN "M5000 CC MEDIA SERVER" TREE

Tree:

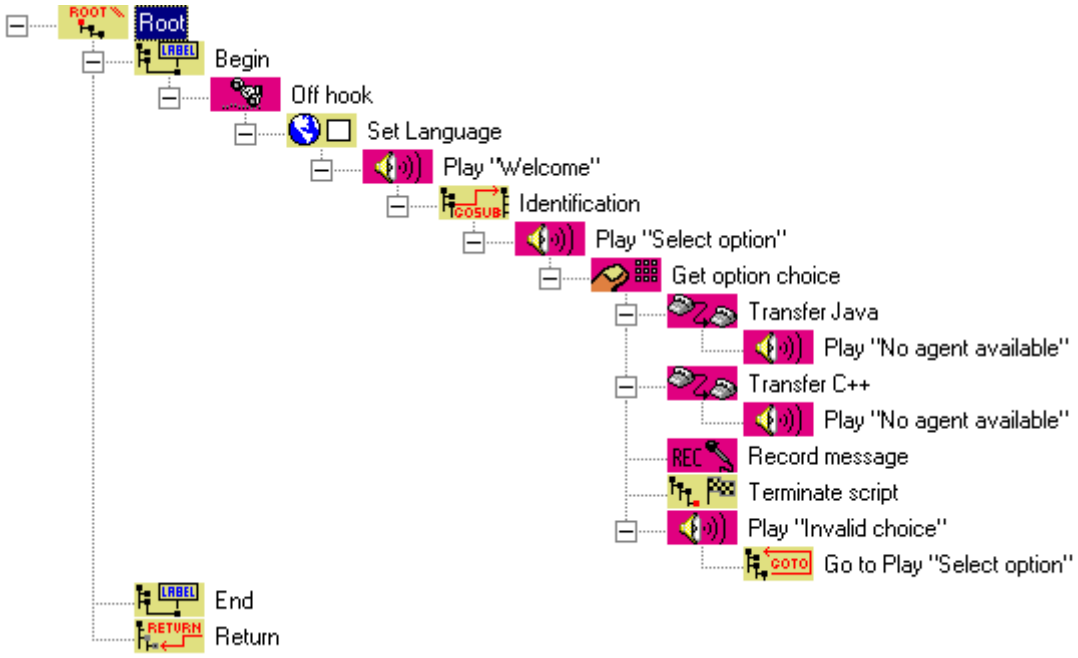


Figure 13.11 EDITION OF THE MAIN TREE IN THE SECURED SCRIPT EXAMPLE

Tree construction

Off Hook (see § 13.2.2.2)

When the system receives a call, the first step is to pick up the phone.

SetLanguage (AutoLanguage, see § 13.2.4.9),

To set the language to be used in the subsequent nodes, the script uses a different technique than the one used in the Simple sample script (see § 13.5.1): the number dialed by the customer to reach the Service specifies the script language.

Here is the specific part of this "AutoLanguage" node:

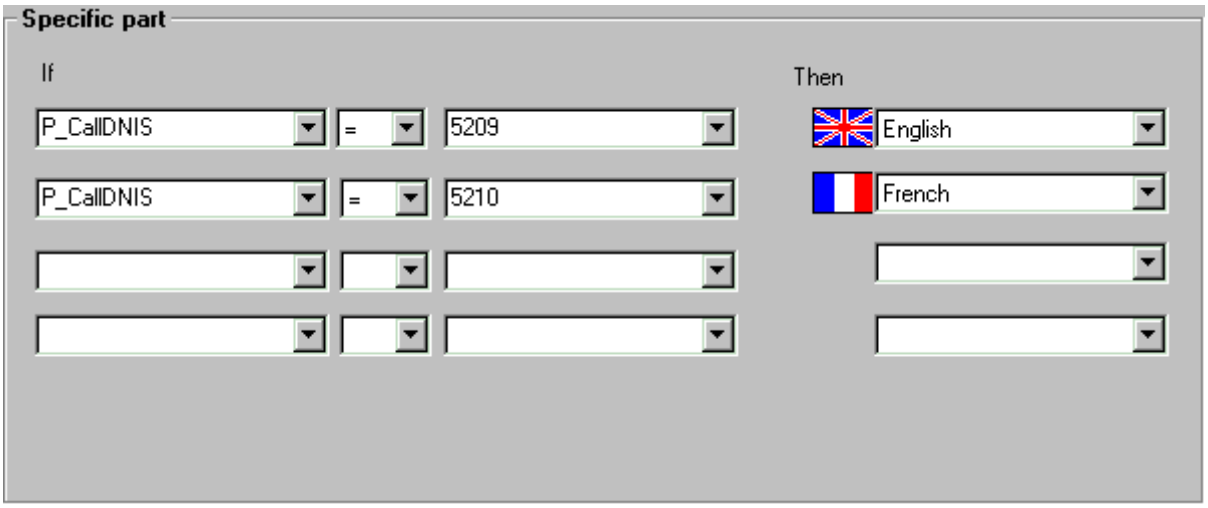


Figure 13.12 SPECIFIC PART OF THE "AUTOLANGUAGE" NODE

The two comparisons defining the language are based on the global variable CallDNIS. This String variable

receives a value from the CSTA application at the beginning of the call, representing the phone number dialed by the customer.

 Play"Welcome" (PlayVoiceMessage, see § 13.2.2.4)

This node is a common PlayVoiceMessage node, playing a single element message.

 Identification (GoSub, see § 13.2.2.4)

This Gosub node starts a secondary tree that will check whether the customer is registered. Here is its specific part: it merely specifies the name of the secondary tree to be started: CallerIdentification (see § 13.5.2.2).

Putting the identification procedure in a separate tree is not mandatory. However, this structure has many advantages:

- the main tree is much easier to read, as well as the identification tree,
- it is not necessary to read the identification tree to understand its purpose: knowing that if the execution flow returns to the main tree, the caller has been authenticated is sufficient,
- the identification process can be modified later without any change to the main tree. Only the identification tree has to be modified.

 Play"Select option" (PlayVoiceMessage, see § 13.2.2.4)

This common PlayVoiceMessage node tells the customer to choose one of the options available in this Service: help on the Java language (1), help on the C++ language (2), leave a message (3) or quit (4).

Since a GetDTMF node immediately follows this node, the [Interruptible by DTMF] and ***[Clear DTMF buffer before]*** check boxes are selected. However, the ***Clear DTMF after*** option must not be selected.

 GetOptionChoice (GetDTMF, see § 13.2.2.3)

This GetDTMF node captures the customer's choice. A single digit has to be entered, so the Max number of digits is set to 1 and no Termination digit is selected (value: None).

 TransferJava (TransferCall, see § 13.2.2.7)

In the generic part of this "TransferCall" node (see § 13.2.1.2)s, the access condition involves the number the customer entered in the previous node.

The specific part defines the parameters of the transfer to an agent:

- the transfer destination is a Service member (in the ***{Destination}*** tab),
- the agent must not be in a set of teams (in the ***{Destination}*** tab),
- the required language level of the agent (in the current language, set in the preceding AutoLanguage node, see § 13.2.4.9) must be High,
- the required skill level of the agent in the Java knowledge skill must be "Low",
- no preference options are defined (in the ***{Preferences}*** tab).

 TransferC++ (TransferCall, see § 13.2.2.7)

This TransferCall node is identical to the above node, except that the required skill level of the agent in the **C++** knowledge skill must be "High".

 RecordMessage (SaveVoiceMessage, see § 13.2.2.8)

The access condition of this "SaveVoiceMessage" node involves the number typed by the customer in the previous node.

In the specific part, the destination address of the recorded message is specified: VoiceMailBox@ThisCompany.be

Recording options are also defined in the Options tab:

- The recording is ***[Interruptible by DTMF]***, so the customer can terminate his message by pressing any key on his phone pad. The following option is of no interest: the ***[Clear DTMF buffer after]*** option is checked.
- The recording is ***[interruptible by silence]*** (5 seconds).

 TerminateScript (End, see § 13.2.4.5)

This "End" node is executed if the customer has typed a 4 on his phone pad: it ends the call.

 Play"Invalid choice" (PlayVoiceMessage, see § 13.2.2.4)

This common PlayVoiceMessage node is executed if the number dialed on the phone pad was not one of the available choices. No access condition is defined in its generic part (see § 13.2.1.2), because the four brothers of this node have been tested before. If the access conditions of the four brothers are evaluated to False, the number typed by the customer was not between 1 and 4.

The message played by this node invites the customer to try again.

 Play"No agent available" (PlayVoiceMessage, see § 13.2.2.4)

This Play voice message node is executed if the preceding TransferCall node could not be executed and returned an error code of -3:

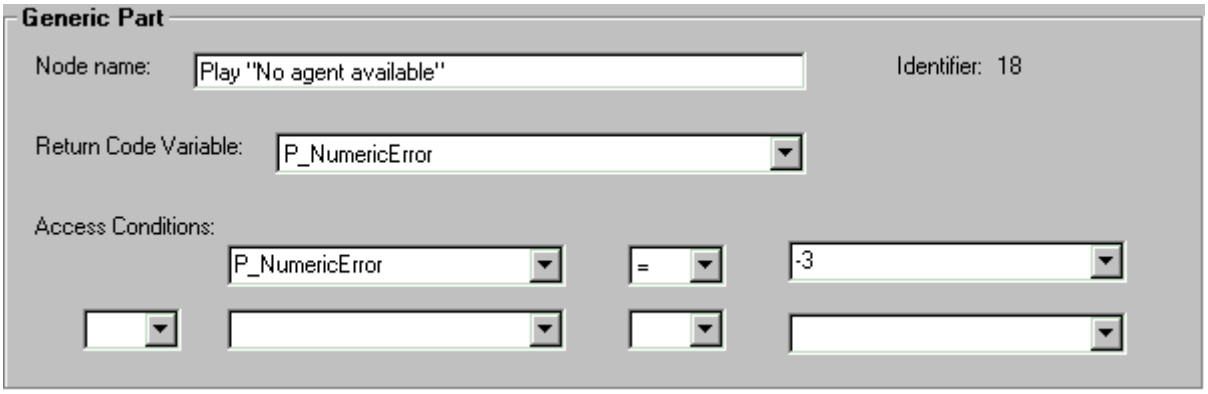


Figure 13.13 SPECIFIC PART OF THE "AUTOLANGUAGE" NODE

This is a simple case of error handling. Since no agent could be found for transferring the call to, a message is played to the customer before the script ends.

Other behaviours than this PlayVoiceMessage node could be implemented:

- a second TransferCall node with less language and skill requirements,
- a "GoTo" node with the "SaveVoiceMessage" node,
- etc.

 GoToPlay"Select option" (GoTo, see § 13.2.4.3)

This node redirects the execution sequence to an ancestor node (see Play"Select option" above). If the customer entered a wrong number on his phone pad, he can try again.

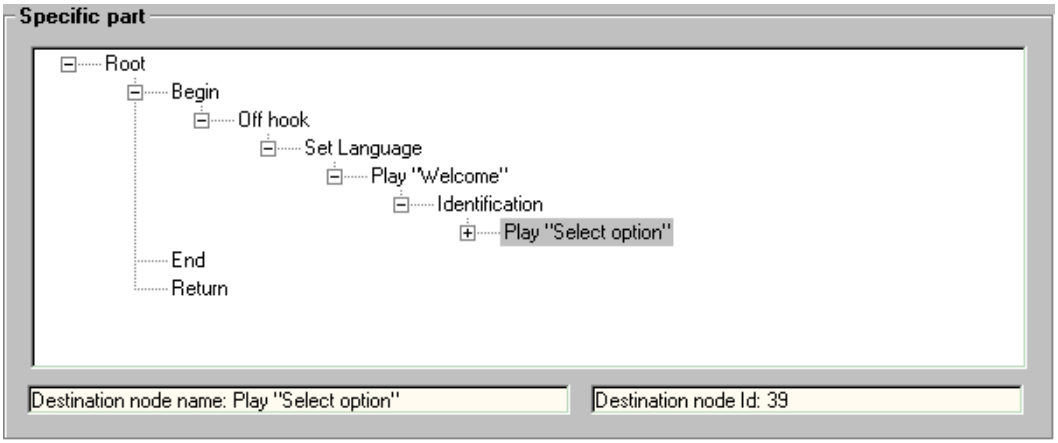


Figure 13.14 SPECIFIC PART OF THE "GOTOPLAY"SELECT" OPTION"

13.5.2.2 IDENTIFICATION TREE

Tree:

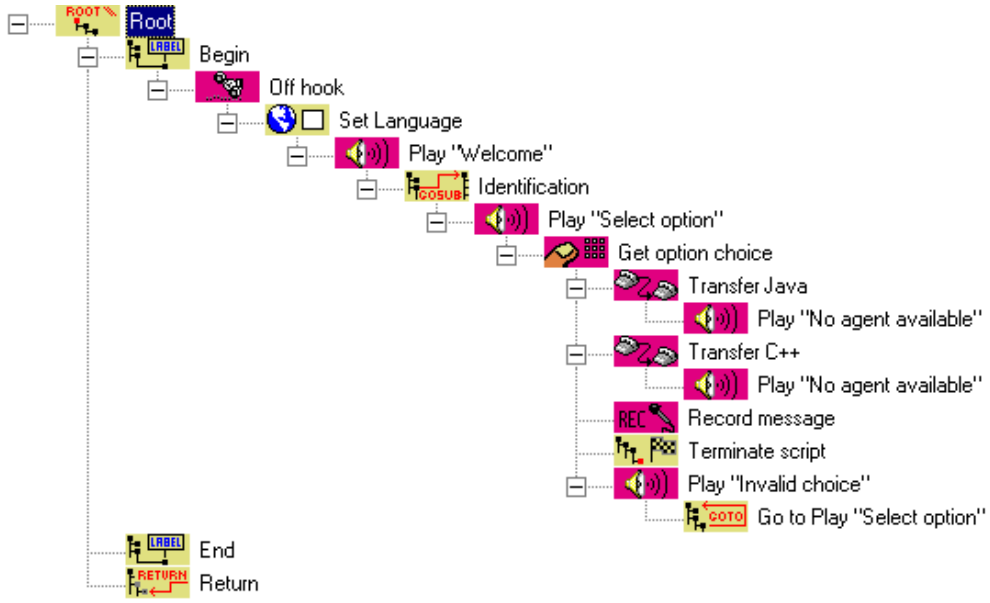


Figure 13.15 EDITION OF THE IDENTICATION TREE IN THE SECURED SCRIPT EXAMPLE

Tree construction

InitializeCounter (Assignment, see § 13.2.4.7)

A code entry successive attempts counter is initialized at the start of this tree ("**T_AttempsCounte**r" field in the ***{Simple assignment}*** area set to "**1**").

This initialization could also have been done upon variable declaration, by specifying its initial value. This initial value is then assigned to the variable when the corresponding tree is created.

Play"Enter code" (PlayVoiceMessage, see § 13.2.2.4)

The message is composed of a single element, previously defined in the User prompts list.

This node is followed immediately by a "GetDTMF" node. In order to let the caller type his personal code without having to wait for the message to be finished, the ***Interruptible by DTMF*** option is checked and the ***Clear DTMF buffer after*** option is cleared. However, digits typed prior to this node execution are erased: the ***Clear DTMF buffer before*** option is checked.

 TypeCode (GetDTMF, see § 13.2.2.3)

In the specific part of this node "GetDTMF" saves the customer's confidential code (7 digits) followed by the hash sign (#) in the ***{Termination digit}*** field. This particular syntax should be explained to the caller in the previous message.

In the generic part (see § 13.2.1.2) of this node, the "StringDTMF" local variable plays the role of the Return code variable.

 StringToNumber (Assignment, see § 13.2.4.7)

The value returned by the GetDTMF node has to be converted into an integer number before being sent to the authentication Server.

The ***[Conversion]*** and the ***[String to numeric conversion]*** options are checked.

In the first drop-down list (on the left), the NumberDTMF local variable is selected and in the second drop-down list, the StringDTMF local variable is selected.

 SendCodeToAuthenticate (SendUDP, see § 13.2.2.6)

In the specific part of this "SendUDP" node:

1 ***{Header}*** tab:

- The ***Identifier*** of the message header is set to Automatic: it will be generated by the system.
- This ***{Identifier}*** is not used in subsequent nodes of the tree, so ***[Return Id]*** is not checked.
- The ***Code*** value is set to 2001 (as specified).

0 ***{Destination}*** tab:

- The ***{IP address}*** is set to 007.007.007.007
- The ***{IP port}*** is 8080.

0 ***{Data}*** tab:

The NumberDTMF variable is selected in the Data list. At run-time, it contains the code entered by the customer, converted to Number type by the previous node.

0 ***{Local socket}*** tab:

In this example, we suppose that a socket called MySocket is devoted to the UDP communication. This name is entered in the ***{Local socket}*****tab.**

 GetAuthenticationResult (GetUDP, see § 13.2.2.5)

In the specific part of this "GetUDP" node:

1 ***{Header}*** tab:

No variable is linked with the ***Identifier*** part of the message header: the Identifier list box is set to None.

The HeaderCode numeric variable is defined to store the Code part of the message header. In the current example, this variable is not used later.

0 ***{Source}*** tab:

The address of the Server is defined in the ***Source}*** tab:

- The ***{IP address}*** is set to 007.007.007.007
- The ***{IP port}*** is 8080.

0 ***{Data}*** tab:

The CheckIdResult numeric variable is defined to store the message Data. This number is the answer of the authentication Server.

0 ***{Local socket}*** tab:

This node uses the same socket (called MySocket) as the "GetUDP" node (see § 13.2.2.6). This name is entered in the ***{Local socket}*** tab.

IdentificationOK (Label, see § 13.2.4.8)

In the generic part (see § 13.2.1.2) of this "Label" node, the access condition is used to test the answer of the authentication server. This answer (stored in the CheckIdResult variable) is either 1 for Authenticated or 0 for Not authenticated. The branch starting from this node can only be accessed if the received answer equals 1 (or differs from 0).

BackToMainTree (Return (see § 13.2.4.6)

Since the code entered by the customer was valid, he can access the Service. This node ends this tree; execution continues in the main Call Server tree in the successor of the Gosub node.

IdentificationKO (Label see § 13.2.4.8)

In the generic part (see § 13.2.1.2) of this "Label" node, the access condition is used to test the answer of the authentication server. This answer (stored in the CheckIdResult variable) is either 1 for Authenticated or 0 for Not authenticated. The branch starting from this node can only be accessed if the received answer equals “0” (or differs from “1”).

NextAttempt (Label, see § 13.2.4.8)

In the generic part (see § 13.2.1.2) of this "Label" node, the access condition is used to test the number of attempts to enter the customer's code (stored in the "AttemptsCounter" variable). The branch starting from this node can only be accessed if this number is less than 3.

IncrementCounter (Assignment, see § 13.2.4.7)

In the specific part of this node, the number of attempts increments by one.

GoToPlay"Enter code" (GoTo, see § 13.2.4.3),

This "GoTo" node allows the customer to go back to the Play"Enter code" node (see above in the second node in this tree), in order to type his personal code again.

NoMoreAttempts (Label, see § 13.2.4.8)

In the generic part (see § 13.2.1.2) of this "Label" node, the access condition is used to test the number of attempts to enter the customer's code already made by the customer (stored in the "AttemptsCounter" variable). The branch starting from this node can only be accessed if this number is greater or equal to 3.

Play"Identification failed" (PlayVoiceMessage, see § 13.2.2.4)

This node is a common PlayVoiceMessage node, playing a single element message. The message tells the customer that he could not be authenticated and that the call will be terminated.

TerminateScript (End, see § 13.2.4.5)

The "End" node terminates the execution of the current tree.

ToDefine Local variables

Here is the list of local variables (see definition in § 8.5.6.3.2) defined in this tree:

Tableau 13.36 LIST OF LOCAL VARIABLES USED IN THE IDENTIFICATION TREE

Variable	Type	Description	Used in ...
AttemptsCounter	Numeric	Number of remaining attempts to enter personal code.	Initialize counter Next attempt No more attempts Increment counter

Tableau 13.36 LIST OF LOCAL VARIABLES USED IN THE IDENTIFICATION TREE

StringDTMF	String	Code entered by the customer using his phone pad.	Type code StringToNumber
NumberDTMF	Numeric	Code converted from *String to Number type.*	StringToNumber Send code to authenticate
CheckIdResult	Numeric	Result of the code authentication performed by the Server.	Get authentication result
FunctionReturnValue	Numeric	Storage for return value.	StringToNumber
HeaderCode	Numeric	Storage for the Code part of the UDP message header.	Get authentication result

13.5.2.3 ERROR HANDLING

In the Simple sample script (see § 13.5.1), no error handling was integrated in the tree. The current example uses two techniques to improve script robustness:

1 the test of return values after execution of critical nodes

0 the use of global variables

Test of the return value

Most nodes assign an error code value in their return code variable if the execution fails. A robust tree should handle as many error cases as possible, to avoid abrupt call termination.

In this tree, a return value test is performed only after execution of the TransferCall nodes (see the previous Play"No agent available" node). A successor of these nodes is placed in the tree: its only task is to test the return code value and to handle a typical error case (no agent available).

This type of error handling is interesting for error cases, allowing the call to be continued. Typical handling procedures are:

- retry, or
- propose another action to the customer, or
- play a message before terminating.

Global variables

Error tracking can also be done with global variables included in the statistics (only when the standard statistics database is used).

This sample script uses two global variables devoted to error handling: **"NumericError"** and **"StringError".** These variables are used as return code variables in all codes that can return an error value (see for example the generic part (in Section 13.2.1.2) of the "Transfer Java" node of the main tree (see Section 13.5.2.1).

The error global variables are defined with an initial value of 0 (meaning "no error"), and are included in the statistics (only when the standard statistics database is used). As a consequence, their final value (when the call ends) is recorded in a database, and can be displayed in a report for later examination.

13.5.3 SCRIPT EXAMPLE : SUPERMARKET

Description

This sample script is related to an outbound Service in a supermarket promotion department. When a customer purchases goods in this supermarket, he earns points. At regular intervals, the supermarket calls its clients and proposes them to exchange their collected points for a gift.

Here is the scenario of a typical call:

- The agent tells the customer how many points he has collected so far.
- The customer has to choose how many points he wants to spend on the gift, and the agent enumerates the available gifts he can afford for this amount.
- Eventually, the customer chooses one of these gifts.

Supermarket database

A Microsoft Access database (SupermarketDatabase.mdb) stores the information about customers and gifts in two tables, the Customers table and the Gifts table.

The **"Customers"** table stores the information about customers in two fields:

- **Name** which is the primary key of this table,
- **Points** collected so far by the customer.

This is how this table could look:

Tableau 13.37 EXAMPLE OF A "CUSTOMERS" TABLE

Name	Points
Bilbo	268
Frodo	1000
Gandalf	3412

The **"Gifts"** table stores the information about gifts in three fields:

- **Name** which is the primary key of this table,
- **Value** (number of points needed to get the gift),
- **Quantity** (number of gifts of this type in stock).

Tableau 13.38 EXAMPLE OF A "GIFTS" TABLE

Name	Value	Quantity
Golden ring	5000	1
Matom	300	600
Horse	2000	17

Database management in the script:

When the customer has chosen a gift from the list, the value of the gift is subtracted from his points account, and the gift quantity is reduced from one unit. It is important for these two operations to be performed entirely or not at all: if one of them fails, the global operation is inconsistent.

Implementation

This script is composed of five User Interface trees (Call Server trees are not used in outbound Services).

- Main user interface tree (see section 13.5.3.1): this is the starting tree of the script. It calls the other trees.
- Controlled call (see section 13.5.3.2): this tree attempts to call the customer and reports the result of the attempt to the agent.
- Choose points to spend (see section 13.5.3.3): in this tree, the customer chooses how many points he wants to spend.
- Enumerate gifts (see section 13.5.3.4)): this tree allows the agent to give the list of available gifts to the

customer.

- Choose gift (see § 13.5.3.5): in this tree, the customer chooses a gift and the database is updated.

13.5.3.1 MAIN USER INTERFACE TREE

This is the starting tree for the User Interface of the agent. Its main function is to call the other trees. Each called tree performs a "global" action, such as calling the customer, enumerating available gifts, etc.

The main tree also closes the database recordsets opened in subtrees.

ToDefine Local variables

Tableau 13.39 LOCAL VARIABLES IN THE MAIN USER INTERFACE TREE

Variable name	Type	Description
CustomerPoints	Numeric	Points the customer has collected so far.
PointsToSpend	Numeric	Points the customer decided to spend.
CustomerHandle	String	Reference to the Customer recordset.
GiftsHandle	String	Reference to the Gifts recordset.

Tree construction

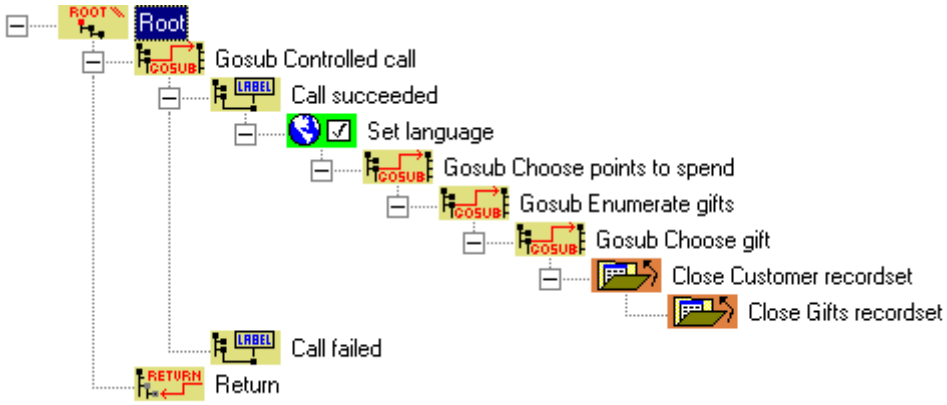


Figure 13.16 VIEW OF THE MAIN USER INTERFACE TREE

GosubControlledCall (GoSub, see § 13.2.4.4)

This Gosub node redirects execution to the ControlledCall tree.

CallSucceeded (Label, see § 13.2.4.8)

This Label node is the beginning of a branch in which the agent communicates with the customer. This branch can only be accessed if the "CallResult" variable value is Connect OK (= 6):

SetLanguage (AutoLanguage, see § 13.2.4.9)

In this ManualLanguage node, the agent selects the customer's language (based on the first words he hears).

GosubChoosePointsToSpend (GoSub, see § 13.2.4.4)

This Gosub node redirects execution to the Choose points to spend tree.

The PointsToSpend, CustomerHandle and CustomerPoints local variables are passed to the tree as arguments.

GosubEnumerategiftsl (GoSub, see § 13.2.4.4)

This Gosub node redirects execution to the Enumerate gifts tree.

