

# Generic Extension

OPERATIONAL DIRECTIONS



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## 1

## GENERAL

## 1.1

## OVERVIEW

The expression Generic extension is a concept introduced in the MX-ONE.

Unlike a traditional extension which is affiliated to an equipment position a generic extension is affiliated to a LIM, a directory number, and a terminal which enables implementation of features like free seating. In the MX-ONE the following applications have generic extensions:

- IP Extension (SIP and H.323)
- DECT Cordless Extension
- Remote Extension

To a generic extension a number of categories are affiliated. Those categories are collected in a number of Common Service Profiles (CSPs) and to every generic extension a CSP must be affiliated.

#### Undefined Generic extension

To be able to use a generic extension for traffic it must be assigned one of following attributes:

- An assigned feature level
- EDN-only extension
- Virtual extension
- Virtual extension used for Emergency call back

An extension without any of these attributes is considered to be *undefined*. It is possible to attach other attributes such as call list, and repeated individual diversion, but it will not be possible to use for traffic.

The undefined generic extension then exists in the exchange and it will be named generic extension when a terminal or the attribute virtual is affiliated.

#### EDN-only extension

An EDN-only extension is a SIP extension that can only be used as an extra directory number on an already existing SIP user, and cannot be registered to on it's own terminal.

#### Alias number for Generic extension

Generic extensions can be configured to have an "alias number", i.e. a number displayed to other connected parties, which is different from the real directory number of the extension. The function utilized a (dummy) group number to provide the alias.

#### Virtual Generic Extension

A virtual generic extension is created when a directory number with a CSP and the attribute *virtual* is initiated in the exchange.

The virtual generic extension then exists in the exchange and it will be named generic extension when a terminal is affiliated.

**Note:** It is recommended to affiliate either the feature Repeated individual diversion or Personal number to a virtual generic extension.

A virtual generic extension can be used by temporary users like, for example, consultants which normally do not have wired extensions.

The amount of virtual generic extensions is affiliated to the number of directory numbers per LIM and not to the number of HW positions.

After the basic platform has been initiated for the directory number, different applications can be defined to affiliate this directory number to a terminal.

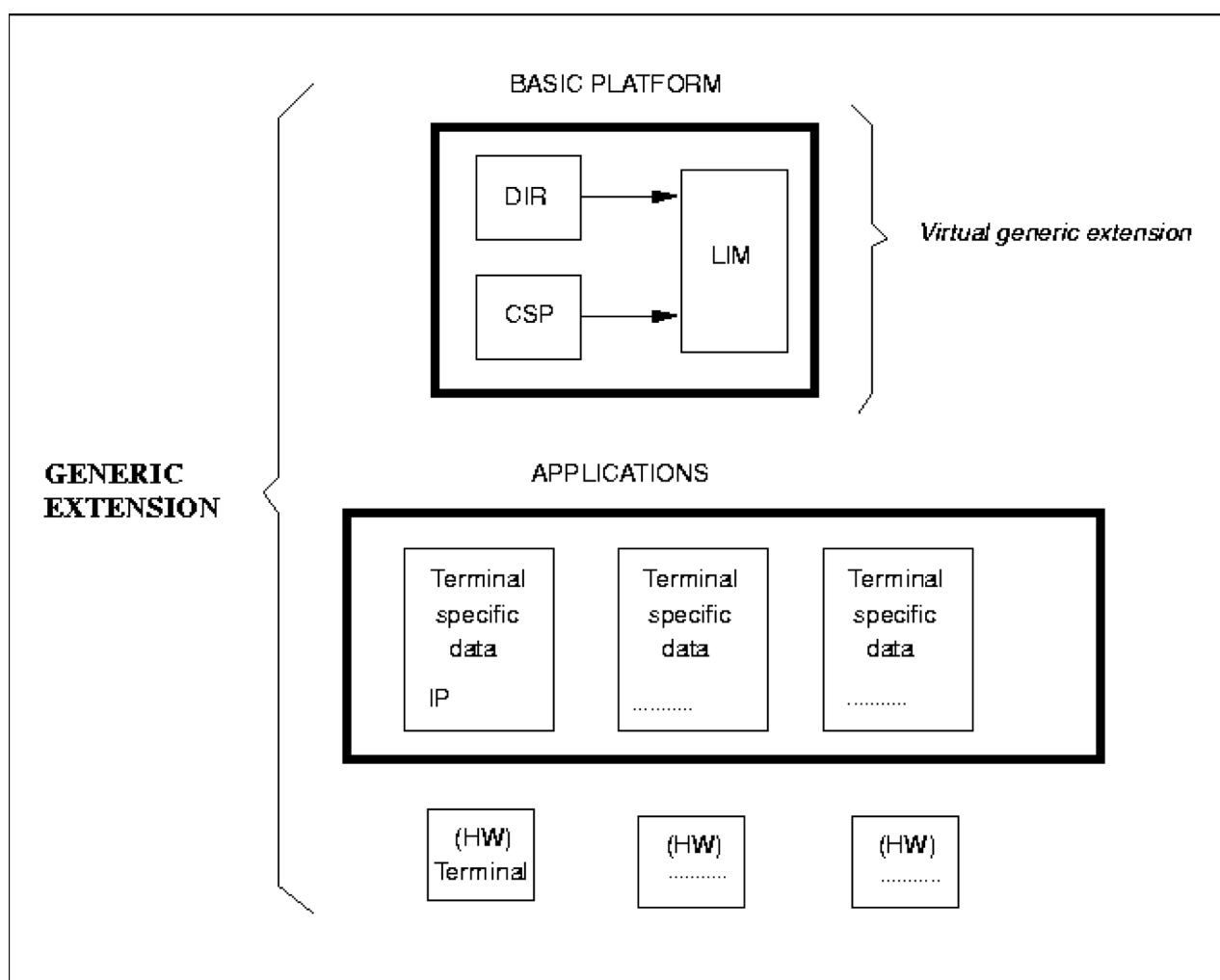
Each type of application will have its corresponding HW, but for any type, the base platform has to be defined first. In this way a generic extension with an affiliated terminal is created.