The PointsToSpend, CustomerHandle and CustomerPoints local variables are passed to the tree as arguments.

GosubChooseGift (GoSub, see § 13.2.4.4)

This Gosub node redirects execution to the Choose gifts tree.

The CustomerHandle "GiftsHandle" and CustomerPoints local variables are passed to the tree as arguments.


CloseCustomerRecordset (CloseRecordSet, see § 13.2.1.7)

This CloseRecordset node uses the CustomerHandle local variable to close the Customer recordset. This recordset was created in the "Choose points to spend" tree and is still open.

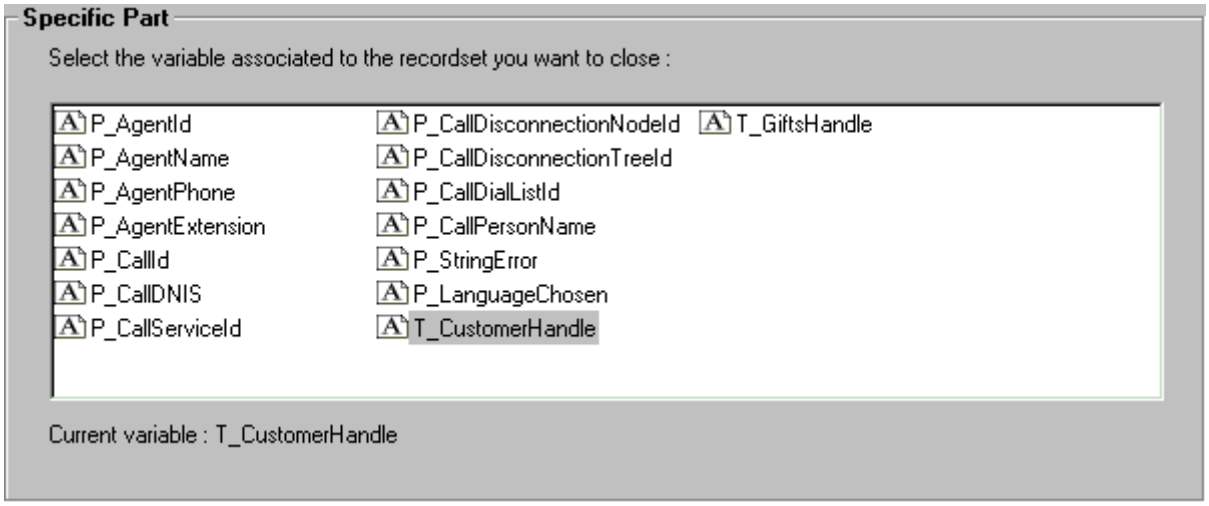


Figure 13.17 SPECIFIC PART OF THE "CLOSECUSTOMERRECORDSET" NODE


CloseGiftsRecordset (CloseRecordSet, see§ 13.2.1.7)

This CloseRecordset node uses the GiftsHandle local variable to close the Customer recordset. This recordset was created in the Choose gift tree and is still open.

CallFailed (Label, see § 13.2.4.8)

This Label node can only be reached if the CallResult variable value differs from Connect OK (= 6).

13.5.3.2 CONTROLLED CALL TREE

This tree is based on a MakeCall node. The return code variable of this node is transformed into textual information for the agent.

ToDefine Local variables

Tableau 13.40 LOCAL VARIABLES IN THE CONTROLED CALL TREE

Variable name	Type	Description
RealCallResult	Numeric	Choice index for the Connect really ***[OK]*** ?MCQ node.
ResultExplanation	String	Small text describing the *CallResult variable value (see §* 13.3.2.5).

Tree construction

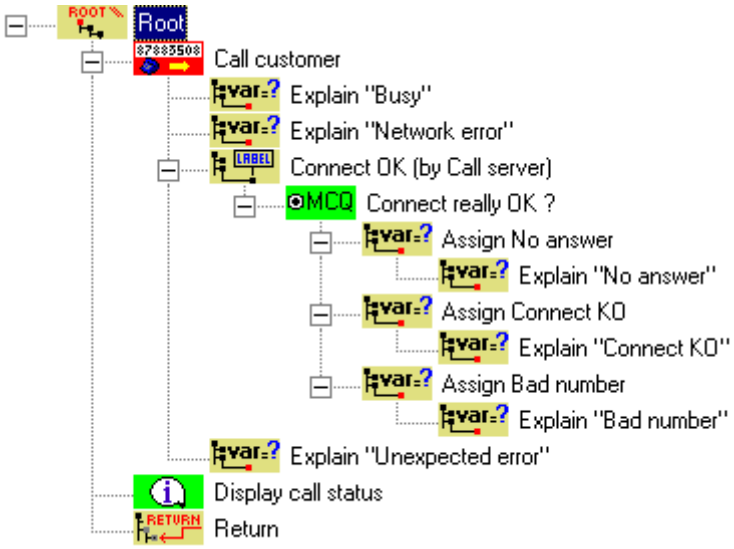


Figure 13.18 VIEW OF THE CONTROLED CALL TREE

CallCustomer (MakeOutboundCall, see § 13.2.3.2)

This MakeCall node attempts to establish the communication between the agent and the customer.

Explain"Busy" (Assignment, see § 13.2.4.7)

This Assignment node sets the value of the ResultExplanation local variable to "Busy line". This node is reached if the Call Server has assigned the value 1 (Busy) to the CallResult variable after execution of the MakeCall node.

Explain"Network error" (Assignment, see § 13.2.4.7)

This Assignment node sets the value of the ResultExplanation local variable to "A network error occurred". This node is reached if the Call Server has assigned the value 5 (Busy) to the CallResult variable after execution of the MakeCall node.

ConnectOK (by the Call server) (Label, see § 13.2.4.8)

This "Label" node is reached if the Call Server has assigned the value 6 (Connexion *OK*) to the CallResult variable after execution of the MakeCall node.

ConnectReallyOK? (MCQ, see § 13.2.5.3)

This MCQ node allows the agent to confirm that he reached the right customer. If the agent doesn't answer this question, the call is considered successful:

- if nobody answers the phone, the agent selects the first choice,
- if the person reached was not the expected customer, the agent selects the second choice,
- If the person reached informs the agent that the expected customer does not have this number, the agent selects the third choice:

AssignNoAnswer (Assignment, see § 13.2.4.7)

This "Assignment" node modifies the variable of the "CallResult" global variable. It is reached only if the agent selected the first choice in the ConnectReallyOK?

Explain"No answer" (Assignment, see § 13.2.4.7)

This Assignment node sets the value of the ResultExplanation local variable to "Nobody picked up the phone".

 AssignConnectKO (Assignment, see § 13.2.4.7)

This "Assignment" node modifies the variable of the "CallResult" global variable. It is reached only if the agent selected the second choice in the ConnectReallyOK?

 Explain"ConnectKO" (Assignment, see Section 13.2.4.7)

This Assignment node sets the value of the ResultExplanation local variable to "The person who answered was not the right person".

 **AssignBadNumber (Assignment, see § 13.2.4.7)**

This "Assignment" node modifies the variable of the "CallResult" global variable. It is reached only if the agent selected the third choice in the ConnectReallyOK?

 Explain"Bad number" (Assignment, see § 13.2.4.7)

This Assignment node sets the value of the ResultExplanation local variable to "The right person does not have this phone number".

 Explain"Unexpected error" (Assignment, see § 13.2.4.7)

This Assignment node sets the value of the ResultExplanation local variable to "An unexpected error occurred".

 DisplayCallStatus (Info, see § 13.2.5.6)

This "Info" node displays the values of the "CallResult" and "ResultExplanation" variables.

13.5.3.3 CHOOSE POINTS TO SPEND TREE

This tree allows the customer to choose how many points he wants to spend on a gift, from the amount he has collected so far.

Arguments

Tableau 13.41 VARIABLES OF THE CHOOSE POINTS TO SPEND TREE

Argument name	Type	Description
PointsToSpend	Numeric	Points the customer decided to spend.
CustomerRecordsetHandle	String	Reference to the Customer recordset.
TotalPoints	Numeric	Points the customer has collected so far.

Tree construction

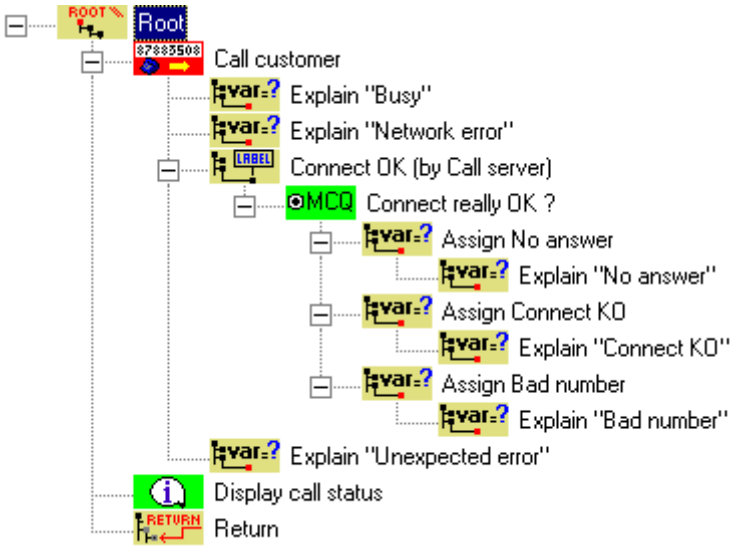


Figure 13.19 VIEW OF THE CHOOSE POINTS TO SPEND TREE

GetPointsOfCustomer (GetRecords, see § 13.2.1.4)

This GetRecords node retrieves the number of points collected so far by the customer from the database.

Here is the specific part of this node. The ***{Database}*** tab indicates the path to the database to be opened in the ***{Database}*** field.

The ***{Recordset}*** tab specifies the options needed to create the recordset:

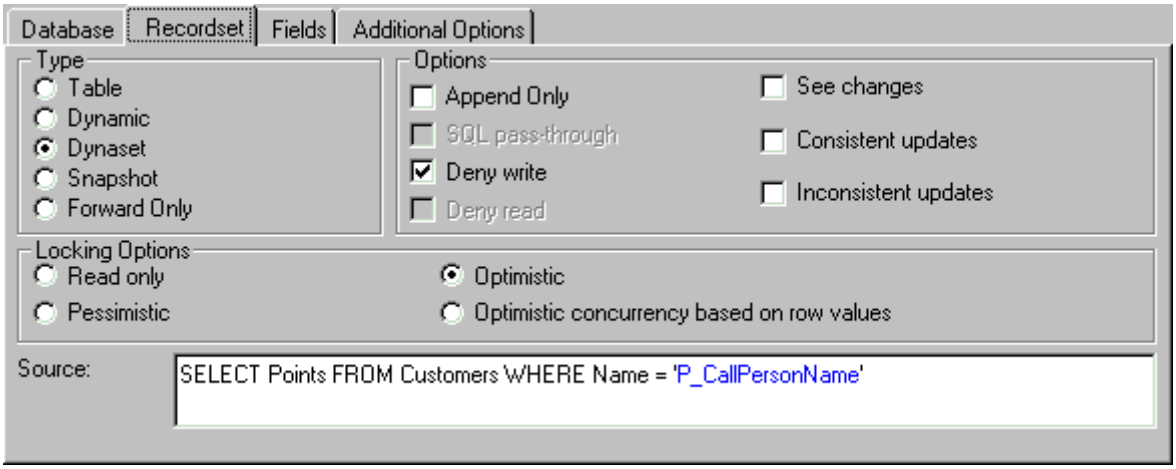


Figure 13.20 SPECIFIC PART OF THE "GETPOINTSOFCUSTOMER" NODE

The ***{Champs}*** tab associates the "TotalPoints" argument in the "Field variable column with the "Points" field in the "Field name" column of the recordset:

The ***{Additional options}*** tab selects the "CustomerRecordsetHandle" argument to keep the reference to the open recordset.

InfoNumberOfPoints (Info, see § 13.2.5.6)

This Info node is used to tell the customer how many points he has collected so far. This number is the value of the TotalPoints argument.

GetPointsToSpend (Numeric, see § 13.2.5.5)

This Numeric node is used to ask the customer how many points he wants to spend on the gift. Here is the specific part of this node:

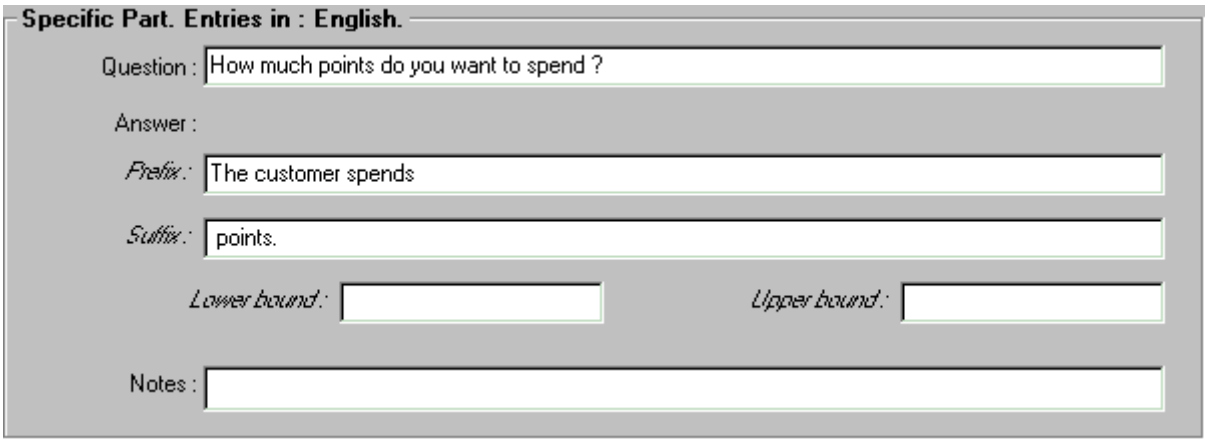


Figure 13.21 SPECIFIC PART OF THE "GETPOINTSTOSPEND" NODE

BadNumberOfPoints (Info, see § 13.2.5.6)

This "Info" node tells the customer that he has chosen a wrong number of points to spend: either less than zero or more than his total number of points. The access condition to this node contains a logical operator OR:

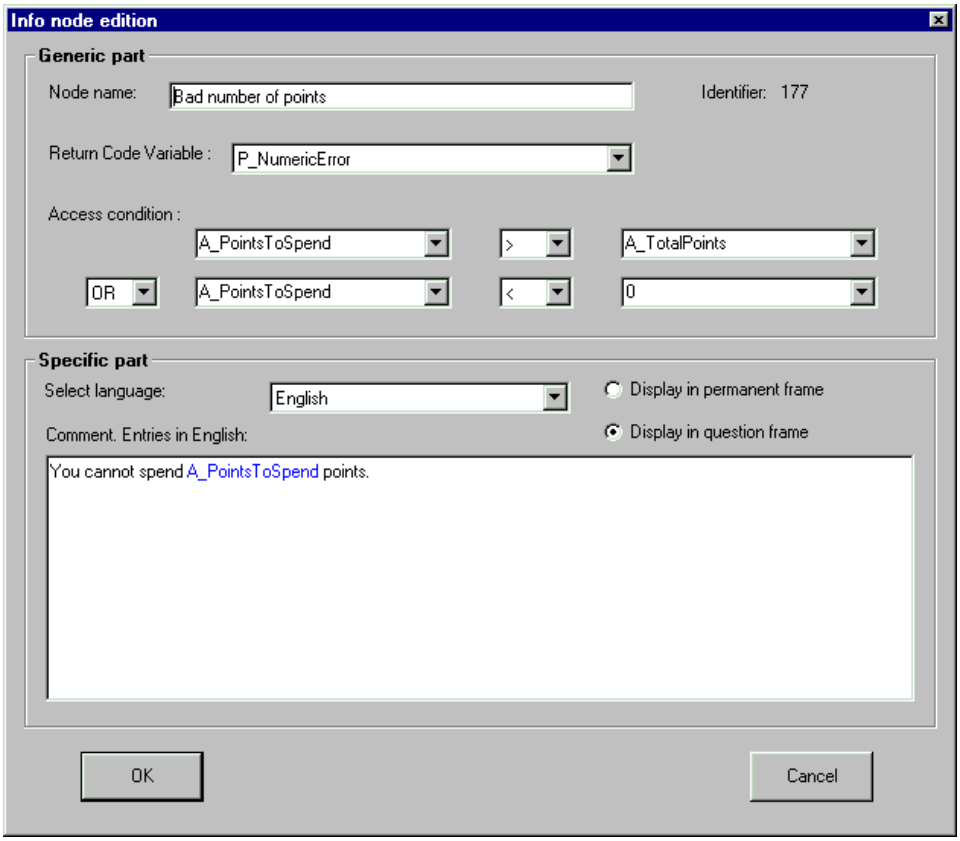


Figure 13.22 SPECIFIC PART OF THE "BADNUMBEROFPOINTS" NODE

GotoInfoNumberOfPoints (GoTo, see § 13.2.4.3),

This "GoTo" node directs the execution to the "InfoNumberOfPoints" node in this tree.

13.5.3.4 "ENUMERATE GIFTS" TREE

This tree goes through the possible gifts to choose, depending on the number of points the customer decided to spend. Each item of the available gifts list is displayed, so that the agent can inform the customer.

Arguments

Tableau 13.42 ARGUMENTS OF THE "ENUMERATE GIFTS" TREE

Argument name	Type	Description
PointsToSpendOnGift	Numeric	Points the customer decided to spend.
GiftsRecordsetHandle	String	Reference to the Gifts recordset.

ToDefine Local variables

*

Tableau 13.43 LOCAL VARIABLES OF THE "ENUMERATE GIFTS" TREE

Variable name	Type	Description
LoopCounter	Numeric	Used to enumerate records of the Gifts recordset.
GiftName	String	Name of a particular gift.
GiftValue	Numeric	Value of a particular gift.
NumberOfGifts	Numeric	Number of records in the Gifts recordset.

Tree construction

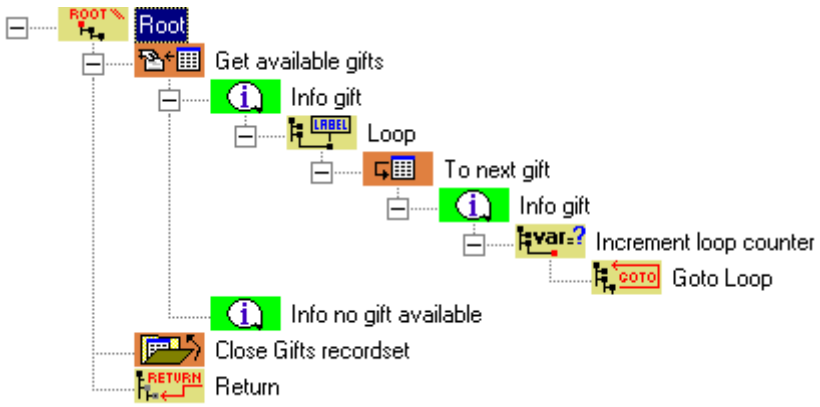


Figure 13.23 VIEW OF THE "ENUMERATE GIFTS" TREE

 GetAvailableGifts (GetRecords, see § 13.2.1.4)

This "GetRecords" node is similar to the "GetPointsOfCustomer" node in the "Choose points to spend tree".

In the Recordset tab, the ***{Source}*** text box is filled with the following SQL query:

```
SELECT * FROM Gifts
WHERE Value < A_PointsToSpendOnGift
AND Quantity > 0
ORDER BY Value
```

In the ***Fields*** tab, the "GiftName" and "GiftValue" local variables are linked to the ***{Name}*** and ***{Value}*** fields of the Gifts recordset.

In the ***Additional options*** tab, ***Close recordset*** is not checked, and the "GiftsRecordsetHandle" argument is selected as the reference to the open recordset. Also, the NumberOfGifts local variable is selected to contain the number of records in this recordset.

InfoGift (Info, see § 13.2.5.6)

This Info node gives the customer information about the current record in the Gifts recordset. Here is the edition dialog box of this node:

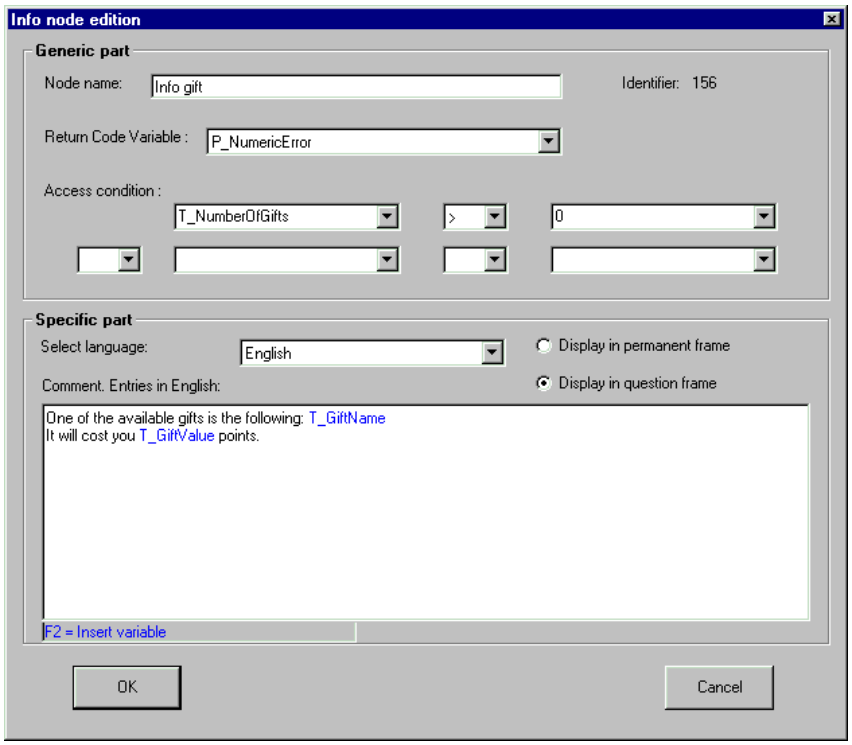


Figure 13.24 EDITION OF THE "INFOGIFT" NODE

Loop (Label, see § 13.2.4.8)

This Label node is the beginning of a branch that enumerates the recordset elements.

Its generic part (see § 13.2.1.2) doesn't specify an access condition, because this node is the target of the "GoTo" node in this tree (the access condition of the target node is not evaluated during execution of a "Goto" node).

ToNextGift (Navigate, see § 13.2.1.5)

This Navigate node moves the current record to the next record in the recordset. In the "Field" tab, information on the current record is retrieved (in order to give information on the next gift available for the client). Here is the edition dialog box of this node:

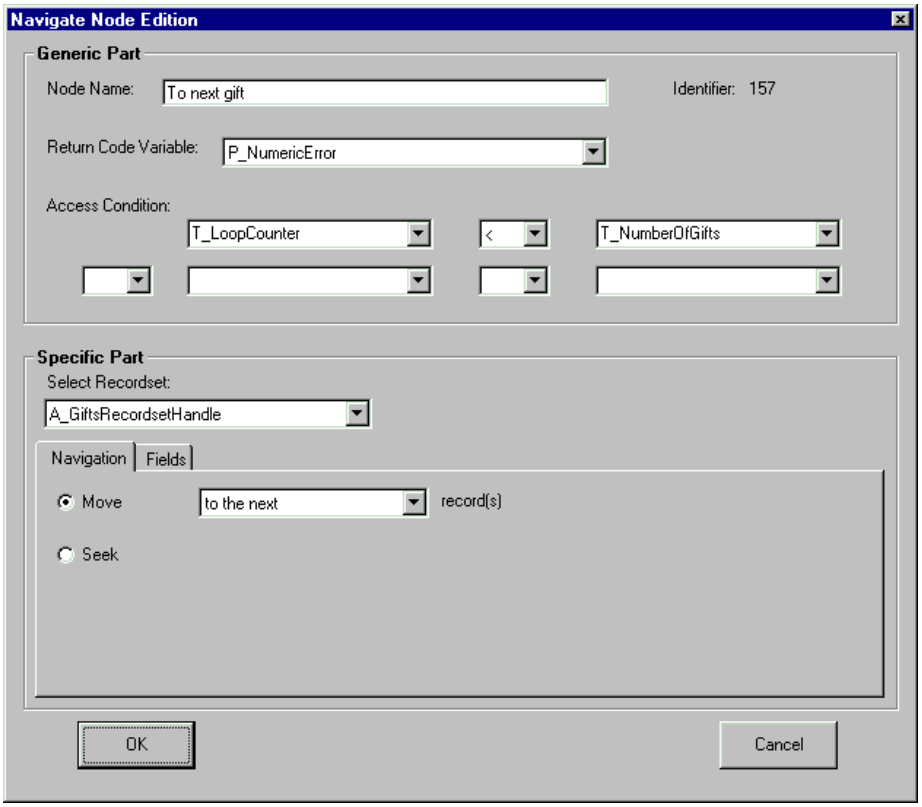


Figure 13.25 EDITION OF THE "TONEXTGIFT" NODE

In the generic part (see § 13.2.1.2), the access condition prevents from navigating beyond the last record of the recordset. This condition is placed in the current node to ensure that it will be evaluated in each loop iteration (see the related comment in the previous node).

InfoGift (Info, see § 13.2.5.6)

This "Info" node is similar to the first "InfoGift" node in the tree, without the access condition.

IncrementLoopCounter (Assignment, see § 13.2.4.7)

This Assignment node increments the LoopCounter local variable by one unit.

GotoLoop (GoTo, see § 13.2.4.3)

This "GoTo" node directs the execution to the "InfoNumberOfPoints" node in this tree. Its access condition is that the LoopCounter local variable must be smaller than the NumberOfGifts local variable.

InfoNoGiftAvailable (Info, see § 13.2.5.6)

This Info node tells the customer that no gift is available for the specified number of points.

CloseGiftsRecordset (CloseRecordSet, see§ 13.2.1.7)

This Close recordset node uses the GiftsRecordsetHandle argument to close the Gifts recordset.

13.5.3.5 CHOOSE GIFT TREE

This tree lets the customer select one of the available gifts, and then updates the database in a consistent way.

Arguments

Tableau 13.44 ARGUMENTS OF THE "CHOOSE GIFTS" TREE

Argument name	Type	Description
CustomerRecordsetHandle	String	Reference to the Customer recordset.
GiftsRecordsetHandle	String	Reference to the Gifts recordset.
CustomerPoints	Numeric	Points collected so far by the customer.

ToDefine Local variables

Tableau 13.45 LOCAL VARIABLES OF THE "CHOOSE GIFTS" TREE

Variable name	Type	Description
GiftName	String	Name of a particular gift.
GiftValue	Numeric	Value of a particular gift.
GiftQuantity	Numeric	Number of available gifts of a particular type.

Tree construction

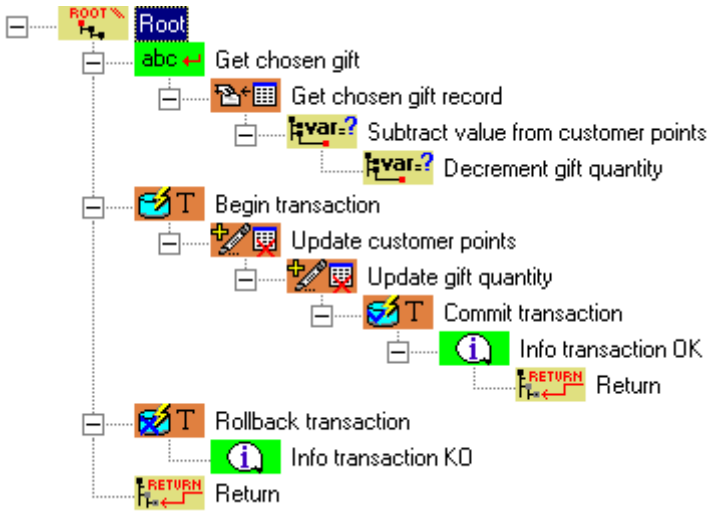


Figure 13.26 VIEW OF THE "CHOOSE GIFTS" TREE

GetChosenGift (AlphaNum, see § 13.2.5.2)

This AlphaNum node allows the agent to enter the name of the gift selected by the customer. This name is stored in the GiftName local variable. Here is the specific part of this node:

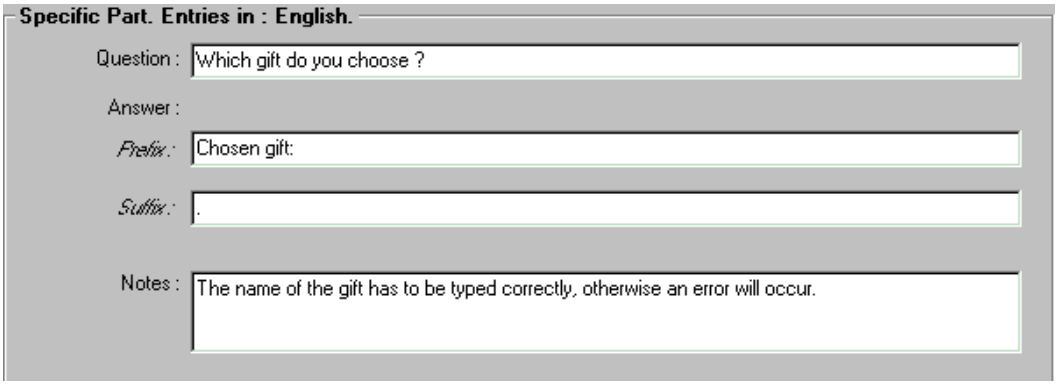


Figure 13.27 EDITION OF THE "GETCHOSENGIFT" NODE

GetChosenGiftRecord (GetRecords, see § 13.2.1.4)

This GetRecords node creates a recordset containing the record corresponding to the gift selected by the customer. This node is is similar to the "GetAvailableGifts" node in the "Enumerate gifts" tree.

In the ***Recordset*** tab, the ***{Source}*** text box is filled with the following SQL query:

```
SELECT * FROM Gifts
WHERE Name='T_GiftName'
```

In the ***Fields*** tab, the "GiftQuantity" local variable is selected to store the value of the ***{Quantity}*** field of the record.

In the ***Additional options*** tab, ***Close recordset*** is not checked, and the reference to the recordset is stored in the "GiftsRecordsetHandle" argument. This variable has already been used in the Enumerate gifts tree, but the former recordset has been closed, allowing the variable to be used again.

SubtractValueFromCustomerPoints (Assignment, see § 13.2.4.7)

This "Assignment" node modifies the variable of the "CustomerPoints" global variable. The new value will be used to update the corresponding field in the Customer table record. Here is the detail of the operation:

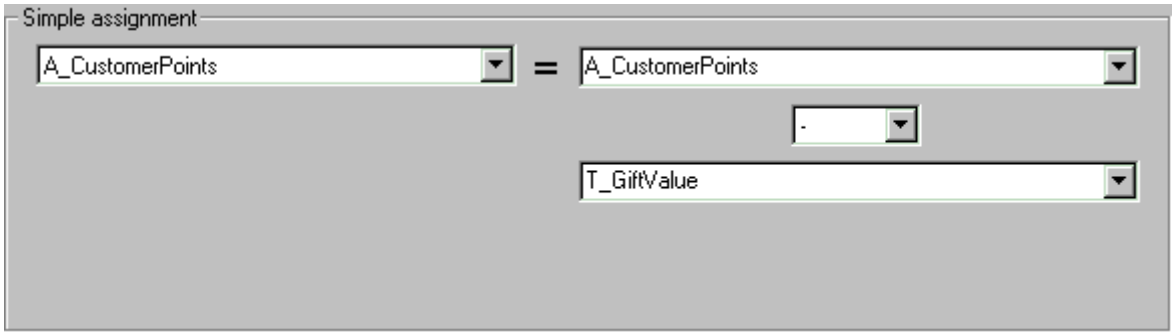


Figure 13.28 SPECIFIC PART OF THE "SUBSTRACTVALUECUSTOMERPOINTS" NODE

DecrementGiftQuantity (Assignment, see § 13.2.4.7)

This "Assignment" node reduces the variable of the GiftQuantity global variable. The new value will be used to update the corresponding field in the "Gifts" table record.

BeginTransaction (BeginTrans, see § 13.2.1.8),

This "BeginTrans" node starts a database transaction consisting of the two following nodes (update of two database tables). These two operations will either be completed or aborted together.

All nodes in the branch starting from the "BeginTransaction" node have "P_NumericError" as Return code variable, and have the following ***{Access condition}***: "P_NumericError" "=" "0".

This means that if any of these nodes returns an error code, execution passes to the next section of the tree, which aborts the transaction.

UpdateCustomerPoints (ManageRecordset, see § 13.2.1.6)

This "ManageRecordset" node uses the "CustomerPoints" argument to edit the ***{Points}*** field of the current record in the Customer recordset. Here is the specific part of this node.

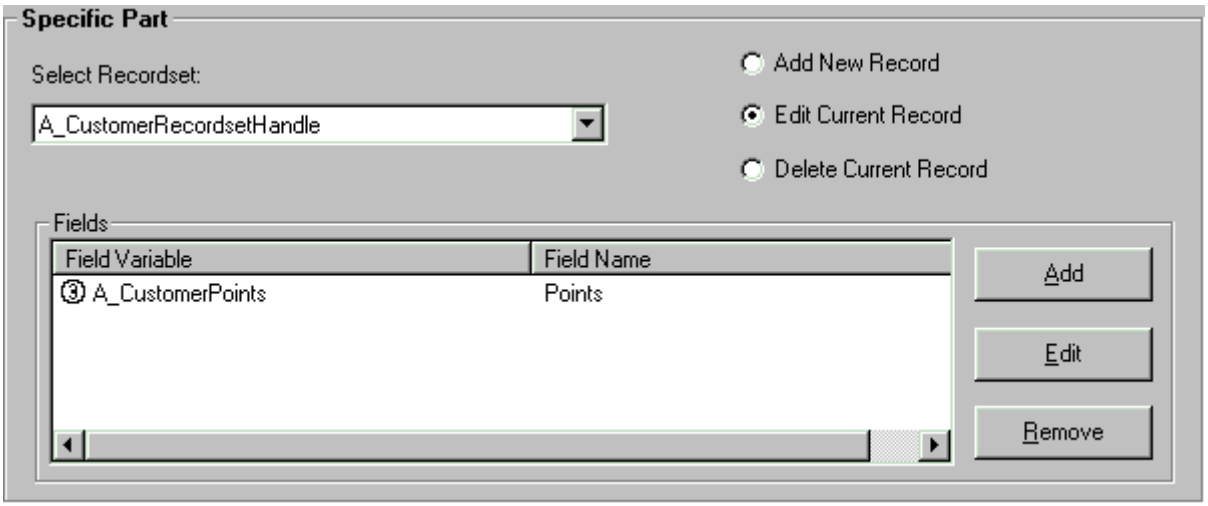


Figure 13.29 SPECIFIC PART OF THE "UPDATECUSTOMERPOINTS" NODE

UpdateGiftQuantity (ManageRecordset, see § 13.2.1.6)

This "ManageRecordset" node is similar to the previous node. It uses the "GiftQuantity" argument to edit the ***{Quantity}*** field of the current record in the Gifts recordset.

CommitTransaction (Commit, see § 13.2.1.9)

This "Commit" node can only be accessed if none of the previous nodes in the branch returned an error. It validates the update operations performed in the two last nodes.

InfoTransactionOK (Info, see § 13.2.5.6)

This Info node tells the agent that the transaction was successfully performed .

RollbackTransaction (Rollback, see § 13.2.1.10)

This node is accessed if any of the "DatabaseManagement nodes" (see § 13.2.1) in the previous section returned an error. It invalidates every operation performed on the database since the "BeginTrans" node (see § 13.2.1.8). The database is left intact.

InfoTransactionKO (Info, see § 13.2.5.6)

This Info node tells the agent that the transaction was abandoned.

14 ADVANCED DEVELOPMENT APPENDICES

The appendices presented in this chapter concern:

- The description of object models of the M5000 CC User API (see Section 14.1),
- The description of object models of the Outbound call list API (see Section),
- Description of the M5000 CC WebCall Service component (see Section 14.3),
- M5000 CC Portal translation and personalisation (see Section 14.4)
- M5000 CC application toolkit (see Section 14.5).

14.1 APPENDIX DESCRIPTION OF THE OBJECT MODELS OF THE M5000 CC USER API

14.1.1 OVERVIEW OF OBJECT MODELS

This table presents the objects (properties/methods/events) available when the M5000 CC User API interface is connected:

Note: Do not confuse objects named in the singular with collections of objects with similar names with an "s" (e.g. Agent and Agents; AgoraCall and AgoraCalls; PoolElement and PoolElements, ...)

Tableau 14.1 OVERVIEW OF ALL THE OBJECT MODELS IN THE M5000 CC USER API (1/4)

Purpose of this document	Properties	Methods	events
Agent (see § 14.1.2)	• UserId • UserName • LoggedStatus • Activity • IsIdle	none	none
Agent (see § 14.1.3)	• Count • NewEnum	• Item	none
AgentTransfer Requirements (see § 14.1.4)	• AgentId • AllTeamsSelected • CheckOrderSkills • TypeOfAgentTransfer • RequiredSkillsLevel • RequiredLanguagesLevel • RequiredTeams • SkillsLanguagePreferences	• AddLanguageLevel • AddPreference • AddSkillLevel • AddTeam • CheckSkill • CheckTeam • RemovePreference • RemoveSkillLevel • RemoveTeam • ResetAgentTransferRequirements • ResetLanguageLevel	none
AgoraCall (see section 14. 1.5)	• CallId • CLID • DNIS • ExtensionInUse • Id • ServiceId • ServiceVersionNumber • Status • AgentTransferRequirements • AgentsList	• AddCallToDialList • AddItemToSetTypeGlobalVariable • Answer • AssignGlobalVariableValue • BlindTransfer • CancelTransfer • ClearSetTypeGlobalVariable • EndOfTreatment • ExecuteAssociation • ExecuteSynchronization • GetProperty • Hold • InitiateTransfer • MakeOutboundCall • RealeaseCall • RetrieveGlobalVariableValue • RemoveItemFromSetTypeGlobalVariable • RetrieveSetTypeGlobalVariableValue • SetCallResult • SetInitiateReasult • TerminateTransfer • Unhold • SwapHold • PrepareAgentsListForTransfer • BlindAgentTransfer • InitiateAgentTransfer • InitiateRecording • StopRecording	none

Tableau 14.1 OVERVIEW OF ALL THE OBJECT MODELS IN THE M5000 CC USER API (2/4)

Purpose of this document	Properties	Methods	events
AgoraCalls (collection of AgoraCalls, (see § 14.1.6)	• Item • Count • NewEnum	• CreateOutboundCall • GetOutboundServicesForCallCreation • MakePrivateCall	• AssociationReceived • CallDeallocated • ConsultationSuccess • ExtensionStateChange • NewInboundScript • NewIncomingCall • NewOutboundScript • NewOutboundScriptEx • NewOutgoingCall • SynchronizationResult • TransferResult • LineCallStateChange • AnswerResult • HoldResult • UnHoldResult • DropResult • MakePrivateCallResult • MakeOutboundCallResult • SetupTransferResult • SetupAgentTransferResult • CancelTransferResult • CompleteTransferResult • BlindTransferResult • BlindAgentTransferResult • SwapHoldResult • AgentsListStateChange • AgentsListStateChangeEx • ConsultationConnected • ConferenceMembership Changed • ScriptCanceled • ReleaseCallDetectionAfter ConsultationEstablished
AgoraEmail (see § 14.1.7)	• EmailHandlingBeginTime • User ID • ServiceID • ServiceVersionNumber • Sender	• AddItemToSetTypeGlobalVariable • AssignGlobalVariableValue • ClearSetTypeGlobalVariable • Copy • Delete • EndOfTreatment • Forward • GetProperty • Move • RemoveItemFromSetTypeGlobalVariable • RetrieveGlobalVariableValue • RetrieveSetTypeGlobalVariableValue • Reply • SetInitiateResult	none

Tableau 14.1 OVERVIEW OF ALL THE OBJECT MODELS IN THE M5000 CC USER API (3/4)

Purpose of this document	Properties	Methods	events
AgoraEmails (see § 14.1.8)	• Count • Item • NewEnum	none	• CopyResult • DeleteResult • EmailDeallocated • ForwardResult • MoveResult • ReplyResult
AssociatedVariable (see § 14.1.9)	• Name • Value	• IsEmpty	none
AssociatedVariables (see § 14.1.10)	• Count • NewEnum • Item	none	none
Cookies_USR_Session (see section 14.1.11)	• AgoraCalls • AgoraEmails • ConnectedComponentId • IPPort • IPAddress • PoolElements • User • ExposedStatusEntities	• Connect • GetProperty	• UnexpectedError • NewStatusMessage Arrived • NewInstantPersonal Message
DailyCounters (see § 14.1.12)	• AverageCommunicationInboundDuration • AverageCommunicationOutboundDuration • AverageReservedInboundDuration • AverageReservedOutboundDuration • BreakDailyDuration • FailedPresentationsNumber • HoldInboundDailyDuration • HoldOutboundDailyDuration • InboundCommunicationDailyDuration • InboundReservedDailyDuration • NotReadyCodesDailyDuration(alng Code As Long) • NotReadyDailyDuration • OutboundCommunicationDailyDuration • OutboundReservedDailyDuration • PCPCodesDailyDuration • PCPDailyDuration • PrivateInboundDailyDuration • PrivateOutboundDailyDuration • ReadyDailyDuration • TotalInboundCallsNumber • TotalOutboundCallsNumber • TotalPrivateInboundCallsNumber • TotalPrivateOutboundCallsNumber • TotalWorkTime	PopupWindow(alngWindowHandle As Long)	none
ExposedDisplay Property (see section 14.1.13)	• Id • Value • Prefix • Suffix • Selected • DisplayThreshold • WarningThreshold • AlarmThreshold • DirectionForThreshold • AbsRel • Beep • CustomCounterId • CustomCounterType • ThresholdType • ThresholdBeginTime	none	none
ExposedDisplay Properties (see § 14.1.14)	• Item • Count • NewEnum	none	none

Tableau 14.1 OVERVIEW OF ALL THE OBJECT MODELS IN THE M5000 CC USER API (4/4)

Purpose of this document	Properties	Methods	events
ExposedStatusEntity (see § 14.1.15)	none	• RetrieveServiceFilterExposedDisplay Properties	none
ExposedStatus Entities (see § 14.1.16)	• Item • Count • NewEnum	• RetrieveAllServiceFilterWithGranted PermissionsIds	none
Id (see § 14.1.17)	• Id	none	none
Ids (see § 14.1.18)	• Item • Count • NewEnum	none	none
Language (see § 14.1.19)	• Id • Level	none	none
Languages (see section 14. 1.20)	• Count • NewEnum	• Item	none
PoolElement (see section 14. 1.21)	• AssociatedVariables • EmailHandlingBeginTime • User ID • SenderAddress • ServiceID	none	none
PoolElements (see § 14.1.22)	• Count • NewEnum • Item	• AskElement	• ElementDisappeardFrom Pool • ElementProperties Changed • NewElementAppeardIn Pool
Preference (see section 14. 1.23)	• Id • Order • SkillLanguageType	none	none
Preferenceq (see § 14.1.24)	• Count • NewEnum	Item	none
Skill (see section 14. 1.25)	• Id • Level	none	none
Skills (see section 14. 1.26)	• Count • NewEnum	• Item	none
Team (see section 14. 1.27)	• Id	• none	none
Teams (see section 14. 1.28)	• Count • NewEnum	• Item	none
User (see section 14. 1.29)	• ActivityState • ActivityCodeState • LoginState • PhoneId • UserId	• GetProperty • SetPhoneLoggedStatus (Login / Logout) • SetUserActivity (Ready / Not Ready(code) / PCP(code) / Break) • SetSkillLevelProperties	• UserLoginStateChange • UserActivityStateChange • UserActivityCodeState Change

14.1.2 DESCRIPTION OF THE "AGENT" OBJECT

Properties of the "Agent" object

All the properties of this object are read-only.

Tableau 14.2 PROPERTIES OF THE "AGENT" OBJECT

Properties	Comments or values
UserId	Agent Id
UserName	Name of the agent
LoggedStatus	Agent status • ckStatusLOGIN = 0: the agent is connected • ckStatusLOGOUT = 1: the agent is logged out
Activity	Agent's activity: • ckActivityREADY = 0: Ready • ckActivityNOTREADY = 1: Not Ready • ckActivityPCP = 2: PCP (Post Call Processing) • ckActivityBREAK = 3: Break (between two calls)
IsIdle	• This property indicates whether the agent is free (True) or not (False). • An agent is free when he is connected, using a telephone and his extension is idle.

14.1.3 DESCRIPTION OF THE "AGENTS" OBJECT

The "Agents" object is a collection of "Agent" objects (see § 14.1.2). This collection presents the list of agents likely to process the call within a transfer.

Note: The "client application" term means the application using the M5000 CC User API.

Properties of the "Agents" object

Tableau 14.3 PROPERTIES OF THE "AGENTS" OBJECT

Properties	Comments or values
Count	Total number of objects of the "Agent" type contained in the collection
NewEnum	Enables the client application to use the syntax "For...Each" in the collection

Methods of the "Agents" object

Tableau 14.4 METHODS OF THE "AGENTS" OBJECT

Methods	Characteristics	Comments or values
Function Item(Index As Variant) As CookiesUserAPI.Agent	**Effect**	Provides the client application with access to an Agent object in the collection
	Argument	• *Index* (input): identifier of the object in the collection
	Returns	The Agent object requested or Nothing if the object does not exist in the collection

14.1.4 DESCRIPTION OF THE "AGENTTRANSFERREQUIREMENTS" OBJECT

An "AgentTransferRequirements" object is associated with each new "AgoraCall" object (see § 14.1.5). This object contains all the specificities used to define the conditions for transferring a call from one agent to another

agent.

Properties of the "AgentTransferRequirements" object

Tableau 14.5 PROPERTIES OF THE "AGENTTRANSFERREQUIREMENTS" OBJECT

Properties	Comments or values
AgentId	The identifier of the agent selected (used for a transfer to a particular agent).
AllTeamsSelected	According to the value of this Boolean: • the agent must belong to al the teams selected ("True") • the agent must belong to a team, at least, among the teams selected (False")
CheckOrderSkills	According to the value of this Boolean: • you must take into consideration the preferential sequence of skills for selecting an agent ("True") • you must ignore the preferential sequence of skills for selecting an agent ("False")
TypeOfAgentTransfer	Type of transfer from one agent to another agent: • usrAPI_ServiceMember = 0: transfer to a Service member • usrAPI_ParticularUser = 1: transfer to a particular agent
RequiredSkillsLevel	Reference to the collection of skill levels required.
RequiredLanguagesLevel	Reference to the collection of language levels required.
RequiredTeams	Reference to the collection of teams selected.
SkillsLanguagePreferences	Reference to the collection of preferential skill sequences for selecting an agent.

Methods of the "AgentTransferRequirements" object

Tableau 14.6 METHODS OF THE "AGENTTRANSFERREQUIREMENTS" OBJECT (1/2)

Methods	Characteristics	Comments or values
Sub AddLanguageLevel(ByVal aLevel As Integer)	**Effect**	Used to define the level of language required for a transfer to another member of the Service.
	Argument	• *aLevel* (input): language level (intervalle 0 to 99)
Sub AddPreference(ByVal aType As UsrAPI_SkillLanguageType, ByVal aOrder As Integer, ByVal aPreferenceId As String)	**Effect**	Used to define the preferential skill level required for a transfer to another member of the Service.
	Arguments	• aType (input): type of skill - usrAPI_Skill = 0: particular skill - usrAPI_Language = 1: language skill • aOrder (input): preference sequence (strictly positive integer) • aPreferenceId (input): identifier of the particular skill. The value of this argument is not used for defining a preference sequence of the "usrAPI_Language" type.
Sub AddSkillLevel(ByVal astrSkillId As String, ByVal aLevel As Integer)	**Effect**	Used to define the levels of skill (for a particular skill defined previously) required for a transfer to a member of the Service.
	Arguments	• astrSkillId (input): identifier of the particular skill. • aLevel (input): level of skill (interval 0 to 99).
Sub AddTeam(ByVal astrTeamId As String)	**Effect**	Used to select a number of team (among the teams defined beforehand)
	Argument	• astrTeamId (input): the identifier of the team
Function CheckTeam(ByVal TeamId As String) As Boolean	**Effect**	check the existence of the definition of a team
	Argument	• TeamId (input): the identifier of the team
	Returns	This function returns a Boolean with the value: • "True": the team concerned was actualy defined beforehand on the level of the Server. • "False": the team concerned does not exist on the level of the Server.

Tableau 14.6 METHODS OF THE "AGENTTRANSFERREQUIREMENTS" OBJECT (2/2)

Methods	Characteristics	Comments or values
Sub RemovePreference(ByVal aType As UsrAPI_SkillLanguageType, ByVal aOrder As Integer, ByVal aPreferenceId As String)	**Effect**	Used to remove the preferential skill sequences required for a transfer to another member of the Service.
	Arguments	• aType (input): type of skill - usrAPI_Skill = 0: particular skill - usrAPI_Language = 1: language skill • aOrder (input): preference sequence (strictly positive integer) • aPreferenceId (input): identifier of the particular skill. The value of this argument is not used for deleting a preference sequence of the "usrAPI_Language" type.
Sub RemoveSkillLevel(ByVal astrSkillId As String)	**Effect**	used to define a level of skill (for a particular skill defined previously) required for a transfer to a member of the Service.
	Argument	• astrSkillId (input): identifier of the particular skill.
Sub RemoveTeam (ByVal astr TeamId As String)	**Effect**	Used to remove a team among the teams selected
	Argument	• astrTeamId (input): the identifier of the team
Sub ResetAgentTransfer Requirements()	**Effect**	Used to reinitialize all the specifics defined on the level of the "AgentTransferRequirements" object (see § 14.1.4). Therefore, all properties reutrn to their default value.
Sub ResetLanguageLevel()	**Effect**	Used to return the language level required to its default value. level 0.

14.1.5 DESCRIPTION OF THE "AGORACALL" OBJECT

An "AgoraCall" object is added to the "AgoraCalls" collection (see § 14.1.6) when a new call is received or set up. This object is removed when the "CallDeallocated" event is received.

Note: The term "application" has to be understood as the application using UserCookiesACP.

Properties of the "AgoraCall" object

Tableau 14.7 PROPERTIES OF THE "AGORACALL" OBJECT

Properties	Comments or values
CallId	The identifier of the call in the Server as a string
CLID	CLID of the AgoraCall object as a string
DNIS	DNIS of the AgoraCall object as a string
ExtensionInUse	Returns the DN of the extension on which the call is present. If the physical call is no longer present on the agent extension, this property returns a zero-length string
Id	Key of the AgoraCall object (in the AgoraCalls collection) as a string
ServiceId	The identifier of the Service relative to the AgoraCall object as a string
ServiceVersionNumber	The version number of the Service relative to the AgoraCall object (in the AgoraCalls collection) as a long
Status	Status of the AgoraCall object as ckPhysicalExtensionStatus
AgentTransferRequirements	A reference to the "AgentTransferRequirements" object (see § 14.1.4)
AgentsList	A reference to the "Agents" object (see § 14.1.3) containing the list of agents likely to process the call within a transfer.

Methods of the "AgoraCall" object

Tableau 14.8 METHODS OF THE "AGORACALL" OBJECT (1/8)

Methods	Characteristics	Comments or values
Sub AddCallToDialList(ByVal astrName As String, ByVal astrPhoneNumber As String)	**Effect**	Adds the new call to the list of outgoing calls and starts its processing. The effect of this method is that it generates a NewOutboundScriptEx event, indicating that the processing of this new call is starting.
	Prerequisites	• The call must have been created using the CreateOutboundCall. Method.
	Arguments	• astrName (input) name of the person to call. (This name field may be empty.) • astrPhoneNumber (input): the number to dial.
Sub AddItemToSetTypeGlobal Variable(ByVal VariableName As String, Byval NewValue As Variant)	**Effect**	This function is used to add a new item in a global variable of “Set” type. The call can only be made in this method if this call is managing a script.
	Arguments	• VariableName (input): the name of the global variable • NewValue (input): the value you want to add
Sub Answer()	**Effect**	This function allows off hooking a private or inbound call
Sub AssignGlobalVariable Value(ByVal VariableName As String, Byval NewValue As Variant)	**Effect**	This function is used to modify the value of a global variable. • User variable (numeric, string, date or derived variable) • Intrinsic variable The call can only be made in this method if this call is managing a script.
	Arguments	• VariableName (input): the name of the global variable you want to modify • NewValue (input): the value you want to store in the variable
	Note:	• An intrinsic variable need to have the Read/Write attibute in order to modify it. • Derived variables can not be modified
Sub BlindTransfer(ByVal DestinationDN As String)	**Effect**	When a call is received, use this function to make a blind transfer by specifying the destination DN
	Note:	The script is never transferred (even if the DestinationDN is an agent extension).
Sub CancelTransfer()	**Effect**	This function can only be used after an InitiateTransfer; when called, it will end the consultation call and cancel the transfer. According to the PBX, the first call can become connected or on hold.

Tableau 14.8 METHODS OF THE "AGORACALL" OBJECT (2/8)

Methods	Characteristics	Comments or values
Sub ClearSetTypeGlobal Variable(ByVal VariableName As String)	**Effect**	This function is used to remove all the items of a global variable of “Set” type. The call can only be made in this method if this call is managing a script.
	Argument	VariableName (input): the name of the global variable
Sub EndOfTreatment(ByVal TreatmentEndCode As TreatmentEndCode)	**Effect**	This function will remove the corresponding AgoraCall object from the AgoraCalls collection. it is mandatory to use this function to terminate processing of the call (inbound or outbound, but only if **SetInitiateResult** was called previously). Statistics about the call can be saved only after this function is called.
	Arguments	TreatmentEndCode (input): it must be one of the following types: • Treatment_IsExecuted = 0: treatments well terminated • Treatment_IsCanceled = 1: treatment canceled • Treatment_IsStopped = 2: treatment not terminated but well stopped The value of this argument is ignored in case of cancellation of an outgoing call created on the agent's initiative, that is for which CreateOutboundCall has been called but not AddCallToDialList.
Function ExecuteAssociation (ByVal AssociationType As AssociationType, ByVal Condition1_Value As Variant, ByVal Condition1_Comparison As ComparisonOperator, ByVal Condition1_ComparedVariableName As String, Optional ByVal LogicalOperator As LogicalOperator, Optional ByVal Condition2_Value As Variant, Optional ByVal Condition2_Comparison As ComparisonOperator, Optional ByVal Condition2_ComparedVariableName As String) As AssociationResult)	**Effect**	Enables the application to make an association with a web session. Two conditions can be defined for an association, but at least one has to be defined. The three following arguments have to be filled and defined for the first condition: Condition1_Value, Condition1_Comparison, Condition1_ComparedVariableName. Condition1_Comparison is the comparison operator of the first condition ; Condition1_Value is compared with Condition1_ComparedVariableName with this operator. The four following arguments are optional and have to be filled only if a second condition is defined for an association: LogicalOperator, Condition2_Value, Condition2_Comparison, Condition2_ComparedVariableName. If a second condition is defined for an association, a logical argument operator must be used: i.e. AND (ET), or OR (OU). Condition2_Value, Condition2_Comparison, Condition2_ComparedVariableName have the same signification than Condition1_Value, Condition1_Comparison, Condition1_ComparedVariableName. See example (see §).

Tableau 14.8 METHODS OF THE "AGORACALL" OBJECT (3/8)

Methods	Characteristics	Comments or values
Function ExecuteAssociation (ByVal AssociationType As AssociationType, ByVal Condition1_Value As Variant, ByVal Condition1_Comparison As ComparisonOperator, ByVal Condition1_ComparedVariableName As String, Optional ByVal LogicalOperator As LogicalOperator, Optional ByVal Condition2_Value As Variant, Optional ByVal Condition2_Comparison As ComparisonOperator, Optional ByVal Condition2_ComparedVariableName As String) As AssociationResult) (Continued)	**Arguments**	• AssociationType (input): Slave or master association. When The association is done, global variables will be shared between voice and web sessions. A conflict appears if the two sessions share the same global variable. To avoid this problem, the session is defined as master or slave. If the voice session is defined as a master session, global variables shared between the two sessions will have the value defined in the voice session. If the voice session is defined as a slave session, global variables shared between the two sessions will have the value defined in the web session. • Condition1_Value (input): Value on the left part of the first condition. Local value of the voice session compared to Condition2_ComparedVariableName, global variable of the web session. • Condition1_Comparison (input): comparison operator of the first condition. • Condition1_ComparedVariableName (input): Name of the variable on the right part of the first condition. Global variable of the web session to which Condition1_Value is compared. The Association_NoOtherSessions result can be returned due to the fact that the Condition1_ComparedVariableName is not correctly spelled. • LogicalOperator (input): default value = LogicalOperator_None. If a second condition is defined this argument makes the link between these two conditions. • Condition2_Value As Variant (input): Value on the left part of the second condition. Local value of the voice session compared to Condition2_ComparedValue, global variable of the web session. Default value = "". • Condition2_Comparison (input): Comparison operator of the second condition. Default value is ComparisonOperator_Inferior. • Condition2_ComparedVariableName (input): name of the variable on the right part of the second condition. Global variable of the web session to which Condition2_Value is compared. Default value = "". The Association_NoOtherSessions result can be raised due to the fact that the Condition2_ComparedVariableId is not correct.

Tableau 14.8 METHODS OF THE "AGORACALL" OBJECT (4/8)

Methods	Characteristics	Comments or values
Function ExecuteAssociation (ByVal AssociationType As AssociationType, ByVal Condition1_Value As Variant, ByVal Condition1_Comparison As ComparisonOperator, ByVal Condition1_ComparedVariableName As String, Optional ByVal LogicalOperator As LogicalOperator, Optional ByVal Condition2_Value As Variant, Optional ByVal Condition2_Comparison As ComparisonOperator, Optional ByVal Condition2_ComparedVariableName As String) As AssociationResult) (Continued)	**Returns**	AssociationResult: the result of the association
	Note:	The AssocationResult enum has different possible values: • Association_Error = 1 Error occurred during the association • Association_Done = 2 Association with a web session is successfully done • Association_NoOtherSessions = 3 No web session was find respecting the conditions or the ComparedVariableName is mispelled. • Association_MoreThanOneSession = 4 More than one web session is found respecting the conditions • Association_AlreadyDone = 5 The current call is already associated to a session. The ComparisonOperator enum has different possible values: • ComparisonOperator_Inferior = 1< • ComparisonOperator_InferiorOrEqual = 2 <= • ComparisonOperator_Superior = 3 > • ComparisonOperator_SuperiorOrEqual = 4 >= • ComparisonOperator_Equal = 5 = • ComparisonOperator_Different = 6 <> LogicalOperator enum peut prendre différentes valeurs: • LogicalOperator_None = 1 There is only one condition • LogicalOperator_AND = 2 Operator between the two conditions is “AND” • LogicalOperator_AND = 3 Operator between the two conditions is “OR” The AssociationType enum has different possible values: • AssociationType_Master = 1 Master association • AssociationType_Slave = 2 Slave association
Sub ExecuteSynchronization(ByVal DestinationTreeName As String, ByVal DestinationNodeId As String)	**Effect**	Enables the application to force the associated web session to go to the node defined as destination node. The voice session synchronizes the web session. The synchronization is asynchronous. An event, SynchronizationResult, warns the application of the result of the ExecuteSynchronization method. Note that the synchronization can only be done in one-way from a voice session to a web session (in application using the M5000 CC User API). The reason is that the destination of the Synchronization node (see § 13.2.4.13) is a node in a tree: the M5000 CC User API doesn't use trees.
	Arguments	• DestinationTreeName (input). It's the name of the tree that contains the destination node in the associated web session. • DestinationNodeId (input). It's the numeric identifier of the node that the associated web session has to execute to make the synchronization. This node has to be present in the tree specified by DestinationTreeName

Tableau 14.8 METHODS OF THE "AGORACALL" OBJECT (5/8)

Methods	Characteristics	Comments or values
Fonction GetProperty(ByVal PropertyType As callPropertyType) As Variant	**Effect**	gets a property relative to the AgoraCall object.
	Arguments	PropertyType (input): the argument you specify must be one of the following values: • call_Id = 1 returns the KEY of the AgoraCall object (in the AgoraCalls collection) as a string • call_Status = 2 returns the status of the AgoraCall object as a ckPhysicalExtensionStatus (see previous definition) • Call_DNIS = 3 returns the DNIS of the AgoraCall object as a string • call_CLID = 4 returns the CLID of the AgoraCall object as a string • call_CallId = 5 returns the identifier of the call in the Server as a string • call_ServiceId = 6 returns the identifier of the service relative to the AgoraCall object as a string • call_ServiceVersionNumber = 7 returns the version number of the service relative to the AgoraCall object (in the AgoraCalls collection) as a long
	Returns	The value of the property.
Sub Hold()	**Effect**	This function allows placing a call on hold
Sub InitiateTransfer(ByVal DestinationDN As String)	**Effect**	This function can be used with an Agora call (but not a private call). It performs a transfer with consultation call, specifying only the destination DN The ConsultationSuccess event is raised if the consultation succeeds.
	Note:	The script is never transferred (even if the DestinationDN is an agent extension).
Sub MakeOutboundCall()	**Effect**	when a new outbound call is presented and when you answered with the SetInitiateResult, this function allows you to make the outbound call.
Sub ReleaseCall()	**Effect**	This function allows hanging up a call
Sub RemoveItemFromSetTypeGlobalVariable (ByVal VariableName As String, Byval ValueToRemove As Variant)	**Effect**	This function is used to remove one item of a global variable of “Set” type. The call can only be made in this method if this call is managing a script.
	Arguments	• VariableName (input): the name of the global variable • ValueToRemove (input): the value you want to delete

Tableau 14.8 METHODS OF THE "AGORACALL" OBJECT (6/8)

Methods	Characteristics	Comments or values
Function RetrieveGlobalVariableValue (ByVal VariableName As String)	**Effect**	This function is used to get the value of a global variable: • User variable (numeric, string, date or derived variable) • Intrinsic variable The call can only be made in this method if this call is managing a script.
	Argument	VariableName (input): the name of the global variable you want to get
	Returns	The value of the property as variant.
Fonction RetrieveSetTypeGlobalVariableValue (ByVal VariableName As String)	**Effect**	This function is used to get all the items contained in the global variable of “Set” type. The call can only be made in this method if this call is managing a script.
	Argument	VariableName (input): the name of the global variable you want to get
	Returns	An object of the SetTypeGlobalVariable type (collection with the Item, Count and NewEnum methods) containing all values of the variable
Sub SetCallResult(ByVal CallResult As ckOutboundCallResult)	**Effect**	This function is depreciated. It removes the AgoraCall object from the AgoraCalls collection. Please use the **AssignGlobalVariableValuefunction** followed by the **EndOfTreatment** function. The AssignGlobalVariableValuefunction is used to assign the CallResult intrinsic variable (see § 13.3.2.5) with one of the following values: • ckFirstAttempt = 0 • ckBusy = 1 • ckNoAnswer = 2 • ckConnectKO = 3 • ckBadNumber = 4 • ckNetworkError = 5 • ckConnectOK = 6 • ckCanceledRescheduled = 7 • ckCanceledDeleted = 8 • ckPresentationTimeOut = 9 • ckNoCallServer = 10 • ckCallAborted = 11 If this function is not called, the outbound result will be set to ckFirstAttempt by default when closing the application. 2. Then, call the EndOfTreatment function with the desired argument.

Tableau 14.8 METHODS OF THE "AGORACALL" OBJECT (7/8)

Methods	Characteristics	Comments or values
Sub SetInitiateResult(ByVal InitiatingResult As ckInitiatingResult)	**Effect**	It is mandatory to use this function to respond to the NewInboundScript or NewOutboundScript event.
	Arguments	InitiatingResult (input): you have to answer before the script initialization timeout and the response has to be as follows: • ckRunIsInitiated = 0 if you're ready to receive the call • ckRunIsNotInitiated = 1 if you are not ready to receive the call (the call won't be presented)
Sub TerminateTransfer()	**Effect**	This function can only be used after an InitiateTransfer; when called, it will end the consultation call and cancel the transfer. The TransferResult event is raised at the end of the transfer.
Sub UnHold()	**Effect**	This function allows activating a hold call
Sub InitiateRecording	**Effect**	This function is used to start recording the conversation. For the recording to be started appropriately, you must: • Shift into "Production" the "Conversation Recording" predefined service (see § 13.4.5) **(requires using analog resources)** • Define in the M5000 CC Administrator application the DNIS (see Sheet U-312, {Recording} tab) of this Service.
Sub StopRecording	**Effect**	This function is used to start recording the conversation.
Sub SwapHold()	**Effect**	Exchange the active call with the on-hold consulting call (this method can be called only when a consultation call is ongoing). This is used by the application to shift a call to the other call during the transfer call phase.
	Note:	During a transfer consulting phase, the SwapHold method must be called an even number of times before calling the TerminateTransfer method, to ensire the call is connected (and not in pending). In the contrary case, the call of the TransferTerminate will give rise to an error (-2146422477 : There is no transfer to terminate).
Sub PrepareAgentsListForTransfer(ByRef AgentsList As Cookies UserAPI.Agents)	**Effect**	This feature must be called before initiating a transfer to an agent, regardless of the type of transfer (to a particular agent or a member of the Service). It is used to determine the list of agents likely to process the call.
	Argument	• AgentsList (output): a reference to the collection of "Agent" objects (see § 14.1.2). It is used to determine the list of agents likely to process the call.
Sub BlindAgentTransfer(ByRef strAgentId As String, ByVal bln UseAgentScript As Boolean)	**Effect**	This function is called in order to perform a blind transfer to an agent defined with or without using a script.

Tableau 14.8 METHODS OF THE "AGORACALL" OBJECT (8/8)

Methods	Characteristics	Comments or values
Sub BlindAgentTransfer(ByRef strAgentId As String, ByVal bln UseAgentScript As Boolean) (continued)	**Arguments**	• strAgentId (input & output): the identifier of the agent to whom the call is to be transferred. If the argument contains a string of empty characters at input, selecting the best agent is eprformed by the Server, based on certain criteria used to identify the most appropriate agent available. In this case, the same argument contains the identifier of the agent selected by the Server at the output. • blnUseAgentScript (input): determines whether the transfer must be performed with or wothout using the script.
Sub InitiateAgentTransfer(ByRef strAgentId As String, ByVal bln UseAgentScript As Boolean)	**Effect**	This function is called in order to perform a transfer with viewing call to an agent defined with or without using a script.
	Arguments	• strAgentId (input & output): the identifier of the agent to whom the call is to be transferred. If the argument contains a string of empty characters at input, selecting the best agent is eprformed by the Server, based on certain criteria used to identify the most appropriate agent available. In this case, the same argument contains the identifier of the agent selected by the Server at the output. • blnUseAgentScript (input): determines whether the transfer must be performed with or wothout using the script.
Sub TerminateTransfer(Optional ByVal ackenumTrsTermination Mode As gckenumTrsTermination Mode = gckenumTrsTerminationModeTransfer, Optional ByVal ablnConfirmTransferAgentScript As Boolean = True)	**Effect**	This feature can be used only after 'InitiateTransfer'. It is used to choose the termination mode for a transfer with a viewing call. Either the call is fully made, or a conference is set up. When this function is called, an event is generated providing the result of the transfer. (TransferResult) For conference, the consultation call must be in the connected status (reception of the ConsultationConnected event).
Sub TerminateTransfer(Optional ByVal ackenumTrsTermination Mode As gckenumTrsTermination Mode = gckenumTrsTermination ModeTransfer, Optional ByVal ablnConfirmTransferAgentScript As Boolean = True) (continued)	**Argument**	• gckenumTrsTerminationMode: • gckenumTrsTerminationModeTransfer = 0: Using this mode enables a transfer to be performed • gckenumTrsTerminationModeConference = 1: Using this mode enables a conference to be performed • ablnConfirmTransferAgentScript: This parameter provides the ability to confirm the scenario transfer (if a transfer with script was chosen at the beginning of the transfer protocol, otherwise it has no effect). Using these arguments is not required if the purpose is to perform a classical transfer.

Example of "AgoraCall" object: Methods/ Effect: practical example

The structure of the association conditions can be represented as follows:

Condition1_Value	Condition1_Comparison	Condition1_ComparedVariableName
LogicalOperator		
Condition2_Value	Condition2_Comparison	Condition2_ComparedVariableName

In order to give an example, the arguments can be replaced by values. The association with a web session (not yet associated) is done if the global variables ClientName and BirthDate of the web session filled the following conditions:

Smith	ComparisonOperator_Equal	ClientName
LogicalOperator_AND		
12/02/1961	ComparisonOperator_Equal	BirthDate

Condition1_Value = "Martin". Local variable of the voice session, is compared to the value of the global variable, ClientName, of the web session.

Condition1_Comparison = "ComparisonOperator_Equal". Comparison operator for the first condition is equal (See the ComparisonOperator Enum).

Condition1_ComparedVariableName = "ClientName". Global variable defined by the Service manager that contains the name of the client.

LogicalOperator = "LogicalOperator_AND". The logical operator between the two conditions is "AND" (See the LogicalOperator Enum).

Condition2_Value = "12/02/1961". Local variable of the voice session, is compared to the value of the global variable, BirthDate, of the web session.

Condition2_Comparison = "ComparisonOperator_Equal". Comparison operator for the second condition is equal (See the ComparisonOperator Enum).

Condition2_ComparedVariableName = "BirthDate". Global variable defined by the Service manager that contains the birth date of the client.

The association is done if there is a web session (non associated yet) for which the ClientName is equal to "Smith" and the BirthDate is equal to "12/02/1961".

14.1.6 DESCRIPTION OF THE "AGORACALLS" OBJECT

Properties of the "AgoraCalls" object

Tableau 14.9 PROPERTIES OF THE "AGORACALLS" OBJECT

Properties	Characteristics	Comments or values
Get Count() As Long	**Effect**	This function returns the number of items in the collection (at maximum equals to the number of extensions defined for the phone).
Get Item(ByVal vntIndexKey As Variant) As AgoraCall	**Effect**	It is used to recover an item form the "AgoraCall" collection (see § 14.1.5).
	Argument	*vntIndexKey* (input): it is the index or the key (constructed with the string "KEY" followed by an incremented number)
Get NewEnum	**Effect**	Enables the application to use the “For… Each” syntax in the PoolElements collection.

Methods of the "AgoraCalls" object

Tableau 14.10 METHODS OF THE "AGORACALLS" OBJECT

Method	Characteristics	Comments or values
Function CreateOutboundCall (ByVal astrServiceId As String, ByRef astrExtensionDN As String) As String	**Effect**	Creates a new outgoing call for the outgoing service chosen and reserves the associated extension for the current user. An AgoraCall object is aded to the collection for this call.
	Arguments	• astrServiceId (input): the outgoing service with which this call will be associated. • astrExtensionDN (output): forwards the number of the reserved extension. (The extension is automatically chosen by the server.)
	Returns	The identifier of the new call thus created.
	Required conditions	At least one professional extension of the current user must be free.
	Notes	• To obtain the list of authorised services for the current user, use GetOutboundServicesForCallCreation. • The duration of agent extension reservation is limited by the creation timeout (Service property). The call must have been added to the list of outgoing calls (via AddCallToDialList) before this deadline. Otherwise, a CallDeallocated event will indicate that the timeout has expired. • Call creation may be cancelled through the client application, using the EndOfTreatment method.
Function GetOutboundServicesForCallCreation(ByRef astrServices () As String) As Long	**Effect**	Used to obtain the list of outgoing services in production for which the current user may make a professional call on his or her own initiative.
	Arguments	• astrServices (output): list of service identifiers. The first item on the list bears number 1.
	Returns	Number of items on the list.
	Note:	Use this method before creating an outgoing professional call using CreateOutboundCall.
Sub MakePrivateCall(ByVal SourceExtension As String, ByVal DestinationDN As String)	**Effect**	It is used to make a new call
	Arguments	• SourceExtension (input): extension source (DN) • DestinationDN (input): it is the destination number to dial.
	Required conditions	The extension need to be free (IDLE state)

Events of the "AgoraCalls" object

Tableau 14.11 EVENTS OF THE "AGORACALLS" OBJECT (1/10)

Properties	Characteristics	Comments or values
AssociationReceived (ByVal AgoraCallId as String)	**Effect**	Informs the application that an association has been done with a call. The association can have been asked on the voice call (ExecuteAssociation method in the M5000 CC User API) or on the web session (Association node (see § 13.2.4.11) in a web tree). Note that the association can be done in both ways, from a voice session to a web session and vice-versa (in application using theM5000 CC User API).
	Argument	• AgoraCallId (input): Identifier of the AgoraCall that has been associated.
CallDeallocated (ByVal AgoraCall As Agora Call)	**Effect**	this event is raised to indicate that a call is removed from the collection for one of the following reasons: • a private inbound or private outbound call is released • an inbound call without script is released • the timeout before calling the SetInitiateResult function (10 seconds) (for an inbound or outbound call with script) is reached • the presentation timeout or global timeout of an inbound call (with or without script) is reached • The presentation timeout for an outgoing call has passed. • the EndOfTreatment function is called • the SetCallResult function is called • The creation timeout after CreateOutboundCall has been reached.
	Arguments	• AgoraCall: the argument specifies the concerned AgoraCall object.
	Note:	The corresponding AgoraCall object is removed from the collection (AgoraCalls).
ConsultationSuccess(ByVal AgoraCallId As String)	**Effect**	This event is raised when the consultation call of a transfer (initiated with the InitiateTransfer function only) succeeds.
	Arguments	• AgoraCallId: the argument specifies the Id of the concerned AgoraCall.

Tableau 14.11 EVENTS OF THE "AGORACALLS" OBJECT (2/10)

Properties	Characteristics	Comments or values
AgentsListStateChange(ByVal AgoraCallId As String, ByVal UserId As String, ByVal UserName As String, ByVal LogggedStatus As ckLoggedStatus, ByVal Activity As ckActivity)	**Effect**	This event is raised when the status of an agent (present in the list of agents predefined for a transfer) is modified.
	Arguments	1 AgoraCallId: this argument determines the AgoraCall involved. 2 UserId: this argument determines the identifier of the agent 3 UserName: this argument determines the name of the agent 4 LoggedStatus: this argument determines the status of the agent - ckStatusLOGIN = 0 : the agent is connected - ckStatusLOGOUT = 1 : the agent is logged out 5 Activity: this argument determines the activity of the agent - ckActivityREADY = 0 : ready - ckActivityNOTREADY = 1 : not ready - ckActivityPCP = 2 : Post Call Processing (PCP) - ckActivityBREAK = 3 : break (after managing a call)
	Note:	This event is available for background information purposes. Please use the "AgentsListStateChangeEx2" event for any new application.
AgentsListStateChangeEx2 (ByVal AgoraCallId As String, ByVal UserId As String, ByVal UserName As String, ByVal LogggedStatus As ckLoggedStatus, ByVal Activity As ckActivity, ByVal IsAvailable as Boolean)	**Effect**	This event is generated when the status of an agent (available on the list of agents predefined for a transfer) is modified.
	Arguments	1 AgoraCallId : this argument determines the AgoraCall involved. 2 UserId: this argument determines the identifier of the agent 3 UserName: this argument determines the name of the agent. 4 LoggedStatus: this argument determines the status of the agent. - ckStatusLOGIN = 0 : the agent is connected - ckStatusLOGOUT = 1: the agent is logged out 5 Activity: this argument determines the activity of the agent. - ckActivityREADY = 0 : ready - ckActivityNOTREADY = 1 : not ready - ckActivityPCP = 2 : Post Call Processing (PCP) - ckActivityBREAK = 3 : break (after managing a call) 6 IsAvailable: this argument determines whether the agent is available or not. This status takes into account not only its status and activity, but also the statuses of its extensions and the availability criterion for multi-line agents chosen for the service.
	Note:	This event replaces the previous AgentsListStateChange et AgentsListStateChangeEx events.

Tableau 14.11 EVENTS OF THE "AGORACALLS" OBJECT (3/10)

Properties	Characteristics	Comments or values
AgentsListStateChangeEx (ByVal AgoraCallId As String, ByVal UserId As String, ByVal UserName As String, ByVal LogggedStatus As ckLoggedStatus, ByVal Activity As ckActivity, ByVal IsIdle as Boolean) (continued)	**Effect**	This event is raised when the status of an agent (present in the list of agents predefined for a transfer) is modified.
	Arguments	1 AgoraCallId : this argument determines the AgoraCall involved. 2 UserId: this argument determines the identifier of the agent 3 UserName: this argument determines the name of the agent. 4 LoggedStatus: this argument determines the status of the agent. - ckStatusLOGIN = 0 : the agent is connected - ckStatusLOGOUT = 1: the agent is logged out 5 Activity: this argument determines the activity of the agent. - ckActivityREADY = 0 : ready - ckActivityNOTREADY = 1 : not ready - ckActivityPCP = 2 : Post Call Processing (PCP) - ckActivityBREAK = 3 : break (after managing a call) 6 IsIdle: this argument determines whether the agent is free (True) or busy (False).
	Note:	This event is available for background information purposes only. Please use the AgentsListStateChangeEx2 event for any new application.
LineCallStateChange(ByVal AgoraCallId As String, ByVal NewState As UsrApi_LineCallState)	**Effect**	Indicates the status of the call present on the extension
	Arguments	• AgoraCallId: specifies the identifier of the "AgoraCall" object. • NewState: specifies the status of the call on this extension: - usr_LineBusy = 1 (the extension to reach is busy) - usr_LineBusy = 2 (the extension to reach is ringing) - usr_LineDialTone = 3 (the agent's extension is dialling)
	Note:	When usr_LineDialTone is received, the physical call does not exist, therefore the "AgoraCallId" argument contains the empty character string
AnswerResult (ByVal AgoraCallId As String, ByVal Result As gckenumTelephonyActionResult)	**Effect**	Warns the application of the result of the Reply method.
	Arguments	• AgoraCallId (output): Identifier of the AgoraCall object. • Result (output): Result of the method called.
AnswerResult (ByVal AgoraCallId As String, ByVal Result As gckenumTelephonyActionResult)	**Note:**	The gckenumTelephonyAction Result enumerated type has several possible values: • gckenumTARSuccess = 1: Successful. • gckenumTAREror = 2: Error. • gckenumTARTimeOut = 3: Time out if the result of the method has not been received after 30 seconds.

Tableau 14.11 EVENTS OF THE "AGORACALLS" OBJECT (4/10)

Properties	Characteristics	Comments or values
HoldResult (ByVal AgoraCallId As String, ByVal Result As gckenumTelephonyActionResult)	**Effect**	warns the application of the result of the Hold method.
	Arguments	• AgoraCallId (output): Identifier of the AgoraCall object. • Result (output): Result of the method called.
	Note:	The gckenumTelephonyActionResult enumerated type has several possible values: • gckenumTARSuccess = 1: Successful. • gckenumTARError = 2: Error. • gckenumTARTimeOut = 3: Time out if the result of the method has not been received after 30 seconds.
UnHoldResult (ByVal AgoraCallId As String, ByVal Result As gckenumTelephonyActionResult)	**Effect**	Warns the application of the result of the Unhold method.
	Arguments	• AgoraCallId (output): Identifier of the AgoraCall object. • Result (output): Result of the method called.
	Note:	The gckenumTelephonyAction Result enumerated type has several possible values: • gckenumTARSuccess = 1: Successful. • gckenumTARError = 2: Error. • gckenumTARTimeOut = 3: Time out if the result of the method has not been received after 30 seconds.
DropResult (ByVal AgoraCallId As String, ByVal Result As gckenumTelephonyActionResult)	**Effect**	Warns the application of the result of the ReleaseCall method.
	Arguments	• AgoraCallId (output): Identifier of the AgoraCall object. • Result (output): Result of the method called.
	Note:	The gckenumTelephonyActionResult enumerated type has several possible values: • gckenumTARSuccess = 1: Successful. • gckenumTARError = 2: Error. • gckenumTARTimeOut = 3: Time out if the result of the method has not been received after 30 seconds.
MakePrivateCallResult (ByVal AgoraCallId As String, ByVal Result As gckenumTelephony ActionResult)	**Effect**	Warns the application of the result of the MakePrivateCall method.

Tableau 14.11 EVENTS OF THE "AGORACALLS" OBJECT (5/10)

Properties	Characteristics	Comments or values
MakePrivateCallResult (ByVal AgoraCallId As String, ByVal Result As gckenumTelephony ActionResult) (continued)	**Arguments**	• AgoraCallId (output): Identifier of the AgoraCall object. • Result (output): Result of the method called.
	Note:	The gckenumTelephonyAction Result enumerated type has several possible values: • gckenumTARSuccess = 1: Successful. • gckenumTAREror = 2: Error. • gckenumTARTimeOut = 3: Time out if the result of the method has not been received after 30 seconds.
MakeOutboundCallResult (ByVal AgoraCallId As String, ByVal Result As gckenumTelephony ActionResult)	**Effect**	Warns the application of the result of the MakeOutboundCall method.
	Arguments	• AgoraCallId (output): Identifier of the AgoraCall object. • Result (output): Result of the method called.
	Note:	The gckenumTelephonyAction Result enumerated type has several possible values: • gckenumTARSuccess = 1: Successful. • gckenumTAREror = 2: Error. • gckenumTARTimeOut = 3: Time out if the result of the method has not been received after 30 seconds.
SetupTransferResult (ByVal AgoraCallId As String, ByVal Result As gckenumTelephonyActionResult)	**Effect**	Warns the application of the result of the InitiateTransfer.
	Arguments	• AgoraCallId (output): Identifier of the AgoraCall object. • Result (output): Result of the method called.
	Note:	The gckenumTelephonyAction Result enumerated type has several possible values: • gckenumTARSuccess = 1: Successful. • gckenumTAREror = 2: Error. • gckenumTARTimeOut = 3: Time out if the result of the method has not been received after 30 seconds.
SetupAgentTransferResult (ByVal AgoraCallId As String, ByVal Result As gckenumTelephonyActionResult)	**Effect**	Warns the application of the result of the InitiateAgentTransfer method.
	Arguments	• AgoraCallId (output): Identifier of the AgoraCall object. • Result (output): Result of the method called.
SetupAgentTransferResult (ByVal AgoraCallId As String, ByVal Result As gckenumTelephony ActionResult) (continued)	**Note:**	The gckenumTelephonyAction Result enumerated type has several possible values: • gckenumTARSuccess = 1: Successful. • gckenumTAREror = 2: Error. • gckenumTARTimeOut = 3: Timeout if the result of the method has not been received after 30 seconds.

Tableau 14.11 EVENTS OF THE "AGORACALLS" OBJECT (6/10)

Properties	Characteristics	Comments or values
CancelTransferResult (ByVal AgoraCallId As String, ByVal Result As gckenumTelephonyActionResult)	**Effect**	Warns the application of the result of the CancelTransfer method.
	Arguments	• AgoraCallId (output): Identifier of the AgoraCall object. • Result (output): Result of the method called.
	Note:	The gckenumTelephonyAction Result enumerated type has several possible values: • gckenumTARSuccess = 1: Successful. • gckenumTAREror = 2: Error. • gckenumTARTimeOut = 3: Timeout if the result of the method has not been received after 30 seconds.
CompleteTransferResult (ByVal AgoraCallId As String, ByVal Result As gckenumTelephony ActionResult)	**Effect**	Warns the application of the result of the TerminateTransfer method.
	Arguments	• AgoraCallId (output): Identifier of the AgoraCall object. • Result (output): Result of the method called.
	Note:	The gckenumTelephonyAction Result enumerated type has several possible values: • gckenumTARSuccess = 1: Successful. • gckenumTAREror = 2: Error. • gckenumTARTimeOut = 3: Time out if the result of the method has not been received after 30 seconds.
BlindTransferResult (ByVal AgoraCallId As String, ByVal Result As gckenumTelephonyActionResult)	**Effect**	Warns the application of the result of the BlindTransfer method.
	Arguments	• AgoraCallId (output): Identifier of the AgoraCall object. • Result (output): Result of the method called.
	Note:	The gckenumTelephonyAction Result enumerated type has several possible values: • gckenumTARSuccess = 1: Successful. • gckenumTAREror = 2: Error. • gckenumTARTimeOut = 3: Time out if the result of the method has not been received after 30 seconds.

Tableau 14.11 EVENTS OF THE "AGORACALLS" OBJECT (7/10)

Properties	Characteristics	Comments or values
BlindAgentTransferResult (ByVal AgoraCallId As String, ByVal Result As gckenumTelephonyActionResult)	**Effect**	Warns the application of the result of the BlindAgentTransfer method.
	Arguments	• AgoraCallId (output): Identifier of the AgoraCall object. • Result (output): Result of the method called.
	Note:	The gckenumTelephonyAction Result enumerated type has several possible values: • gckenumTARSuccess = 1: Successful. • gckenumTARError = 2: Error. • gckenumTARTimeOut = 3: Time out if the result of the method has not been received after 30 seconds.
SwapHoldResult (ByVal AgoraCallId As String, ByVal Result As gckenumTelephonyActionResult)	**Effect**	Warns the application of the result of the SwapHold method.
	Arguments	• AgoraCallId (output): Identifier of the AgoraCall object. • Result (output): Result of the method called.
	Note:	The gckenumTelephonyAction enumerated type Result has various possible values: • gckenumTARSuccess = 1: Successful. • gckenumTARError = 2: Error. • gckenumTARTimeOut = 3: Time out if the result of the method has not been received after 30 seconds.
ExtensionStateChange(ByVal AgoraCallId As String, ByVal PhysicalExtensionStatus As ckPhysicalExtensionStatus)	**Effect**	this event is raised when the extension status changes.
	Arguments	• AgoraCallId: this argument specifies the concerned AgoraCall. • ExtensionId: this argument specifies the concerned extension. • PhysicalExtensionStatus: this argument specifies the extension status: • ckExtensionStateIdle = 1: the extension is idle • ckExtensionStateSteady = 2: the extension has an active call • ckExtensionStateRing = 3: extension is ringing • ckExtensionStateHold = 4: a call is on hold on the extension • ckExtensionStateVTGBlink = 5: the extension is blinking (in a VTG configuration only)
	Note:	none

Tableau 14.11 EVENTS OF THE "AGORACALLS" OBJECT (8/10)

Properties	Characteristics	Comments or values
NewInboundScript (ByVal AgoraCallId As String)	**Effect**	This event is raised to indicate that a new inbound call with a user script is received. The client application must reply (using the SetInitiateResult function) before the timeout (for starting the script: 10 seconds).
	Argument	• AgoraCallId: the argument specifies the Id of the new AgoraCall.
	Note:	An object (AgoraCall) is added to the collection (AgoraCalls).
NewIncomingCall(ByValAgoraCallId As String)	**Effect**	This event is raised to indicate that the user receives a new private call or it indicates that an incoming call without script is transferred by M5000 CC to the user.
	Argument	• AgoraCallId: the argument specifies the Id of the (new) AgoraCall.
	Note:	An object (AgoraCall) is added to the collection (AgoraCalls).
NewOutboundScript(ByVal AgoraCallId As String)	**Effect**	This event is raised to indicate that a new outbound call is transferred to the user. The client application must reply (using the SetInitiateResult function) before the timeout (for starting the script: 10 seconds).
	Argument	• AgoraCallId: the argument specifies the Id of the new AgoraCall.
	Notes	An object (AgoraCall) is added to the collection (AgoraCalls). This event is available for background information purposes. Please use the "NewOutboundScriptEx" event for any new application.
NewOutboundScriptEx(ByVal AgoraCallId As String, ByVal ablnOutboundDirectDial As Boolean)	**Effect**	This event is raised to indicate that a new outbound call is transferred to the user. The client application must reply (using the SetInitiateResult function) before the timeout (for starting the script: 10 seconds).
	Arguments	• AgoraCallId: the argument specifies the Id of the new AgoraCall. • ablnOutboundDirectDial: indicates whether the agent is supposed to take any action before the call is made (value False) or whether it must be made immediately (value True). In all cases, it is the client application that decides when to make the call using the MakeOutboundCall method.
	Note:	An object (AgoraCall) is added to the collection (AgoraCalls).

Tableau 14.11 EVENTS OF THE "AGORACALLS" OBJECT (9/10)

Properties	Characteristics	Comments or values
NewOutgoingCall(ByVal AgoraCallId As String)	**Effect**	This event is raised to indicate that a new private call is initialized by the user.
	Argument	• AgoraCallId: the argument specifies the Id of the new AgoraCall.
	Note:	An object (AgoraCall) is added to the collection (AgoraCalls).
SynchronizationResult()	**Effect**	Informs the application of the result of the ExecuteSynchronization method.
	Arguments	• AgoraCallId (input): Identifier of the AgoraCall that asked the Synchronization. • SynchronizationResult (input): result of the Synchronization.
	Note:	The SynchronizationResult enum has different possible values: • SynchronizationResult_Error = 1 (Error occurred during synchronization) • SynchronizationResult_Intitiated = 2 (Synchronization is successfully done) • SynchronizationResult_BadDestinationTreeName = 3 (Destination tree is not valid) • SynchronizationResult_BadDestinationNodeId = 4 (Destination node is not valid)
TransferResult(ByVal AgoraCallId As String, ByVal TransferResult As ckTransferResult)	**Effect**	This event indicates the result of the transfer (with the InitiateTransfer function only).
	Arguments	• AgoraCallId: the argument specifies the Id of the concerned AgoraCall. • TransferResult: this argument specifies the result of the transfer: • ckTransferOk = 0: the transfer succeeded • ckNoAgentAvailable = 3: the destination is busy • ckCallDisconnectetByCaller = 4: the call has been disconnected by the caller • ckTransferError = 5: an error occurred
ConsultationConnected(ByVal AgoraCallId As String)	**Effect**	Is generated when the consultation call for a transfer to an agent (initiated using the InitiateTransfer function) is made in the connected status.
	Argument	• AgoraCallId: this argument determines the AgoraCall involved.

Tableau 14.11 EVENTS OF THE "AGORACALLS" OBJECT (10/10)

Properties	Characteristics	Comments or values
ReleaseCallDetectionAfterConsultationEstablished(ByVal astrAgoraCallId As String)	**Effect**	This event is generated, during the consultaion call (connection set up), when the caller on-hooks.
	Arguments	• AgoraCallId: this argument determines the AgoraCall involved.
	Note:	When this event is received, this means that the caller has on-hooked, but the consultation call is still in progress. The result of the transfer will be received once the consultation call is disconnected. This result will, of course, be ckCallDisconnectetByCaller = 4: the call has been disconnected by the caller. This event can be received for all types of monitored transfers (to a member of the Service, to an agent, to an extension, and also for a private transfer).
ConferenceMembershipChanged(ByVal AgoraCallId As String, ByVal Address As String, ByVal AddressConfType As gckenumAddressConfType, ByVal MissingAddress As String, ByVal MissingAddressConfType As gckenumAddressConfType)	**Effect**	is generated when a participant in a conference leaves the conference.
	Arguments	• AgoraCallId: this argument determines the AgoraCall involved. • Address: this argument specifies the target telephone address for this event • AddressConfType: this argument specifies the type of telephone address for this event It translates the role of the adress in the conference. • gckenumAddressConfTypeUndefined = 0: Type undefined • gckenumAddressConfTypeCaller = 1: Calling type • gckenumAddressConfTypeMaster = 2: Type of conference initiator • gckenumAddressConfTypeCalled = 3: Type called (by the conference initiator) • MissingAddress: this argument sets the telephone address having left the conference • MissingAddressConfType: this argument sets the type of telephone address having left the conference It translates the role of the adress in the conference. • gckenumAddressConfTypeUndefined = 0: Type undefined • gckenumAddressConfTypeCaller = 1: Calling type • gckenumAddressConfTypeMaster = 2: Type of conference initiator • gckenumAddressConfTypeCalled = 3: Type called (by the conference initiator)
ScriptCanceled(ByVal AgoraCallId As String	**Effect**	Is generated when using the script is no longer authorized. This occurs when an agent transfers a call to a script with another agent and ultimately, decides to keep the script.
	Argument	• AgoraCallId: this argument determines the AgoraCall involved.

14.1.7 DESCRIPTION OF THE "AGORAEMAIL" OBJECT

AgoraEmail is a class. The AgoraEmail object represents the e-mail being treated by the *application*.

Note: application has to be understood as the application using UserCookiesAPI.

Methods are especially defined to manage e-mails; only one method at a time can be used. Another method can be used only after the delivery of the result of the previous method (given by the corresponding event).

Properties of the "AgoraEmail" object

Tableau 14.12 PROPERTIES OF THE "AGORAEMAIL" OBJECT

Properties	Comments or values
EmailHandlingBeginTime	Time of the beginning of the e-mail processing. EmailHandlingBeginTime est du type Date.
Id	The identifier of the corresponding e-mail object (also index in the collection). Id As String.
Sender	The Sender address of the e-mail object. Sender As String
ServiceId	Name of the Service associated with the e-mail object. ServiceId As String.
ServiceVersionNumber	The ServiceVersionNumber associated with the ServiceId. ServiceVersionNumber As Long

Methods of the "AgoraEmail" object

The Delete, Reply, Forward, Move and Copy methods are asynchronous methods. Only one method at a time can be used. In order to use another method, for example the Delete method after the Reply method, the result of the Reply method (ReplyResult event) has to be received.

Tableau 14.13 METHODS OF THE "AGORAEMAIL" OBJECT (1/4)

Properties	Characteristics	Comments or values
Sub AddItemToSetTypeGlobalVariable (ByVal VariableName As String, Byval NewValue As Variant)	**Effect**	This function is used to add a new item in a global variable of “Set” type.
	Argument	• VariableName (input): the name of the global variable • NewValue (input): the value you want to add
Sub AssignGlobalVariableValue(ByVal VariableName As String, Byval NewValue As Variant)	**Effect**	This function is used to modify the value of a global variable. • User variable (numeric, string, date or derived variable) • Intrinsic variable
	Argument	• VariableName (input): the name of the global variable you want to modify • NewValue (input): the value you want to store in the variable
	Note:	• An intrinsic variable must have the Read/Write attibute in order to modify it. • Derived variables can not be modified
Sub ClearSetTypeGlobalVariable(ByVal VariableName As String)	**Effect**	This function is used to remove all the items of a global variable of “Set” type.
	Argument	VariableName (input): the name of the global variable

Tableau 14.13 METHODS OF THE "AGORAEMAIL" OBJECT (2/4)

Properties	Characteristics	Comments or values
Sub Copy(ByVal MessageToAddBefore As String, ByVal DestinationStoreName As String, ByVal DestinationFolderPath As String)	**Effect**	Enables the *application* to copy e-mail.
	Arguments	• MessageToAddBefore (input). Text added to the e-mail. • DestinationStoreName (input). The name of the store where the e-mail has to be copied. • DestinationFolderPath (input). The path of the folder where the e-mail has to be copied.
Sub Delete(ByVal DestroyPermanently As Boolean)	**Effect**	Enables the application to delete the e-mail. This method is asynchronous. Only one method at a time can be used after the delivery of the result of the preceding method (given by the correspponding event).
	Arguments	DestroyPermanently (input). If the DestroyPermanently argument is equal to True, the e-mail is permanently destroyed. If DestroyPermanently is equal to False, the e-mail is moved in a folder that contains deleted items.
Sub EndOfTreatment(ByVal TerminationCode As Treatment EndCode)	**Effect**	Enables the application to end processing of the e-mail. The corresponding AgoraEmail object is destroyed.
Sub EndOfTreatment(ByVal TerminationCode As Treatment EndCode) (continued)	**Arguments**	TerminationCode (input). TheTreatmentEndCode enum has different possible values: • Treatment_IsExecuted = 0: treatments well terminated • Treatment_IsCanceled = 1: treatment canceled • Treatment_IsStopped = 2: treatment not terminated but well stopped
Sub Forward(ByVal ForwardMessageContent As String, ByVal ForwardRecipients As String, ByVal SaveInSentItems)	**Effect**	Enables the application to forward e-mail. This method is asynchronous. Only one method at a time can be used to manage e-mails. Another method can be used only after the delivery of the result of the previous method (given by the corresponding event).
	Arguments	• ForwardMessageContent (input). Text added to the e-mail. • ForwardRecipients (input). String with a concatenation of the different recipients to forward. A semi-colon separates the e-mail addresses in the ForwardRecipients. • SaveInSentItems (input): Boolean meaning that the e-mail is saved in the 'Sent Items' folder of the mailbox.

Tableau 14.13 METHODS OF THE "AGORAEMAIL" OBJECT (3/4)

Properties	Characteristics	Comments or values
Fonction GetProperty (ByVal PropertyType As EmailProperty) As Variant	**Effect**	Enables the application to get property about the e-mail: ID, EmailHandlingBeginTime, Sender, ServiceId and ServiceVersionNumber. Only one property at a time can be asked.
	Arguments	PropertyType (input). Asked property
	Returns	EMailProperty enum peut prendre différentes valeurs (Public Enum définie dans la classe AgoraEmail): • EmailProperty_Id = 1 • EmailProperty_EmailHandlingBeginTime = 2 • EmailProperty_ServiceId = 3 • EmailProperty_ServiceVersionNumber = 4 • EmailProperty_Sender = 5
Sub Move(ByVal MessageToAddBefore As String, ByVal DestinationStoreName As String, ByVal DestinationFolderPath As String)	**Effect**	Enables the application to move e-mails.
	Arguments	• MessageToAddBefore (input). Text added to the e-mail. • DestinationStoreName (input). The name of the store where the e-mail has to be moved. • DestinationFolderPath (input). The path of the folder where the e-mail has to be moved.
Sub RemoveItemFromSetTypeGlobalVariable (ByVal VariableName As String, Byval ValueToRemove As Variant)	**Effect**	This function is used to remove one item of a global variable of “Set” type.
	Argument	• VariableName (input): the name of the global variable • ValueToRemove (input): the value you want to delete
Sub Reply (ByVal ReplyMessageContent As String, ByVal IncludeOriginalMessage As Boolean, ByVal EMailReplyMode As EmailReplyMode, ByVal SaveInSentItems)	**Effect**	Enables the application to reply to an e-mail. This method is asynchronous. Only one method at a time can be used to manage e-mails. Another method can be used only after the delivery of the result of the previous method (given by the corresponding event).
	Arguments	• ReplyMessageContent (input). Text added to the e-mail. ReplyMessageContent contains the replied message. • IncludeOriginalMessage (input). Boolean expression indicating whether the original text must be included. If IncludeOriginalMessage is equal to True, the original message is included; if IncludeOriginalMessage is equal to False, the original message is not included. • EmailReplyMode (input). The EmailReplyMode is an Enum. It can be equal to 1: EmailReply_ToSender: the e-mail is returned only to the sender. It can also be equal to 2: EmailReply_ToAll: in this case the e-mail is sent to all recipients and to the sender. • SaveInSentItems (input): Boolean meaning that the e-mail is saved in the 'Sent Items' folder of the mailbox.

Tableau 14.13 METHODS OF THE "AGORAEMAIL" OBJECT (4/4)

Properties	Characteristics	Comments or values
Function RetrieveGlobalVariableValue (ByVal VariableName As String)	**Effect**	This function is used to get the value of a global variable: • User variable (numeric, string, date or derived variable) • Intrinsic variable
	Argument	VariableName (input): the name of the global variable you want to get
	Returns	the value of the property as variant.
Function RetrieveSetType GlobalVariableValue (ByVal VariableName As String)	**Effect**	This function is used to get all the items contained in the global variable of “Set” type.
Function RetrieveSetType GlobalVariableValue (ByVal VariableName As String) (continued)	**Argument**	VariableName (input): the name of the global variable you want to get
	Returns	an object of the SetTypeGlobalVariable type (collection with the Item, Count and NewEnum methods) containing all values of the variable
Sub SetInitiateResult (ByVal InitiatingResult As InitiatingResult)	**Effect**	Enables the application to confirm the beginning of processing for the e-mail. Has to be called within 10s after the call to AskElement if the AskElement method has returned True. The EndOfTreatment has to be called when the e-mail processing is ended.
	Arguments	InitiatingResult (input) The InitiatingResult enum has different possible values: • Run_IsInitiated = 0: Confirms the start of the script • Run_IsNotInitiated = 1: Invalidates the start of the script

14.1.8 DESCRIPTION OF THE "AGORAEMAILS" OBJECT

AgoraEmails is a collection class. This class represents e-mails that are being treated by the application. This application has various methods and events to manage e-mails.

Note: application has to be understood as the application using UserCookiesAPI.

Properties of the "AgoraEmails" object

Tableau 14.14 PROPERTIES OF THE "AGORAEMAILS" OBJECT

Properties	Characteristics	Comments or values
Count		Enables the application to access the total number of e-mails that are being treated by the agent
NewEnum		Enables the application to use the “For… Each” syntax in the AgoraEmails collection.

Tableau 14.14 PROPERTIES OF THE "AGORAEMAILS" OBJECT

Item		Enables the application to access an AgoraEmail object in the AgoraEmails collection
	Arguments	AgoraEmail As Variant (ByVal). AgoraEmail identifier or index in the collection. INPUT
	Returns	Requested AgoraEmail object (see § 14.1.7) or Nothing if theAgoraEmail doesn't exist. OUTPUT

Events of the "AgoraEmails" object

Tableau 14.15 EVENTS OF THE "AGORAEMAILS" OBJECT (1/2)

event	Characteristics	Comments or values
CopyResult (ByVal AgoraEmailId As String, ByVal EmailActionResult As EmailActionResult)	**Effect**	Warns the application of the result of the Copy method.
	Arguments	• AgoraEmailId As String (ByVal). AgoraEmail identifier forwarded. • EmailActionResult as EmailActionResult (ByVal). Copy method result.
DeleteResult (ByVal AgoraEmailId As String, ByVal EmailActionResult As EmailActionResult)	**Effect**	Warns the application of the result of the Delete method.
	Arguments	• AgoraEmailId. Identifier of the AgoraEmail deleted. • EmailActionResult. Delete method result.
EmailDeallocated (ByVal AgoraEmailId As String)	**Effect**	Warns the application of the fact that the e-mail is no longer allocated to the agent. The corresponding AgoraEmail object is removed from the AgoraEmails collection. This object can't be treated anymore by the application.
	Note:	Deallocation arrives when an e-mail was added, but SetInitiateResult wasn't called successfully within 10 seconds.
	Arguments	AgoraEmailId As String (ByVal). Identifier of the AgoraEmail deallocated.
ForwardResult (ByVal AgoraEmailId As String, ByVal EmailActionResult As EmailActionResult)	**Effect**	Warns the application of the result of the Forward method.
	Arguments	• AgoraEmailId As String (ByVal). Identifeir of the AgoraEmail forwarded. • EmailActionResult as EmailActionResult (ByVal). Forward method result.
MoveResult (ByVal AgoraEmailId As String, ByVal EmailActionResult As EmailActionResult)	**Effect**	Warns the *application* of the result of the Move method.
	Arguments	• EAgoraEmailId As String (ByVal). AgoraEmail identifier forwarded. • EmailActionResult as EmailActionResult (ByVal). Move method result.

Tableau 14.15 EVENTS OF THE "AGORAEMAILS" OBJECT (2/2)

event	Characteristics	Comments or values
ReplyResult (ByVal AgoraEmailId As String, ByVal EmailActionResult As EmailActionResult)	**Effect**	Warns the application of the result of the Reply method.
	Arguments	• AgoraEmailId As String (ByVal). Identifier of the AgoraEmail replied. • EmailActionResult as EmailActionResult (ByVal). Reply method result.
EMailActionResult() may have different values :		• EmailActionResult_Success = 1: success of the action • EmailActionResult_NoMessage = 2: The requested e-mail is not present in the Inbox • EmailActionResult_NoSession = 3: The e-mail session is not initialized • EMailActionResult_NoRecipients = 4: The recipients in the e-mail are not present • EmailActionResult_Error = 5: Unexpected error • EmailActionResult_InvalidStoreName = 6: the folder specified to copy or move the e-mail doesn't exist • EmailActionResult_InvalidFolderPath = 7: The store (Mailbox or Public Folders) specified to copy or move the e-mail doesn't exist • EmailActionResult_TimeOut = 8: e-mail nodes execution timeout expired: ReplyEmail, ForwardEmail, DeleteEmail, MoveEmail or CopyEmail

14.1.9 DESCRIPTION OF THE "ASSOCIATEDVARIABLE" OBJECT

The AssociatedVariable object is an object containing the name and value of each global variable for which the Service manager has selected “Include in user display”.

Properties of the "AssociatedVariable" object

Tableau 14.16 PROPERTIES OF THE "ASSOCIATEDVARIABLE" OBJECT

Properties	Comments or values
Name	The name of the variable. Name As String
Value	The value of the variable. Name As String
FieldId	The field number which the variable is associated. FieldId As Integer.

Methods of the "AssociatedVariable" object

Tableau 14.17 METHODS OF THE "ASSOCIATEDVARIABLE" OBJECT

Methods	Characteristics	Comments or values
Fonction IsEmpty () As Boolean	**Effect**	Returns a Boolean indicating if there is a variable associated to this field
	Returns	Boolean indicating if there is a variable associated to this field

14.1.10 DESCRIPTION OF THE "ASSOCIATEDVARIABLES" OBJECT

The “AssociatedVariables” class contains a collection of 3 AssociatedVariable objects (an "AssociatedVariable" object (see Section 14.1.9) contains the name and value of each global variable for which the Service manager has selected “Include in user display”) in the field order (item1 = variable associated with the field 1, item2 = variable associated with the field 2, item3 = variable associated with the field 3). The "IsEmpty" method is used to determine whether a variable actually is in the collection. The first two associated variables can be empty, but not the third. The IsEmpty method enables knowing the place in the collection of an associated variable.

Note: application has to be understood as the application using UserCookiesAPI.

Properties of the "AssociatedVariables" object

Tableau 14.18 PROPERTIES OF THE "ASSOCIATEDVARIABLES" OBJECT

Properties	Comments or values
Count	Enables the *application* to access the total number of variables (3). Count As Long
NewEnum	Enables the application to use the “For… Each” syntax in the AssociatedVariables collection.

Methods of the "AssociatedVariables" object

Tableau 14.19 METHODS OF THE "ASSOCIATEDVARIABLES" OBJECT

Methods	Characteristics	Comments or values
Function Item (ByVal Id As Integer) As AssociatedVariable	**Effect**	Enables the application to access an object AssociatedVariable in the collection AssociatedVariables.
	Arguments	Id (input). PoolElement index in the collection.
	Returns	Requested AssociatedVariable object or Nothing if the AssociatedVariable doesn’t exist.

14.1.11 DESCRIPTION OF THE "COOKIES_USR_SESSION" OBJECT

Properties of the "Cookies_USR_Session" object

Tableau 14.20 PROPERTIES OF THE "COOKIES_USR_SESSION" OBJECT

Properties	Comments or values
AgoraCalls	AgoraCall objects collection (see § 14.1.5) called AgoraCalls (see § 14.1.6)
AgoraEmails	AgoraEmail objects collection (see § 14.1.7) called AgoraEmails (see § 14.1.8)
ConnectedComponentId	The identifier of the component (defined by the server) as a string
IPAddress	The IP address (used for the connection) as a string
IPPort	The IP port (used for the connection) as a string
PoolElements	PoolElement objects collection (see § 14.1.21) called PoolElements (see § 14.1.22)
User	A reference to the "User" object (see § 14.1.29)
ExposedStatusEntities	ExposedStatusEntity objects collection (see § 14.1.15) called ExposedStatusEntities (see § 14.1.16)

Methods of the "Cookies_USR_Session" object

Tableau 14.21 METHODS OF THE "COOKIES_USR_SESSION" OBJECT

Methods	Characteristics	Comments or values
Sub Connect(ByVal VersionsFilePath As String, ByVal UserId As String, ByVal Password As String, ByVal PhoneId As String, Optional ByVal UDPPort As Long = 0, Optional ByVal IPAddress As String = "", Optional ByVal HostName As String = "", Optional ByVal ablnKillIfAlreadyConnected As Boolean)	**Effect**	First function to use to connect a client application to the M5000 CC Server.
	Arguments	• VersionFilePath (input): specify the path to the Version.CFG file • UserId (input): enter your user identifier or your alias number • Password (input): enter your password (defined by the Administrator). • PhoneId (input): enter the identifier of the phone you will work with, as defined by the Administrator. • ablnKillIfAlreadyConnected: If this optional argument is set to false, the connection will fail if the user is already connected to the the same PC. Otherwise, the exisiting connection will be cut, and a new one setup. This mechanism is used to reconnect a user after his CRM application has crashed. • Optional arguments are used only if all of them are not null. If not specified, check the parameter of the computer where the DLL is running. They are used to receive messages from the server; if UDPPort=0, the application will choose itself the UDP port. If some UDP ports are unavailable (i.e. for security), you need to specificy your IP address, your hostname and which UDP port you want to use.
	Required conditions	The M5000 CC Server must be programmed
	Consequences	None. This sub does NOT guarantee that the connection is set up.
	Errors raised	An error is raised if one of the parameters is incorrect.
Function GetProperty(ByVal PropertyType As USR_Session_PropertyType) As Variant	**Effect**	Gets a property relative to the USR_Session object.
	Arguments	PropertyType (input): the argument you specify must be one of the following values: • usr_sesConnectedComponentId = 1: returns the identifier of the component (defined by the server) as a string • usr_sesIPAddress = 2: returns the IPAddress (used for the connection) as a string • usr_sesIPPort = 3 : returns the IP Port (used for the connection) as a string
	Returns	The value of the property.

Methods of the "Cookies_USR_Session" object

Tableau 14.22 METHODS OF THE "COOKIES_USR_SESSION" OBJECT

Events	Characteristics	Comments or values
NewStatusMessageArrived	**Effect**	This event is raised when a new status message is issued by the M5000 CC Server.
UnexpectedError(ByVal ErrNumber As Long, ByVal ErrSource As String, ByVal ErrDescription As String)	**Effect**	This event is raised when an error occurs during loading the CookiesUserAPI DLL or when it receives messages from the M5000 CC Server.
	Arguments	• ErrNumber: the number of the error that occurred in the CookiesUserAPI DLL • ErrSource: the source of the error that occurred in the CookiesUserAPI DLL • ErrDescription: the description of the error that occurred in the CookiesUserAPI DLL
	Note:	• Errors have various possible values, including: • UsrAPI_NoHeldCallToSwap = -2146422470: There's no held consultation call to swap. • UsrAPI_CannotExecuteSwapHold = -2146422471: Impossible to swap the call on hold • UsrAPI_ActionRequestAlreadyInCollection = -2146422472: The request is already in the requests collection.
Autokill	**Effect**	This event is generated when a connection problem is detected on the server (network problem, server failure). The application must set up the connection. Initially, the object must be set to “Nothing” then recreated.
NewInstantPersonalMessage	**Effect**	This event is generated when an instant personal message is received.
	Arguments	• astrSenderName: Sender name • astrMessage: the message itself

14.1.12 DESCRIPTION OF THE "DAILYCOUNTERS" OBJECT

Diagram

The following diagram shows the "DailyCounters" class an instance of which is returned by the "User.GetDailyCounters()" method:

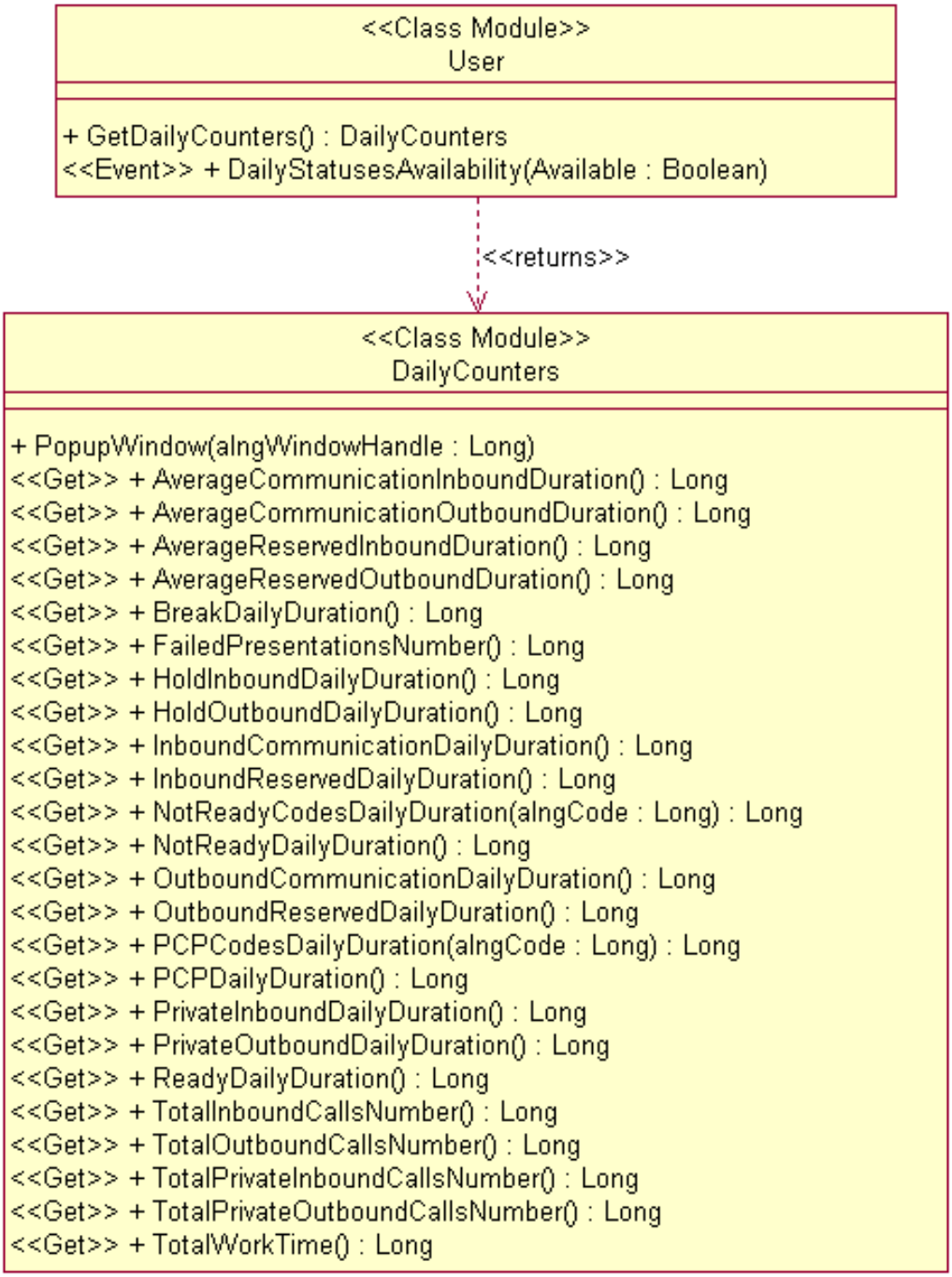


Figure 14.1 DIAGRAM OF THE "DAILY COUNTERS" OBJECT

Properties of the "Daily counters" object

This object provides an overview of the day's statistics for a user (agent). The properties of this object represent:

- either the average or total **durations** since the beginning of the day, expressed in number of seconds (Long type)
- or the **number of calls** since the beginning of the day (Long type).

If the Service manager or team manager does not authorise the users to read these properties, an error is

returned (number -2146422468, "Access denied").

Properties of the "DailyCounters" object

Tableau 14.23 PROPERTIES OF THE "DAILY COUNTERS" OBJECT (1/2)

Properties	Comments or values
AverageCommunicationInboundDuration	Average duration of a service's inbound calls answered by the agent
AverageCommunicationOutboundDuration	Average duration of a service's outbound calls made by the agent
AverageReservedInboundDuration	Average ringing duration of a service's inbound calls presented to the agent
AverageReservedOutboundDuration	Average duration of the presentation of a service's outbound calls made by the agent
BreakDailyDuration	Total duration of the agent's break
FailedPresentationsNumber	Total number of unanswered calls presented to the agent
HoldInboundDailyDuration	Total length of time during which a service's inbound calls answered by the agent are put on hold
HoldOutboundDailyDuration	Total length of time during which a service's outbound calls made by the agent are put on hold
InboundCommunicationDailyDuration	Total duration of a service's inbound calls answered by the agent
InboundReservedDailyDuration	Total ringing duration of a service's inbound calls presented to the agent
NotReadyCodesDailyDuration (alngCode As Long)	Total duration of Not Ready activity and alngCode. The alngCode parameter must be within the [0, 10] interval.
NotReadyDailyDuration	Total duration of Not Ready activity (total duration obtained by the property)
OutboundCommunicationDailyDuration	NotReadyCodesDailyDuration for all possible codes
OutboundReservedDailyDuration	Total duration of a service's outbound calls made by the agent
PCPCodesDailyDuration	Total duration of the presentation of a service's outbound calls made by the agent
PCPDailyDuration	Total duration of PCP activity and alngCode The alngCode parameter must be within the [0, 5] interval.
PrivateInboundDailyDuration	Total duration of PCP activity (total duration obtained by the property PCPCodesDailyDuration for all the possible codes)
PrivateOutboundDailyDuration	Total duration of the agent's inbound private calls
ReadyDailyDuration	Total duration of outbound private calls made by the agent
TotalInboundCallsNumber	Total duration of agent availability
TotalOutboundCallsNumber	Number of a service's inbound calls answered by the agent
TotalPrivateInboundCallsNumber	Number of a service's outbound calls made by the agent
TotalPrivateInboundCallsNumber	Number of inbound private calls answered by the agent

Tableau 14.23 PROPERTIES OF THE "DAILY COUNTERS" OBJECT (2/2)

Properties	Comments or values
TotalPrivateOutboundCallsNumber	Number of outbound calls made by the agent
TotalWorkTime	Total time the agent is connected and/or spent by the agent processing a service's (inbound or outbound) call

Methods of the "DailyCounters" object

Tableau 14.24 METHODS OF THE "DAILY COUNTERS" OBJECT

Methods	Characteristics	Comments or values
Sub PopupWindow(alngWindowHandle As Long)	**Effect**	Generates a HTML page that shows the properties of the object in form of a pie chart and a table, and displays this HTML page, by default, with the help of a web browser
	Arguments	alngWindowHandle (input): Application window cursor

14.1.13 DESCRIPTION OF THE "EXPOSEDDISPLAYPROPERTY" OBJECT

The "ExposedDisplayProperty" object represents a particular status information.

Properties of the "ExposedDisplayProperty" object

Tableau 14.25 PROPERTIES OF THE "EXPOSEDDISPLAYPROPERTY" OBJECT

Properties	Comments or values
Id	Provides the identifier of the status represented by the **ExposedDisplayProperty** object
Value	Provides the value of the status represented by the **ExposedDisplayProperty** object
Prefix	Provides the value of the status prefix represented by the **ExposedDisplayProperty object.** As a reminder, this prefix is set via the M5000 CC Service Manager application.
Suffix	Provides the value of the status suffix represented by the **ExposedDisplayProperty object.** As a reminder, this suffix is set via the M5000 CC Service Manager application.
Selected	Specifies whether the Service Manager chose to display this status in user applications. The values possible are *True and False.*
DisplayThreshold	Provides the threshold value used for the display alarm. As a reminder, this prefix is set via the M5000 CC Service Manager application.
WarningThreshold	Provides the threshold value used for the warning alarm. As a reminder, this prefix is set via the M5000 CC Service Manager application.
AlarmThreshold	Provides the threshold value used for the activation alarm. As a reminder, this prefix is set via the M5000 CC Service Manager application.
DirectionForThreshold	Provides the direction used for the alarm
AbsRel	Provides the value of the relative property used by the alarm
Beep	Provides the value of the audio alert associated to the alarm
CustomCounterId	Provides the customized counter identifier associated to the alarm
CustomCounterType	Provides the customized counter type associated to the alarm: • ckCustomCounterTypeNone = 0 • ckCustomCounterTypeCurrent = 1 • ckCustomCounterTypeFlow = 2 • ckCustomCounterTypeDayCumulated = 3 • ckCustomCounterTypeHourCumulated = 4
ThresholdType	Provides the current alarm type: • ckDispPropThreshold • ckDispPropThresholdNone = 0 • ckDispPropThresholdDisplay = 1 • ckDispPropThresholdWarning= 2 • ckDispPropThresholdActivationAlarm = 3
ThresholdBeginTime	Provides the time of current alarm start

Examples of use

Let us take an M5000 CC system containing the "Marketing_Service" service. Let us assume the user connected to the M5000 CC Server through the M5000 CC User API is authorized to see the "Marketing_Service" Service statuses, i.e. he is a member of the Service. In addition, all the statuses concerning this Service are available for the M5000 CC User applications.

- We wish to know the identifier of the first status for this Service. The user application can make the following call:

```
Dim Statut_Courant as ExposedDisplayProperty
Dim Collection_Statuts as ExposedDisplayProperties
Dim Identificateur as string

Set Collection_Status = objetSession.ExposedStatusEntities.item
("Marketing_Service","").RetrieveServiceFilterExposedDisplayProperties

Set Statut_Courant = Collection_Status(1)

Identificateur = Statut_Courant.Id
```

- We wish to know the value of the first status for this Service. The user application can make the following call:

```
Dim Statut_Courant as ExposedDisplayProperty
Dim Collection_Statuts as ExposedDisplayProperties
Dim Valeur as string

Set Collection_Status = objetSession.ExposedStatusEntities.item
("Marketing_Service","").RetrieveServiceFilterExposedDisplayProperties

Set Statut_Courant = Collection_Status(1)

Valeur = Statut_Courant.Value
```

- We wish to know the prefix of the first status for this Service. The user application can make the following call:

```
Dim Statut_Courant as ExposedDisplayProperty
Dim Collection_Statuts as ExposedDisplayProperties
Dim Prefixe as string

Set Collection_Status = objetSession.ExposedStatusEntities.item
("Marketing_Service","").RetrieveServiceFilterExposedDisplayProperties

Set Statut_Courant = Collection_Status(1)

Prefixe = Statut_Courant.Prefix
```

- We wish to know the suffix of the first status for this Service. The user application can make the following call:

```
Dim Statut_Courant as ExposedDisplayProperty

Dim Collection_Statuts as ExposedDisplayProperties

Dim Suffixe as string

Set Collection_Status = objetSession.ExposedStatusEntities.item
("Marketing_Service","").RetrieveServiceFilterExposedDisplayProperties

Set Statut_Courant = Collection_Status(1)

Suffixe = Statut_Courant.Suffix
```

Note: As with the "ExposedDisplayProperties object (see § 14.1.14), we can also access an "ExposedDisplayProperty" object using its identifier if it is known:

```
Dim Statut_Courant as ExposedDisplayProperty
Dim Collection_Statuts as ExposedDisplayProperties
Dim Suffixe as string

Set Collection_Status = objetSession.ExposedStatusEntities.item
("Marketing_Service","").RetrieveServiceFilterExposedDisplayProperties

Set Statut_Courant = Collection_Status.item(known_identifier).
```

14.1.14 DESCRIPTION OF THE "EXPOSEDDISPLAYPROPERTIES" OBJECT

The "ExposedDisplayProperties" object is a collection of "ExposedDisplayProperty" objects. This object enables the application using the M5000 CC User API to view all the real-time statuses associated with an "ExposedStatusEntity" class (see § 14.1.15). Each "ExposedDisplayProperty" object (see § 14.1.13) contains information for a particular status.

Properties of the "ExposedDisplayProperties" object

Tableau 14.26 PROPERTIES OF THE "EXPOSEDDISPLAYPROPERTIES" OBJECT

Methods	Characteristics	Comments or values
Count		Provides the *application* using the User M5000 CC with access to the total number of statuses present for an ***ExposedStatusEntity.***
Item (ByVal astrId As string) As ExposedDisplayProperty	**Effect**	Provides the application using the User API with access to an ExposedDisplayProperty object from the ExposedDisplayProperties collection.
	Arguments	identifier of the ExposedDisplayProperty object (see list of identifiers below)
	Returns	Requested ExposedDisplayProperty object or Nothing if the ExposedDisplayProperty don't exist.
CustomCounterItem(ByVal astrCustomCounterId As String, _ ByVal astrCustomCounterType As CookiesUserAPI.ckCustomCounterType) As ExposedDisplayProperty	**Effect**	Provides the application using the User API with access to an ExposedDisplayProperty object from the ExposedDisplayProperties collection. The ExposedDisplayProperty object represents a status associated with a variable of the CustomCounter type.
	Arguments	• astrCustomCounterId: identifier of the CustomCounter for which the status value is required. • astrCustomCounterType: type of status associated woth the variable of the CustomCounter type (see list of statuses associated with a Custom Counter variable Tableau 14.30)
	Returns	Requested ExposedDisplayProperty object or Nothing if the ExposedDisplayProperty don't exist.
NewEnum		Enables the application to use the "For… Each" syntax in the **ExposedDisplayProperties** object collection.

This "ExposedDisplayProperties" object will contain only statuses for which the Service Manager specified display in user type applications.

Description of status identifiers for the "ExposedDisplayProperties" object

1 Statuses corresponding to both inbound and outbound Services

Tableau 14.27 STATUSES CORRESPONDING TO BOTH INBOUND AND OUTBOUND SERVICES (1/2)

services	argument	DESCRIPTION
Inbound	**1**	Status calculation time.
	2	Number of calls in the IVR status
	3	Number of calls in the Waiting status
	4	Number of calls in the Reserved status
	5	Number of calls on DCP
	6	Number of calls On Hold
	7	Number of PCP calls
	8	Total number of calls.
	9	Total calls in the IVR, Wait and Reserved status.
	10	Total calls on the DCP, On-hold and PCP status.
	11	Number of extensions in the Idle status
	12	Number of calls in the Reserved status
	13	Number of calls in DCP status
	14	Number of extensions in the On Hold status
	15	Number of calls in the PRIVATE IN status.
	16	Number of calls in the PRIVATE OUT status.
	17	Total number of calls.
	18	Number of agents in the Ready status
	19	Number of agents in the Not Ready status.
	20	Number of agents in the PCP status.
	21	Total number of calls.
	22	Number of calls to transfer.
	23	Number of calls to not transfer.
	24	Longest waiting time before abort.
	25	Longest waiting time before answer.
	26	Longest waiting time still waiting.
	27	Average wait time before being answered.
	28	Average before abandon.
	29	Percentage of abandons.
	30	Percentage of calls transferred before quality of service threshold.
	31	Percentage of calls transferred before quality of service threshold.
	32	Quality of Service.

Tableau 14.27 STATUSES CORRESPONDING TO BOTH INBOUND AND OUTBOUND SERVICES (2/2)

services	argument	DESCRIPTION
Outbound	**33**	Number of calls in the dial list.
	34	Number of not accessed calls in dial list.
	35	Percentage of not accessed calls in dial list
	36	Number of terminated calls in dial list
	37	Percentage of terminated calls in dial list
	38	Number of pending calls in dial list
	39	Percentage of pending calls in dial list
	40	Number of due calls in dial list
	41	Percentage of due calls in dial list
	42	Number of succeeded calls in dial list
	43	Percentage of succeeded calls in dial list
	44	Number of busy calls in dial list
	45	Percentage of busy calls in dial list
	46	Number of 'No answer' calls in dial list
	47	Percentage of 'No answer' calls in dial list
	48	Number of 'Connect KO' calls in dial list
	49	Percentage of 'Connect KO' calls in dial list
	50	Number of 'Bad number' calls in dial list
	51	Percentage of 'Bad number' calls in dial list
	52	Number of 'Network error' calls in dial list
	53	Percentage of 'Network error' calls in dial list
	54	Number of 'Deleted' calls in dial list
	55	Percentage of 'Deleted' calls in dial list
	56	Number of 'Timeout' calls in dial list
	57	Percentage of 'Timeout' calls in dial list
	58	Number of 'No Call Server' calls in dial list
	59	Percentage of 'No Call Server' calls in dial list

0 Status matching the activity codes

Tableau 14.28 STATUS MATCHING THE ACTIVITY CODES

argument	DESCRIPTION
60	Number of Not Ready agents with a undefined activity code.
61	Number of Not Ready agents with an activity code of 1.
62	Number of Not Ready agents with an activity code of 2.
63	Number of Not Ready agents with an activity code of 3.
64	Number of Not Ready agents with an activity code of 4.
65	Number of Not Ready agents with an activity code of 5.
66	Number of PCP agents with a undefined activity code.
67	Number of PCP agents with an activity code of 1.
68	Number of PCP agents with an activity code of 2.
69	Number of PCP agents with an activity code of 3.
70	Number of PCP agents with an activity code of 4.
71	Number of PCP agents with an activity code of 5.
72	Number of Break agents.

0 Statuses matching e-mails and web sessions

Tableau 14.29 STATUSES MATCHING E-MAILS AND WEB SESSIONS

argument	DESCRIPTION
73	Number of e-mails in Server status
74	Number of e-mails in Wait status
75	Number of e-mails in Reserved status.
76	Number of e-mails in User status.
77	Total number of e-mails in process.
78	Longest e-mail processing duration
79	Average e-mail processing duration
80	Longest current e-mail processing duration.
81	Percentage of e-mails before threshold.
82	Percentage of e-mails after threshold.
83	E-mail Quality of Service threshold
84	Number of associated web sessions.
85	Number of non associated web sessions.
86	Total number of web sessions.

1 Other statuses

Tableau 14.30 OTHER STATUSES

argument	DESCRIPTION
87	Number of agents ready and whose extensions are free.
88	Number of Not Ready agents with an activity code of 6.
89	Number of Not Ready agents with an activity code of 7.
90	Number of Not Ready agents with an activity code of 8.
91	Number of Not Ready agents with an activity code of 9.
92	Number of Not Ready agents with an activity code of 10.

0 Types of statuses associated with a CustomCounter variable

Tableau 14.31 FOUR TYPES OF STATUSES ARE ASSOCIATED WITH EACH "CUSTOMCOUNTER" VARIABLE

type	Variable	DESCRIPTION
1	**UsrAPI_CustomCounterTypeCurrent**	Number of calls respecting criterion.
2	**UsrAPI_CustomCounterTypeFlow**	Number of changes respecting criterion
3	**UsrAPI_CustomCounterTypeDayCumulated**	Number of calls respecting the criterion on the day.
4	**UsrAPI_CustomCounterTypeHourCumulated**	Number of calls respecting the criterion on the time.

0 Examples of use

Let us take an M5000 CC system containing the "Marketing_Service" service. We rpesume the user connected to the M5000 CC Server through the M5000 CC User API is authorized to see the "Marketing_Service" Service statuses, i.e. he is a member of the Service.

- We wish to know the number of statuses available for this Service. The user application can make the following call:

  Nombre_Status =
  objetSession.ExposedStatusEntities.item
  ("Marketing_Service","").RetrieveServiceFilterExposedDisplayProperties.count

- We wish to know the value for status 4 (number of calls in the Reserved Status). This value must be selected beforehand as available for the M5000 CC User applications in the display properties of the Service Manager. The user application can make the following call:

  Dim Collection_Statuts as **ExposedDisplayProperties**

  Set Collection_Statuts =
  objetSession.ExposedStatusEntities.item
  ("Marketing_Service","").RetrieveServiceFilterExposedDisplayProperties

  Nombre_Appel_Reserve = Collection_Statuts.item(4)

- Be the variable of the Custom Counter CritereA type, we wish to know the value of the call number status meeting the criterion CritereA over the day.

  Dim Collection_Statuts as **ExposedDisplayProperties**

  Set Collection_Statuts =
  objetSession.ExposedStatusEntities.item
  ("Marketing_Service","").RetrieveServiceFilterExposedDisplayProperties

  Nombre_Appel_CriterA_Journ = Collection_Statuts .CustomCounterItem("CritereA",3)

  or still

  Nombre_Appel_CriterA_Journ = Collection_Statuts .CustomCounterItem("CritereA", UsrAPI_CustomCounterTypeDayCumulated)

- To browse all the elements in the ExposedDisplayProperties object a "For each" loop. The user application can make the following call:

  Dim Statut_Courant as ExposedDisplayProperty
  Dim Collection_Statuts as **ExposedDisplayProperties**

  Set Collection_Statuts = *objetSession.*ExposedStatusEntities.item
  ("Marketing_Service","").RetrieveServiceFilterExposedDisplayProperties

  For each Statut_Courant in Collection_Statuts

  Next

14.1.15 DESCRIPTION OF THE "EXPOSEDSTATUSENTITY" OBJECT

An "ExposedStatusEntity" object is created for each Service and filter for which the agent connected has access rights. Each "ExposedStatusEntity" object provides access to an "ExposedDisplayProperty" collection containing the real-time statuses for the Service and matching filter.

The identifier and current value of the status are the two properties mainly exposed. In addition, the statuses of a Service (fitlered or not) which can be viewed by the M5000 CC User applications expose a few additional properties: the client application also has access to the prefix and suffix for each of these statuses, such as defined on the level of the Service manager.

Example:

Be a system in which three Services are defined (Technical support, Administrations, and Purchasing/Sales). In the "Technical Support" service, two filters are defined, FrenchCalls and EnglishCalls. The agent logged on is a member of the Technical support Service and Purchasing/Sales Service, and is provided only with access to the information filtered by FrenchCalls.

Therefore, the "ExposedStatusEntities" collection will include three objects: l'"ExposedStatusEntity" for the real-time statuses of the "Technical support" service, the one for real-time statuses of the Technical support Service filtered by FrenchCalls, and finally an "ExposedStatusEntity" object related with the Purchasing/Sales Service.

Tableau 14.32 METHODS OF THE "EXPOSEDSTATUSENTITY" OBJECT

Methods	Characteristics	Comments or values
RetrieveServiceFilterExposedDisplayProperties () As ExposedDisplayProperties function	**Effect**	It is used by the external application to retrieve the real-time statuses of a Service (if required filtered if the ExposedStatusEntity item is related with a filter).
	Returns	A collection of ExposedDisplayProperties (see § 14.1.14) containing all the display properties related with the Service and the filter for the "Current ExposedStatusEntity" object

14.1.16 DESCRIPTION OF THE "EXPOSEDSTATUSENTITIES" OBJECT

The "ExposedStatusEntities" class is a collection of "ExposedStatusEntity" objects (see § 14.1.15). This collection enables the external application using the M5000 CC User API to know:

- all Services (local and remote) to which the agent connected is assigned. Therefore, the agent is provided with access to the real-time statuses of these Services.
- all filters (related with the Services the agent is assigned to) the agent is authorized to use, and for which the latter has access to the statuses filtered by each of these filters.

Properties of the "ExposedStatusEntities" object

Tableau 14.33 PROPERTIES OF THE "EXPOSEDSTATUSENTITIES" OBJECT

Properties	Characteristics	Comments or values
Count		Provides the external application with access to the total number of elements the agent has authorized access to. Count est de type Long.
Item (ByVal ServerId as String, ByVal ServiceId as String, ByVal FilterId as String) As ExposedStatusEntity	**Effect**	Enables the application to access an object ExposedStatusEntity in the collection ExposedStatusEntities.
	Arguments	Identifier of the ExposedStatusEntity object sought. It is composed of three character strings: • *ServerId*: Identifier of the remote machine when the Service is remote, otherwise, an empty string must be given • ServiceId: Service identifier • FilterId: The filter identifier if filtered information is sought, otherwise, an empty string must be given
	Returns	The ExposedStatusEntity object requested or Nothing if the ExposedStatusEntity object does not exist in the ExposedStatusEntities collection.
NewEnum		Enables the external application to use the “For… Each” syntax in the ExposedStatusEntities collection.

Properties of the "ExposedStatusEntities" object

Tableau 14.34 PROPERTIES OF THE "EXPOSEDSTATUSENTITIES" OBJECT

Methods	Characteristics	Comments or values
Function RetrieveAllService FilterWithGrantedPermissionsIds () As Ids	**Effect**	Enables the external application to know all the Services to which the agent is assigned. Therefore, the agent is provided with access to the real-time statuses of these Services. Also, thsis method also provides the list of filters for which the agent has rights of use.
	Returns	A collection of Ids containing the identifiers (character string) of the Services (with the name of the remote Server in the case of a remote Service) and the identifiers of the filters used by the agent to access real-time statuses.

14.1.17 DESCRIPTION OF THE "ID" OBJECT

In the context of real-time statuses, each Id object returned using the **RetrieveAllServiceFilterWithGrantedPermissionsIds** method from **ExposedStatusEntities** corresponds to the identifier of a Service or a Service-Filter couple. If the Service concerned is remote, the name of the remote machine is also indicated.

Example

The *Marketing* Service runs locally and has two filters: the FrenchCalls filter and the EnglishCalls filter. The *Administration* Service is a remote Service with a server running on the *PC_Administration* machine. The agent conencted is a member of thes two Services, but is authorized only for the FrenchCalls fitler.

If the **RetrieveAllServiceFilterWithGrantedPermissionsIds** method is called, two Id are returned:

- Marketing_AppelsAnglais,
- {PC_Administration}_Administration.

14.1.18 DESCRIPTION OF THE "IDS" OBJECT

Tableau 14.35 PROPERTIES OF THE "IDS" OBJECT

Properties	Characteristics	Comments or values
Count		Provides the external application with access to the total number of identifiers contained in the collection. Count est de type Long.
Item (ByVal vntIndexKey As Variant) As Id	**Effect**	Enables the application to access an object Id in the collection Ids.
	Arguments	Identifier of the Id object sought.
	Returns	The Id object requested or Nothing if the Id object does not exist in the Ids collection.
NewEnum		Enables the external application to use the “For… Each” syntax in the Ids collection.

14.1.19 DESCRIPTION OF THE "LANGUAGE" OBJECT

All the properties of this object are read-only.

Tableau 14.36 PROPERTIES OF THE "LANGUAGE" OBJECT

Properties	Comments or values
Id	Language Id
Level	Language level (interval 0 to 99)

14.1.20 DESCRIPTION OF THE "LANGUAGES" OBJECT

The "Languages" object is a collection of "Language" objects (see § 14.1.19). This collection will always contain a single item, i.e. the language used by the script.

Note: The term "client application" must be understood as the application using the M5000 CC User API.

Properties of the "Languages" object

Tableau 14.37 PROPERTIES OF THE "LANGUAGES" OBJECT

Properties	Comments or values
Count	Total number of objects of the "Language" type contained in the collection
NewEnum	Enables the client application to use the syntax "For...Each" in the collection

Methods of the "Languages" object

Tableau 14.38 METHODS OF THE "LANGUAGES" OBJECT

Methods	Characteristics	Comments or values
Function Item(Index As Variant) As CookiesUserAPI.Language	**Effect**	Provides the client application with access to a Language object in the collection
	Argument	• Index (input): identifier of the object in the collection
	Returns	The Language object requested or Nothing if the object does not exist in the collection

14.1.21 DESCRIPTION OF THE "POOLELEMENT" OBJECT

The PoolElement object represents an e-mail presented to an agent.

Tableau 14.39 PROPERTIES OF THE "POOLELEMENT" OBJECT

Properties	Comments or values
Id	identifier of the PoolElement object. Id As String.
EmailHandlingBeginTime	Time of the beginning of the e-mail processing. EmailHandlingBeginTime est du type Date.
SenderAddress	The Sender address of the PoolElement object. Sender As String
ServiceId	Name of the Service associated with this PoolElement object. ServiceId As String.
AssociatedVariables	Variables associated with the PoolElement object. AssociatedVariables (see § 14.1.9) is a collection of AssociatedVariable objects (see § 14.1.10)

14.1.22 DESCRIPTION OF THE "POOLELEMENT" OBJECT

The "PoolElements" class is a collection of "PoolElement objects (seer § 14.1.21). This collection represents the part of the pool of e-mails presented to an agent. The application can pick a PoolElement object from the pool by calling the AskElement method.

Note: application has to be understood as the application using UserCookiesAPI.

Properties of the "PoolElements" object

Tableau 14.40 PROPERTIES OF THE "POOLELEMENTS" OBJECT

Properties	Characteristics	Comments or values
Count		Enables the application to access the total number of Elements that are in the pool of elements presented to the agent. Count As Long.
Item (ByVal PoolElement As Variant) As PoolElement	**Effect**	Enable the application to access an object PoolElement in the collection PoolElements
	Arguments	PoolElement (input). PoolElement identifier or index in the collection
	Returns	Requested PoolElement object or Nothing if the PoolElement don't exist.
NewEnum		Enables the application to use the "For… Each" syntax in the PoolElements collection.

Methods of the "PoolElements" object

Tableau 14.41 METHODS OF THE "POOLELEMENTS" OBJECT

Properties	Characteristics	Comments or values
Function AskElement (ByVal PoolElementId As String, ByRef AgoraEmail As AgoraEmail) As Boolean	**Effect**	Enable the application to ask for an Element in the presented pool in order to treat it. If the Server gives the right to treat the Element (returned Boolean equal to True) an AgoraEmail object is created and is returned to the application. To confirm the fact that the application treats the element, the **SetInitiateResult** method must be called within 10 seconds.
	Arguments	• PoolElementId (input). Identifier of the element to be picked. • AgoraEmail (output) (see section 14.1.7). If the Server authorizes processing of the element, an AgoraEmail object is created and returned to the application. Nothing is returned if the Server refuses processintg the e-mail.
	Returns	A Boolean. If True the application has the right to treat the corresponding e-mail. The M5000 CC User API must call SetInitiateResult within 10seconds.

Events in the "PoolElements" object

Tableau 14.42 EVENTS OF THE "POOLELEMENTS" OBJECT

event	Characteristics	Comments or values
NewElementAppearedInPool (ByVal PoolElementId As String)	**Effect**	Warns the application when a new e-mail appears in the Pool.
	Arguments	PoolElementId. Identifier of the new Element
ElementDisappearedFromPool (ByVal PoolElementId As String)	**Effect**	Warns the application when an e-mail disappears from the Pool.
	Arguments	PoolElementId As String. Identifier of the disappeared Element.

14.1.23 DESCRIPTION OF THE "PREFERENCE" OBJECT

All the properties of this object are read-only.

Tableau 14.43 PROPERTIES OF THE "PREFERENCE" OBJECT

Properties	Comments or values
Id	Skill identifier
Order	Preference sequence (strictly positive integer)
SkillLanguageType	Type of skill: • usrAPI_Skill = 0: particular skill • usrAPI_Language = 1: language skill

14.1.24 DESCRIPTION OF THE "PREFERENCES" OBJECT

The "Preferences" object is a collection of "Preference" objects (see § 14.1.23). This collection contains all the skill preferential sequences within the framework of the transfer of a call to a member of the Service.

Note: The "client application" term means the application using the M5000 CC User API.

Properties of the "Preferences" object

Tableau 14.44 PROPERTIES OF THE "PREFERENCES" OBJECT

Properties	Comments or values
Count	Total number of objects of the "Preference" type contained in the collection
NewEnum	Enables the client application to use the syntax "For...Each" in the collection

Methods of the "Preferences" object

Tableau 14.45 METHODS OF THE "PREFERENCES" OBJECT

Methods	Characteristics	Comments or values
Function Item(Index As Variant) As CookiesUserAPI.Preference	**Effect**	Provides the client application with access to a Preference object in the collection
	Argument	Index (input): identifier of the object in the collection
	Returns	the Preference object requested or Nothing if the object does not exist in the collection

14.1.25 DESCRIPTION OF THE "SKILL" OBJECT

All the properties of this object are read-only.

Tableau 14.46 PROPERTIES OF THE "SKILL" OBJECT

Properties	Comments or values
Id	Identifier of the particular skill.
Level	Level of skill (interval 0 to 99).

14.1.26 DESCRIPTION OF THE "SKILLS" OBJECT

The "Skills" object is a collection of "Skill" objects (see Section 14.1.25). This collection contains all the skill preferential sequences within the framework of the transfer of a call to a member of the Service.

Note: The "client application" term means the application using the M5000 CC User API.

Properties of the "Skills" object

Tableau 14.47 PROPERTIES OF THE "SKILLS" OBJECT

Properties	Comments or values
Count	Total number of objects of the "Skill" type contained in the collection
NewEnum	Enables the client application to use the syntax "For...Each" in the collection

Methods of the "Skills" object

Tableau 14.48 METHODS OF THE "SKILLS" OBJECT

Methods	Characteristics	Comments or values
Function Item(Index As Variant) As CookiesUserAPI.Skill	**Effect**	Provides the client application with access to a Skill object in the collection
	Argument	• *Index* (input): identifier of the object in the collection
	Returns	The Skill object requested or Nothing if the object does not exist in the collection

14.1.27 DESCRIPTION OF THE "TEAM" OBJECT

All the properties of this object are read-only.

Tableau 14.49 PROPERTIES OF THE "TEAM" OBJECT

Properties	Comments or values
Id	Team identifier

14.1.28 DESCRIPTION OF THE "TEAMS" OBJECT

The "Teams" object is a collection of "Team" objects (see § 14.1.27). This collection contains all the team preferential sequences within the framework of the transfer of a call to a member of the Service.

Note: The "client application" term means the application using the M5000 CC User API.

Properties of the "Teams" object

Tableau 14.50 PROPERTIES OF THE "TEAMS" OBJECT

Properties	Comments or values
Count	Total number of objects of the "Team" type contained in the collection
NewEnum	Enables the client application to use the syntax "For...Each" in the collection

Methods of the "Teams" object

Tableau 14.51 METHODS OF THE "TEAMS" OBJECT

Methods	Characteristics	Comments or values
Function Item(Index As Variant) As CookiesUserAPI.Team	**Effect**	Provides the client application with access to a Team object in the collection
	Argument	• *Index* (input): identifier of the object in the collection
	Returns	The Team object requested or Nothing if the object does not exist in the collection

14.1.29 DESCRIPTION OF THE "USER" OBJECT

Properties of the "User" object

Tableau 14.52 PROPERTIES OF THE "USER" OBJECT

Properties	Characteristics	Comments or values
ActivityCodeState	**Returns**	The activity code of the connected user (Long type)
ActivityState	**Returns**	Returns the connected user as a ckActivity
LoginState	**Returns**	Returns the logged status of the connected user as a ckLoggedStatus
PhoneId	**Returns**	Returns the Id of the phone (where the user is connected) as a string
AssociatedExtensionIds	**Returns**	The identifiers of extensions associated with the telephone (such as AssociateExtensionIds)
UserId	**Returns**	Returns the Id of the connected user as a string

Methods of the "User" object

Tableau 14.53 METHODS OF THE "USER" OBJECT (1/2)

Methods	Characteristics	Comments or values
Function GetProperty(ByVal PropertyType As usr_PropertyType) As Variant	**Effect**	Gets a property relative to the User object.
	Arguments	PropertyType (input): the argument you specify must be one of the following values: • usr_UserId = 1: returns the Id of the connected user as a string • usr_PhoneId = 2: returns the Id of the phone (where the user is connected) as a string • usr_LoginState = 3: returns the logged status of the connected user as a ckLoggedStatus (see previous definition) • usr_ActivityState = 4: returns the activity of the connected user as a ckActivity (see previous definition) • usr_ActivityCodeState = 5: returns the activity code of the connected user as a long • usr_AssociatedExtensionIds = 6: returns the identifiers of extensions associated with the telephone (such as AssociateExtensionIds)
	Returns	The value of the property.
Sub SetPhoneLoggedStatus(ByVal LoggedStatus As ckLoggedStatus)	**Effect**	This function is used to change the logged status of the connected user.
	Arguments	LoggedStatus (input): the asked new status. It's one of the following values: • ckStatusLOGIN = 0: Login the agent • ckStatusLOGOUT = 1: Logout the agent
	Required conditions	Required conditions: Application has to be connected
	Consequence	None. This sub does NOT guarantee that the status has changed. The UserLoginStateChanged event is the only guarantee that the status has changed.
Sub SetUserActivity(ByVal ExtensionId As String, ByVal Activity As ckActivity, Optional ByVal ActivityCode As Long = 0)	**Effect**	This function is used to change the activity and/or the activity code of the connected user. Arguments: 1 **ExtensionId** (input): the extension of the call concerned by the activity change (used only to set the user's activity in PCP, otherwise an empty string is enough). 2 **Activity** (input): it must be one of the following values: - ckActivityREADY = 0: ready - ckActivityNOTREADY = 1: not ready - ckActivityPCP = 2: Post-call processing 3 **ActivityCode** (optional input): the new activity code (the activity must be PCP or not ready to use the activity code).

Tableau 14.53 METHODS OF THE "USER" OBJECT (2/2)

Methods	Characteristics	Comments or values
Sub SetSkillLevelProperties (ByVal SkillId As String, ByVal level As ckLevel, ByVal ServiceId As String, ByVal ServiceVersion As Integer)	**Effect**	This function is used to change the skill of the connected user.
	Arguments	• *SkillId* (input): identifier of the particular skill. • *Index* (input): indicates the new level, between 0 and 99. The two last arguments (input) are some properties of the Service (ServiceId, ServiceVersion) which the connected user belongs.
Function GetDailyCounters () As DailyCounters)	**Effect**	Returns a "DailyCounters" object representing an overview of user statistics since the beginning of the day.
	Arguments	A "DailyCounters" class object (see § 14.1.12).

Events of the "User" object

Tableau 14.54 EVENTS OF THE "USER" OBJECT

event	Characteristics	Comments or values
Event UserActivityCodeStateChange(ByVal ActivityCode As Long)	**Effect**	This event is raised when the activity code of the connected user changes.
	Arguments	ActivityCode: the argument specifies the new activity code; it's a long one.
UserActivityStateChange(ByVal Activity As ckActivity)	**Effect**	This event is raised when the activity of the connected user changes.
	Arguments	Activity: the argument specifies the new activity. It's one of the following values: • ckActivityREADY = 0: Ready • ckActivityNOTREADY = 1: Not Ready • ckActivityPCP = 2: PCP (Post Call Processing) • ckActivityBREAK = 3: Break (after having handled a call)
UserLoginStateChanged(ByVal LoggedStatus As ckLoggedStatus)	**Effect**	This event is raised when the logged status of the connected user changes.
	Arguments	LoggedStatus: the argument specifies the new logged status. It's one of the following values: • ckStatusLOGIN = 0: the user logged in • ckStatusLOGOUT = 1: user logged out
DailyStatusesAvailability(Available As Boolean	**Effect**	Indicates a change in the right to access the day statistics This is used to update the graphical interface (activating or deactivating a menu or a button, for example).
	Arguments	Available: stands for True if access is allowed, False if access is denied

14.1.30 DESCRIPTION OF THE "ASSOCIATEDEXTENSIONIDS" OBJECT

The "AssociatedExtensionIds" object is a collection of "AssociatedExtensionIds" objects. This collection presents the list of extensions associated with the telephone of the connected agent.

Note: The "client application" term means the application using the M5000 CC User API.

Properties of the "AssociatedExtensionIds" object

Tableau 14.55 PROPERTIES OF THE "TEAMS" OBJECT

Properties	Comments or values
Count	Total number of AssociatedExtensionId objects contained in the collection
NewEnum	Enables the client application to use the syntax "For...Each" in the collection

Methods of the "AssociatedExtensionIds" object

Tableau 14.56 METHODS OF THE "TEAMS" OBJECT

Methods	Characteristics	Comments or values
Function Item(Index As Variant) As CookiesUserAPI.Team	**Effect**	Provides the client application with access to a Team object in the collection
	Argument	• *Index* (input): identifier of the object in the collection
	Returns	The requested AssociatedExtensionId object or Nothing if the object does not exist in the collection

Events in the "AssociatedExtensionIds" object

Tableau 14.57 METHODS OF THE "TEAMS" OBJECT

Methods	Characteristics	Comments or values
MonitoringChange(ByVal astrExtensionId As String, ByVal ablnMonitored As Boolean)	**Effect**	Indicates to the client application a change in the supervision status of an extension.
	Argument	• astrExtensionId (input): identifier of the extension in the collection • ablnMonitored (input): the extension's new supervision status
	Note:	This event is also systematically generated for each telephone extension just after the client application has connected to the server, in order to give the initial status of this supervision.

14.1.31 DESCRIPTION OF THE "ASSOCIATEDEXTENSIONID" OBJECT

All the properties of this object are read-only.

Properties of the "AssociatedExtensionId" object

Tableau 14.58 PROPERTIES OF THE "TEAMS" OBJECT

Properties	Comments or values
ExtensionId	Extension identifier.
ExtensionKey	This property contains the key associated with the extension; it is created from the ExtensionId property preceded by the character string: "KEY".
ExtensionType	This property is used to know whether the extension in question is a personal or professional extension: • 0 = personal extension • 1 = professional extension
Monitored	This property indicates whether the extension is properly supervised on the telephone (that is by the CTI link between the M5000 CC Server and the PBX).

14.2 APPENDIX TO THE DESCRIPTION OF THE OBJECT MODELS IN THE OUTBOUND CALLS LIST API

14.2.1 OVERVIEW OF OBJECT MODELS

This table presents the objects (properties/methods/events) available when the **Outbound call list API** interface is connected:

Note: Do not confuse objects with similar names except for an "s" (e.g. Service and Services).

Tableau 14.59 OVERVIEW OF ALL THE OBJECT MODELS IN THE OUTBOUND CALL LIST API

Objects	Properties	Methods	Events
DiallistAPI (see § 14.2.2)	• ConnectionStatus (Disconnected/Connected) • Services	• Connect • Disconnect • RefreshServicesCollection	• NoCallForUser
Services (see § 14.2.3)	• Item • Count • NewEnum	none	None
Department (see § 14.2.4)	• LogStatus (Logged In, Logged Out) • Service"Beta"Status (Opened, Closing, Closed) • Service"Production"Status (Opened, Closing, Closed) • "Beta"DialListPath • "Production"DialListPath • ServiceId • DialList	• Login • Logout • OpenService"Beta" • OpenService"Production" • CloseService"Beta" • CloseService"Production"	• ServiceStatus"Beta"Change • ServiceStatus"Production"Change
Diallist (see § 14.2.5)	• "Beta"Ids • "Production"Ids	• AddCallIn"Beta"DialList • AddCallIn"Production"DialList • DeleteCallIn"Beta"DialList • DeleteCallIn"Production"DialList • Read"Beta"Call • Read"Production"Call	• "Beta"CallPerformed • "Production"CallPerformed
Ids (see § 14.2.6)	• Item • Count	• Refresh	None

14.2.2 DESCRIPTION OF THE "DIALLISTAPI" OBJECT

The "DiallistAPI" object is the input point for all the other objects in the APII. It is created only once.

Properties of the "DiallistAPI" object

Tableau 14.60 PROPERTIES OF THE "DIALLISTAPI" OBJECT

Properties	Characteristics	Comments or values
Property Get ConnectionStatus() As String	**Effect**	Returns the logged status
	Arguments	None
	Returns	If the client application is not connected to the Server, ConnectionStatus is set to "Disconnected" and to "Connected " otherwise
	Errors returned	No errors expected
Property Get Services() As Services	**Effect**	Returns a reference to the single Services object (see § 14.2.3) in the API
	Arguments	None
	Returns	A reference to the Services collection
	Errors returned	No errors expected

Methods of the "DiallistAPI" object

Tableau 14.61 METHODS OF THE "DIALLISTAPI" OBJECT

Methods	Characteristics	Comments or values
Sub connect(ConfigurationFilePath As String, Optional ByVal UDPPort As Long = 0, Optional ByVal IPAddress As String = '', Optional ByVal HostName As String = '')	**Effect**	First method used to connect the client application to the M5000 CC Server
	Arguments	• ConfigurationFilePath (input): specify the path to the Version.cfg file • UDPPort (input): optionnel • IPAddress (input): optionnel • HostName (input): optionnel
	Returns	Nothing
	Errors returned	• -1: The FIle Structure specified is not that used by the Server. You are not logged on. • -2: Cannot find the version.cfg file. You are not logged on. • -3: You are already logged on. • -4: The database specified is not loaded by the Server. You are not logged on. • -5: Too many Service Managers onnected. You are not logged on. • -6: A DiallistAPI object is already connected to the Server. You are not logged on.
Sub Disconnect()	**Effect**	• Last method used to disconnect the client application from server. Must be called before deleting the object. Once this method is called, the object can no more be used.
	Arguments	• None
	Returns	• Nothing
	Errors returned	• None
Sub RefreshServicesCollection()	**Effect**	Refreshes Outbound services in the API collection. In order to do this, this method checks the existence of all Outbound services defined in the M5000 CC Server in the local collection of Services
	Arguments	None
	Returns	Nothing
	Errors returned	• -170 : Impossible to refresh the collection, you are not connected to the Server.

Events of the "DiallistAPI" object

Tableau 14.62 EVENTS OF THE "DIALLISTAPI" OBJECT

Events	Characteristics	Comments or values
Event NoCallFor User(AgentId As String, Service Structure As String)	**Effect**	This event is returned when no call is found for the agent. "No call" means that no call was found for the specific agent in the outbound calls lists in "Beta" and in "Production" for all the Services the agent is assigned to.
	Arguments	• AgentId (input) : Identifier of the agent for whom no call was found • ServicesStructure (output): this character string contains the following variables: - ServiceIds : List of Outbound services in "Beta" or in "Production" to which the agent is assigned. - "Production"Team: team to which the agent belongs (for the version in "Production") - "Production"Languages: languages defined in the Service and skill level of the agent in these languages ("Production" version) - "Production"Skills: skills defined in the Service and skill level of the agent in these skills ("Production" version) - "Beta"Team: team to which the agent belongs (for the version in "Beta") - "Beta"Languages: languages defined in the Service and skill level of the agent in these languages ("Beta" version) - "Beta"Skills: skills defined in the Service and skill level of the agent in these skills ("Beta" version) ServicesStructure is coded as follows: [a][ServiceId1][b]["Production"Team1]["Production"Team2][…][c][" Production"Language1]["Production"Language2][…][d]["Production"Skill1]["Production"Skill2][…][e]["Beta"Team1]["Beta"Team2][…][f]["Beta"Language1]["Beta"Language2][…][g]["Beta"Skill1]["Beta"Skill2][…] [ServiceId2][h]…. Where [a] is the number of ServiceIds code in the character string, [b] corresponds to the number of "Production"Teams associated with the , etc… When the variables for the first Service have all been provided, we move on to the next Service until the [a] Services are coded. A,b,c,d,… are equal to zero if the sub-part of the string contains no value. If the agent is assigned to a Service neither in "Beta" nor "Production", the corresponding part of the string is [0][0][0]. If the Service is neither in "Beta" nor in "Production", [0][0][0] is also returned.
	Returns	Nothing
	Errors returned	none

14.2.3 DESCRIPTION OF THE "SERVICES" OBJECT

The "Services" object is a collection of all Outbound services of M5000 CC. It is created when creating the API, but is entered only once conencted to theServer.

Properties of the "Services" object

Tableau 14.63 PROPERTIES OF THE "SERVICES" OBJECT

Properties	Characteristics	Comments or values
Property Get Count() As Long	**Effect**	Returns the number of elements contained in the Services collection
	Arguments	None
	Returns	The number of items contained in the Services collection
	Errors returned	No errors expected
Property Get Item(ByVal ServiceId As String) As Service	**Effect**	Selects an item in the Services collection
	Arguments	ServiceId (input) : identifier of the Service selected
	Returns	The item if in the collection, otherwise nothing
	Errors returned	No errors expected
Property Get NewEnum()		Enables the application to use the "For... Each" syntax in the Services collection.

14.2.4 DESCRIPTION OF THE "SERVICE" OBJECT

Properties of the "Service" object

Tableau 14.64 PROPERTIES OF THE "SERVICE" OBJECT (1/2)

Properties	Characteristics	Comments or values
Property Get "Beta"DiallistPath() As String	**Effect**	Returns the path of the list of outbound calls in "Beta"
	Arguments	None
	Returns	Returns the path of the list of outbound calls in "Beta"
	Errors returned	No error expected
Property Get Diallist() As Diallist	**Effect**	Returns the DialList object (see § 14.2.5) used to manage the list of outbound calls
	Arguments	None
	Returns	Reference to the Diallist object
	Errors returned	No error expected
Property Get LogStatus() As String	**Effect**	Return the login status
	Arguments	None
	Returns	If the client application is not connected to the Service, LogStatus shifts to "logged out" and "logged in" otherwise
	Errors returned	No error expected

Tableau 14.64 PROPERTIES OF THE "SERVICE" OBJECT (2/2)

Properties	Characteristics	Comments or values
Property Get "Production"DiallistPath() As String	**Effect**	Returns the path of the list of outbound calls in "Production"
	Arguments	None
	Returns	Returns the path of the list of outbound calls in "Production"
	Errors returned	No error expected
Property Get ServiceId() As String	**Effect**	Returns the ServiceId
	Arguments	None
	Returns	ServiceId (Service identifier)
	Errors returned	no error expected
Property Get ServiceStatus"Beta"() As String	**Effect**	Returns the status of the Service's "Beta" version
	Arguments	None
	Returns	"opened", "closing", "closed", "undefined". The last status is returned, only if you are not connected to the Service.
	Errors returned	• -151 : The Service is neither in Beta nor in Production. • -152 : The Service is in Production, not in Beta.
Property Get ServiceStatus"Production"() As String	**Effect**	Returns the status of the Service's "Production" version
	Arguments	None
	Returns	"opened", "closing", "closed", "undefined". The last status is returned, only if you are not connected to the Service.
	Errors returned	• -181 : The Service is neither in Beta nor in Production. • -182 : The Service is in Production, not in Beta.

Methods of the "Service" object

Tableau 14.65 METHODS OF THE "SERVICE" OBJECT (1/2)

Methods	Characteristics	Comments or values
Sub Login(UserId As String, UserPassword As String)	**Effect**	Enables connecting to a particular Service
	Arguments	• UserId (input): service manager identifier • Password (input): Service manager password
	Returns	Nothing
	Errors returned	• -12 : You are not logged on to the M5000 CC Server • -13 : Id entered does not exist • -14 : You are not the manager of this Service • -15 : Incorrect password. • -16 : You are already connected to the Server.
Sub Logout()	**Effect**	Enables disconnecting from a particular Service
	Arguments	None
	Returns	Nothing
	Errors returned	• -20 : Cannot disconnect, you are not connected to the M5000 CC Server • -21 : Cannot disconnect, you are already disconnected from this Service
Sub OpenService"Beta"()	**Effect**	Opens the "Beta" version of a Service. This asynchronous method can be invoked only when the client application is connected to the Service.
	Arguments	None
	Returns	Nothing
	Errors returned	• -140 : Cannot open the "Beta" version of this Service, you are not connected to the M5000 CC Server • -141 : Cannot open the "Beta" version of this Service, you are not connected to the Service • -142 : The Service selected is not part of the Services collection • -143 : The selected Service is not an outbound Service. • -144 : Cannot open Service: no "Beta" version defined • -145 : Cannot open Service: the list of outgoing calls in "Beta" has been opened by an application other than the M5000 CC Server

Tableau 14.65 METHODS OF THE "SERVICE" OBJECT (2/2)

Methods	Characteristics	Comments or values
Sub OpenService"Production"()	**Effect**	Opens the "Production" version of a Service. This asynchronous method can be invoked only when the client application is connected to the Service.
	Arguments	None
	Returns	Nothing
	Errors returned	• -30 : Cannot open the "Production" version of this Service, you are not connected to the M5000 CC Server • -31 : Cannot open the "Production" version of this Service, you are not connected to the Service • -32 : The Service selected is not part of the Services collection • -33 : The selected Service is not an outbound Service. • -34 : Cannot open Service: no "Production" version defined • -35 : Cannot open Service: the list of outgoing calls in "Production" has been opened by an application other than the M5000 CC Server
Sub CloseService"Beta"()	**Effect**	closes a Service in "Beta". This asynchronous method can be invoked only when the client application is connected to the Service.
	Arguments	None
	Returns	Nothing
	Errors returned	• -160 : Cannot close the Service, you are not connected to the M5000 CC Server • -161 : Cannot close the Service, you are not connected to the Service • -163 : Cannot close Service: The selected Service is not an outbound Service. • -164 : Cannot close Service: it is not in "Beta"
Sub CloseService"Production"()	**Effect**	Closes a Service in "Production". This asynchronous method can be invoked only when the client application is connected to the Service.
	Arguments	None
	Returns	Nothing
	Errors returned	• -40 : Cannot close the Service, you are not connected to the M5000 CC Server • -41 : Cannot close the Service, you are not connected to the Service • -43 : Cannot close Service: The selected Service is not an outbound Service. • -44 : Cannot close Service: it is not in "Production"

Events of the "Service" object

Tableau 14.66 EVENTS OF THE "SERVICE" OBJECT

Events	Characteristics	Comments or values
Event ServiceStatus"Beta"Change(myServiceStatus)	**Effect**	This event is usually raised when the status of the Service in "Beta" version was modified, and only when the client application is connected to the Service
	Arguments	• myServiceStatus (input) : the new status of the Service
	Returns	An event is returned when the status of the Service in "Beta" has changed
	Errors returned	No error expected
Event ServiceStatus"Production"Change(myServiceStatus)	**Effect**	This event is usually raised when the status of the Service in "Production" version was modified, and only when the client application is connected to the Service
	Arguments	• myServiceStatus (input) : the new status of the Service
	Returns	An event is returned when the status of the Service in "Production" has changed
	Errors returned	No error expected

14.2.5 DESCRIPTION OF THE "DIALLIST" OBJECT

Properties of the "Diallist" object

Tableau 14.67 PROPERTIES OF THE "DIALLIST" OBJECT

Properties	Characteristics	Comments or values
Property Get "Beta"Ids() As Ids	**Effect**	Returns the Ids object (see § 14.2.6) used to determine which are the calls defined in the "Beta" outbound calls list
	Arguments	None
	Returns	A reference to the "Beta" Ids collection
	Errors returned	No error expected
Property Get "Production"Ids() As Ids	**Effect**	Returns the Ids object (see § 14.2.6) used to determine which are the calls defined in the "Production" outbound calls list
	Arguments	None
	Returns	A reference to the "Production" Ids collection
	Errors returned	No error expected

Methods of the "Diallist" object

Tableau 14.68 METHODS OF THE "DIALLIST" OBJECT (1/7)

Methods	Characteristics	Comments or values
Sub AddCallIn"Beta"Diallist(ByVal id As String, ByVal Name As String, ByVal PhoneNumber As String, ByVal Priority As Integer, ByVal NextCallTime As Date, ByVal LeftConnects As Integer, ByVal LeftRetries As Integer, ByVal UseDialListProperties As Boolean, ByVal AgentId As String, ByVal Team As String, ByVal Languages As String, ByVal Skills As String)	**Effect**	Adds a call to the list of outbound calls in "Beta"
	Arguments	• Id (input) : new call id; must be unique • Name (input) : person to call • PhoneNumber (input) : phone number to dial • Priority (input) : new call priority • NextCallTime (input) : time the call must be made • LeftConnects (input) : number of retries to reach the appropriate person • LeftRetries (input) : Number of attempts to set up a connection • UseDialProperties (input) : use of dial properties • AgentId (input) : ide of the agent who must process the call • Team (input) : team the agent who must process the call belongs to • Languages (input) : languages associated with the outbound call, and their required levels. The format is as follows: [LanguageId1][Level1][LanguageId2][Level2]... • Skills (input) : skills associated with the outbound call, and their required levels. The format is as follows: [SkillId1][Level1][SkillId2][Level2]
	Returns	Nothing

Tableau 14.68 METHODS OF THE "DIALLIST" OBJECT (2/7)

Methods	Characteristics	Comments or values
Sub AddCallIn"Beta"Diallist(ByVal id As String, ByVal Name As String, ByVal PhoneNumber As String, ByVal Priority As Integer, ByVal NextCallTime As Date, ByVal LeftConnects As Integer, ByVal LeftRetries As Integer, ByVal UseDialListProperties As Boolean, ByVal AgentId As String, ByVal Team As String, ByVal Languages As String, ByVal Skills As String) (Continued)	**Errors returned**	• -50 : Cannot add a call to the "Beta" outbound calls list. You are not logged on to the M5000 CC Server • -51 : Cannot add a call to the "Beta" outbound calls list. You are not logged on to the Service. • -52 : Cannot add a call to the "Beta" outbound calls list. Id entered incorrect. • -53 : Cannot add a call to the "Beta" outbound calls list. Enter an id for this call. • -54 : Cannot add a call to the "Beta" outbound calls list. Enter a name for this call. • -55 : Cannot add a call to the "Beta" outbound calls list. Enter a phone number for this call. • -56 : Cannot add a call to the "Beta" outbound calls list. Incorrect phone number. • -57 : Cannot add a call to the "Beta" outbound calls list. Incorrect priority. • -58 : Cannot add a call to the "Beta" outbound calls list. LeftConnects incorrect. • -59 : Cannot add a call to the "Beta" outbound calls list. LeftRetries incorrect. • -1050 : Cannot add a call to the "Beta" outbound calls list. At least one of the LanguageIds is not defined in the Service. • -1051 : Cannot add a call to the "Beta" outbound calls list. One of the language levels is incorrect. • -1052 : Cannot add a call to the "Beta" outbound calls list. Languages character string format incorrect. • -1053 : Cannot add a call to the "Beta" outbound calls list. At least one SkillIds not defined in the Service. • -1054 : Cannot add a call to the "Beta" outbound calls list. One of the skill levels is incorrect. • -1055 : Cannot add a call to the "Beta" outbound calls list. Skills character string format incorrect. • -1056 : Cannot add a call to the "Beta" outbound calls list. The list of outbound calls in "Beta" is open by an application other than the M5000 CC Server

Tableau 14.68 METHODS OF THE "DIALLIST" OBJECT (3/7)

Methods	Characteristics	Comments or values
Sub AddCallIn"Production"Diallist(ByVal id As String, ByVal Name As String, ByVal PhoneNumber As String, ByVal Priority As Integer, ByVal NextCallTime As Date, ByVal LeftConnects As Integer, ByVal LeftRetries As Integer, ByVal UseDialListProperties As Boolean, ByVal AgentId As String, ByVal Team As String, ByVal Languages As String, ByVal Skills As String) (Continued)	**Note:**	The value of NextCallTime must be set to <31/12/9999> to add the call to the pool. Few calls will have a NextCallTime with a past value.
	Effect	Adds a call to the list of outbound calls in "Production"
	Arguments	• Id (input) : new call id; must be unique • Name (input) : person to call • PhoneNumber (input) : phone number to dial • Priority (input) : new call priority • NextCallTime (input) : time the call must be made • LeftConnects (input) : number of retries to reach the appropriate person • LeftRetries (input) : Number of attempts to set up a connection • UseDialProperties (input) : use of dial properties • AgentId (input) : ide of the agent who must process the call • Team (input) : team the agent who must process the call belongs to • Languages (input) : languages associated with the outbound call, and their required levels. The format is as follows: [LanguageId1][Level1][LanguageId2][Level2]... • Skills (input) : skills associated with the outbound call, and their required levels. The format is as follows: [SkillId1][Level1][SkillId2][Level2]
	Returns	Nothing

Tableau 14.68 METHODS OF THE "DIALLIST" OBJECT (4/7)

Methods	Characteristics	Comments or values
Sub AddCallIn"Production"Diallist(ByVal id As String, ByVal Name As String, ByVal PhoneNumber As String, ByVal Priority As Integer, ByVal NextCallTime As Date, ByVal LeftConnects As Integer, ByVal LeftRetries As Integer, ByVal UseDialListProperties As Boolean, ByVal AgentId As String, ByVal Team As String, ByVal Languages As String, ByVal Skills As String) (Continued)	**Errors returned**	• -60 : Cannot add a call to the "Production" outbound calls list. You are not logged on to the M5000 CC Server • -61 : Cannot add a call to the "Production" outbound calls list. You are not logged on to the Service. • -62 : Cannot add a call to the "Production" outbound calls list. Id entered incorrect. • -63 : Cannot add a call to the "Production" outbound calls list. Enter an id for this call. • -64 : Cannot add a call to the "Production" outbound calls list. Enter a name for this call. • -65 : Cannot add a call to the "Production" outbound calls list. Enter a phone number for this call. • -66 : Cannot add a call to the "Production" outbound calls list. Incorrect phone number. • -67 : Cannot add a call to the "Production" outbound calls list. Incorrect priority. • -68 : Cannot add a call to the "Production" outbound calls list. LeftConnects incorrect. • -69 : Cannot add a call to the "Production" outbound calls list. LeftRetries incorrect. • -1060 : Cannot add a call to the "Production" outbound calls list. At least one of the LanguageIds is not defined in the Service. • -1061 : Cannot add a call to the "Production" outbound calls list. One of the language levels is incorrect. • -1062 : Cannot add a call to the "Production" outbound calls list. Languages character string format incorrect. • -1063 : Cannot add a call to the "Production" outbound calls list. At least one SkillIds not defined in the Service. • -1064 : Cannot add a call to the "Production" outbound calls list. One of the skill levels is incorrect. • -1065 : Cannot add a call to the "Production" outbound calls list. Skills character string format incorrect. • -1066 : Cannot add a call to the "Production" outbound calls list. The list of outbound calls in "Production" is open by an application other than the M5000 CC Server
	Note:	The value of NextCallTime must be set to <31/12/9999> to add the call to the pool. Few calls will have a NextCallTime with a past value.

Tableau 14.68 METHODS OF THE "DIALLIST" OBJECT (5/7)

Methods	Characteristics	Comments or values
Sub DeleteCallIn"Beta"Diallist(ByVal id As String)	**Effect**	Removes a call from the list of outbound calls in "Beta"
	Arguments	• Id (input) : identifier of the outbound call to remove from the list
	Returns	Nothing
	Errors returned	• -70 : Cannot remove a call from the "Beta" outbound calls list. You are not logged on to the M5000 CC Server • -71 : Cannot remove a call from the "Beta" outbound calls list. You are not logged on to the Service. • -72 : Cannot remove a call from the "Beta" outbound calls list. Id entered incorrect. • -73 : Cannot remove a call from the "Beta" outbound calls list. The Service is not an outbound Service. • -74 : Cannot remove a call from the "Beta" outbound calls list. The call identifier does not exist in the list. • -75 : Cannot remove a call from the "Beta" outbound calls list. Call ongoing. • -76 : Cannot remove a call from the "Beta" outbound calls list. The list of outbound calls in "Beta" is open by another application.
Sub DeleteCallIn"Production" Diallist(ByVal id As String)	**Effect**	Removes a call from the list of outbound calls in "Production"
	Arguments	• Id (input) : identifier of the outbound call to remove from the list
	Returns	Nothing
	Errors returned	• -80 : Cannot remove a call from the "Production" outbound calls list. You are not logged on to the M5000 CC Server • -81 : Cannot remove a call from the "Production" outbound calls list. You are not logged on to the Service. • -82 : Cannot remove a call from the "Production" outbound calls list. Id entered incorrect. • -83 : Cannot remove a call from the "Production" outbound calls list. The Service is not an outbound Service. • -84 : Cannot remove a call from the "Production" outbound calls list. The call identifier does not exist in the list. • -85 : Cannot remove a call from the "Production" outbound calls list. Call ongoing. • -86 : Cannot remove a call from the "Production" outbound calls list. The list of outbound calls in "Production" is open by another application.

Tableau 14.68 METHODS OF THE "DIALLIST" OBJECT (6/7)

Methods	Characteristics	Comments or values
Sub Read"Beta"Call(ByVal id As String, ByRef Name As String, ByRef PhoneNumber As String, ByRef Priority As Integer, ByRef NextCallTime As Date, ByRef LeftConnects As Integer, ByRef LeftRetries As Integer, ByRef InitialLeftRetries As Integer, ByRef UseDialProperties As Boolean, ByRef AgentId As String, ByRef Team As String, ByRef Languages As String, ByRef Skills As String, ByRef CheckInUse As Boolean, ByRef LastCallResult As Integer, ByRef LastCallTime As Date)	**Effect**	Reads the properties and status of a call in the list of outbound calls in "Beta"
	Arguments	• Id (output) : identifier of the call to read • Name (output) : person to call • PhoneNumber (output) : phone number to dial • Priority (output) : new call priority • NextCallTime (output) : time the call must be made • LeftConnects (output) : number of retries to reach the appropriate person • InitialLeftRetries (output) : initial nubmer of LeftRetries • LeftRetries (output) : Number of attempts to set up a connection • UseDialProperties (output) : use of dial properties • AgentId (output) : ide of the agent who must process the call • Team (output) : team the agent who must process the call belongs to • Languages (output) : languages associated with the outbound call, and their required levels • Skills (output) : skills associated with the outbound call, and their required levels • CheckInUse (output) : indicates that the call is being processed • LastCallResult (output) : result of the call when the call was made the last time • LastCallTime (output) : time at which the call was made for the last time
	Returns	Nothing
	Errors returned	• -90 : Cannot read the call from the "Beta" outbound calls list. You are not logged on to the M5000 CC Server • -91 : Cannot read the call from the "Beta" outbound calls list. You are not connected to the Service. • -92 : Cannot read the call from the "Beta" outbound calls list. The identifier specified was not found in the list of outbound calls in "Beta". • -93 : Cannot read the call from the "Beta" outbound calls list. The list of outbound calls in "Beta" is open by another application. • -94 : Cannot read the call from the "Beta" outbound calls list. Call ongoing.

Tableau 14.68 METHODS OF THE "DIALLIST" OBJECT (7/7)

Methods	Characteristics	Comments or values
Sub Read"Production"Call(ByVal id As String, ByRef Name As String, ByRef PhoneNumber As String, ByRef Priority As Integer, ByRef NextCallTime As Date, ByRef LeftConnects As Integer, ByRef LeftRetries As Integer, ByRef InitialLeftRetries As Integer, ByRef UseDialProperties As Boolean, ByRef AgentId As String, ByRef Team As String, ByRef Languages As String, ByRef Skills As String, ByRef CheckInUse As Boolean, ByRef LastCallResult As Integer, ByRef LastCallTime As Date)	**Effect**	Reads the properties and status of a call in the list of outbound calls in "Production"
	Arguments	• Id (output) : identifier of the call to read • Name (output) : person to call • PhoneNumber (output) : phone number to dial • Priority (output) : new call priority • NextCallTime (output) : time the call must be made • LeftConnects (output) : number of retries to reach the appropriate person • InitialLeftRetries (output) : initial nubmer of LeftRetries • LeftRetries (output) : Number of attempts to set up a connection • UseDialProperties (output) : use of dial properties • AgentId (output) : ide of the agent who must process the call • Team (output) : team the agent who must process the call belongs to • Languages (output) : languages associated with the outbound call, and their required levels • Skills (output) : skills associated with the outbound call, and their required levels • CheckInUse (output) : indicates that the call is being processed • LastCallResult (output) : result of the call when the call was made the last time • LastCallTime (output) : time at which the call was made for the last time
	Returns	Nothing
	Errors returned	• -100 : Cannot read the call from the "Production" outbound calls list. You are not logged on to the M5000 CC Server • -101 : Cannot read the call from the "Production" outbound calls list. You are not connected to the Service. • -102 : Cannot read the call from the "Production" outbound calls list. The identifier specified was not found in the list of outbound calls in "Production". • -103 : Cannot read the call from the "Production" outbound calls list. The list of outbound calls in "Production" is open by another application. • -104 : Cannot read the call from the "Production" outbound calls list. Call ongoing.

Events of the "Diallist" object

Tableau 14.69 EVENTS OF THE "DIALLIST" OBJECT

Events	Characteristics	Comments or values
Event "Beta"CallPerformed(id, LastCallResult, NextCallTime, LeftConnects, LeftRetries)	**Effect**	This event is raised when an outbound call was made in "Beta". The Service must be conencted to receive this information.
	Arguments	• Id (input) : identifier of the call made in "Beta" • LastCallResult (input) : result of the call when the call was made the last time • NextCallTime (input) : time the call must be made • LeftConnects (input) : number of retries to reach the appropriate person • LeftRetries (input) : Number of attempts to set up a connection
	Returns	An event is raised when an outbound call was made in "Beta".
	Errors returned	No error expected
Event "Production"CallPerformed(id, LastCallResult, NextCallTime, LeftConnects, LeftRetries)	**Effect**	This event is raised when an outbound call was made in "Production". The Service must be conencted to receive this information.
	Arguments	• Id (input) : identifier of the call made in "Production" • LastCallResult (input) : result of the call when the call was made the last time • NextCallTime (input) : time the call must be made • LeftConnects (input) : number of retries to reach the appropriate person • LeftRetries (input) : Number of attempts to set up a connection
	Returns	An event is raised when an outbound call was made in "Production".
	Errors returned	No error expected

14.2.6 DESCRIPTION OF THE "LDS" OBJECT

Properties of the "IDS" object

Tableau 14.70 PROPERTIES OF THE "IDS" OBJECT

Properties	Characteristics	Comments or values
Property Get Count() As Long	**Effect**	Returns the number of elements contained in the Ids collection
	Arguments	None
	Returns	Number of elements contained in the Ids collection
	Errors returned	• -130 : Cannot receive the number of items in the collection. You are not logged on to the M5000 CC Server • -131 : Cannot receive the number of items in the collection. You are not logged on to the Service.
Property Get Item(ByVal position As String) As String	**Effect**	Selects an item in the Ids collection
	Arguments	• Position (input) : in the collection, position of the Id which must be selected
	Returns	Item selected in the Ids collection
	Errors returned	• -120 : Cannot select this element. You are not logged on to the M5000 CC Server • -121 : Cannot select this element. You are not logged on to the Service. • -122 : Cannot select this element. The position specified is incorrect.

Methods of the "IDS" object

Tableau 14.71 METHODS OF THE "IDS" OBJECT

Methods	Characteristics	Comments or values
Sub Refresh()	**Effect**	Refreshes the local copy of the outbound calls identifiers. THis method gets the ids present in the outbound calls lists at a given time. After refreshing and if calls were added or removed, the local image of the Ids is not modified. The only way to take these modifications into consideration is to invoke the Refresh method again.
	Arguments	None
	Returns	Nothing
	Errors returned	• -110 : Cannot refresh the Ids collection. You are not logged on to the M5000 CC Server • -111 : Cannot refresh the Ids collection. You are not logged on to the Service. • -212 : Cannot refresh the Ids collection. The list of outbound calls in "Beta" is open by an application other than the M5000 CC Server • -213 : Cannot refresh the Ids collection. The list of outbound calls in "Production" is open by an application other than the M5000 CC Server.

14.3 APPENDIX TO THE M5000 CC WEBCALL SERVICE COMPONENT

This web service is used to create web media calls from a web browser. It is described in a separate document, available on the M5000 CC installation DVD.

14.4 APPENDIX: TRANSLATING AND PERSONALISING THE M5000 CC PORTAL

14.4.1 TRANSLATION

Like any other Mitel 5000 Contact Center application, the portal and web applications are located with a tool that allows languages to be easily added (or removed).

Two different techniques must be used, depending on the underlying technology.

14.4.1.1 LOCATION THROUGH JAVASCRIPT

To locate the portal pages based on Javascript in a new language, proceed as follows:

1 Add a new column on the "Portal" table in the "DBLocalization.mdb" database located on the installation DVD.

0 Translate all the recordings of this table in the new column.

0 Generate some location Javascript files using the tool "TranslateTool.exe" provided on the installation DVD.

- Do not declare the tables of the new languages in the menu File->TranslateTool configuration ("DisplayName" column).

0 Copy the files thus generated to the "Portal\js\" directory of the installation DVD.

To delete any of the predefined languages, proceed as follows:

1 Delete the corresponding column in the “Portal” table of the “DBLocalization.mdb” database.

0 Generate some location Javascript files using the tool "TranslateTool.exe" provided on the installation DVD.

0 Copy the files thus generated to the "Portal\js\" directory of the installation DVD.

After these steps, an installation of the portal will offer new, available languages (or will no longer offer deleted languages) for location, especially on the options page (see Sheet U-900).

This location technique applies to all the applications, except the statistical reports.

14.4.1.2 LOCATION THROUGH ASP.NET

To locate the applications via ASP.NET in a new language, proceed as follows:

1 Add a new column on the "WebReports" table in the "DBLocalization.mdb" database located on the installation DVD.

0 Translate all the recordings of this table in the new column.

0 Generate some location ".NET" DLLs using the tool "TranslateTool.exe" provided on the installation DVD. These DLLs are organised into folders (one folder per language).

- Do not declare the tables of the new languages in the menu File->TranslateTool configuration ("DisplayName" column).

0 Copy the directories thus generated to the "Portal\WebReports\bin" directory of the installation DVD.

To delete any of the predefined languages, proceed as follows:

1 Delete the corresponding column in the "WebReports" table of the “DBLocalization.mdb” database.

0 Generate some location ".NET" DLLs using the tool "TranslateTool.exe" provided on the installation DVD.

0 Copy the directories thus generated to the "Portal\WebReports\bin" directory of the installation DVD.

This location technique only applies to statistical reports.

14.4.2 NEW SKINS

The skins with which the portal and web applications are displayed can be modified or removed, and new skins can be created.

14.4.2.1 GENERAL PROCEDURE

To add a new skin (see Sheet U-900) to the ones available in the portal, proceed as follows:

1 Add a new directory containing the images specific to the new skin in the "Portal\images\" folder of the installation DVD. Do not forget the “preview” image of the new skin displayed on the options page.

0 Defining a new CSS (Cascading Style Sheets) file (see the relevant reference site: http://www.w3.org/Style/CSS/) which changes the portal appearance, especially by pointing to the specific images in the folder created in the previous phase. The same remark about the CSS rule on the "preview" image of the new skin.

- Add the new CSS file in the "Portal\skins\" directory of the installation DVD.
- Edit the file "Portal\js\Skin.js" to add the new skin to it, by adding [Name of new skin, URL to new CSS file].

To delete any of the predefined skins, also edit the file "Portal\js\Skin.js" and delete [Skin name, URL to CSS file] from it.

Note: If no skin is defined, the portal and web applications cannot work.

14.5 APPENDIX: M5000 CC APPLICATION TOOLKIT

The M5000 CC web service API is described in the document "M5000 CC Toolkit Documentation.chm" located on the M5000 CC DVD (in the folder "..\documents\Toolkit\").