### Virtual Generic Extension for Emergency call back

A virtual generic extension (for emergency call back) is created when a directory number with a CSP and the attribute *emergency* is initiated in the exchange.

The virtual (generic) extension can then be used as a call back number place holder for Emergency call back. This extension number is unlicensed and can only be used for emergency call purposes. Note that all virtual extension types except *undefined* can be used for this purpose.

For a definition of a generic extension and a virtual generic extension, see Figure .



**Figure 1: Generic Extension Definition**

## 1.2

## GENERIC EXTENSION INITIATION

In general terms, any generic extension is defined as a directory number assigned to a terminal of any type. A virtual generic extension is a directory number that has no terminal but the attribute virtual assigned. An EDN-only extension is a generic extension that has the attribute EDN assigned.

Generic extension initiation has mainly four steps:

1. Define the directory number in the extension number series with the command *number\_initiate*.
2. Initiate the common service profile (CSP) with the command *extension\_profile*.
3. Define the configuration of the directory number depending on the user with the command *extension*.
4. Assign the directory number to the terminal using a specific command (for example, *ip\_extension*) or a service request.

However, not all the four previous steps are mandatory to generate a generic extension. Depending on which steps are done there are two different situations:

- Generic extension without terminal assigned, see 1.2.1 on page 5.
- Generic extension with terminal assigned, see 1.2.2 on page 5.

## 1.2.1

## GENERIC EXTENSION WITHOUT TERMINAL ASSIGNED

Only steps 1, 2, and 3 are needed (see Table 1 on page 5).

In step 1 the directory number is defined in the extension number series (*number\_initiate...-numbertype ex*). The common service profile, used later to establish the generic extension categories, is initiated (by *extension\_profile*) in step 2.

In step 3, the directory number will be initiated (by *extension*). It will be associated to a LIM number, not to an EQU position (as usual), since a terminal position is not necessary at this time. All data related to the directory number will be stored in this LIM, that is, a CSP (common service profile), a customer number, and so on.

This will form the undefined or virtual generic extension.

**Table 1 Generic Extension without Terminal Assigned**

Virtual generic extension	
Step 1	<i>number_initiate -number XXXXX -numbertype ex</i>
Step 2	<i>extension_profile -i --csp XXX ...</i>
Step 3	<i>extension -i d XXXXX -l YYY --csp ZZZ --virtual x</i>

## 1.2.2

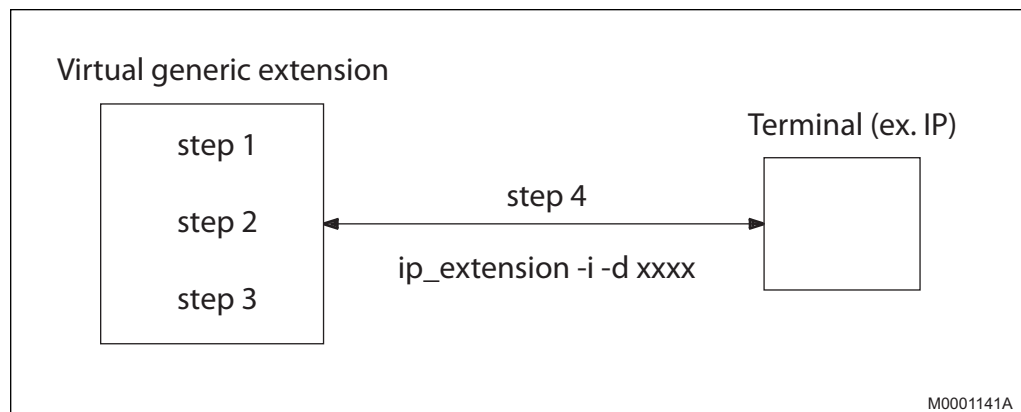
## GENERIC EXTENSION WITH TERMINAL ASSIGNED

Steps 1 to 4 are all necessary to execute (see Figure ).

For an easier description, IP extensions will be used as an example of a type of a generic extension terminal.

Steps 1, 2, and 3 are the same as described previously.

In step 4, the directory number is assigned to the terminal. Command *ip\_extension* will accomplish that for IP terminals.



**Figure 2: Generic Extension with Terminal Assigned**

### 1.2.3

### COMMON SERVICE PROFILE, CSP

A generic extension consists of a directory number and a terminal, if any. Each of them has its own categories and capabilities. All together they form the generic extension profile that defines what a generic extension is able to do or not to do in the system.

Directory number categories are named service profile. Generic extensions use a common service profile, CSP, to simplify the service profile handling.

## 1.3

## PROCEDURE EXECUTION

A generic extension (for example, DIR=3333) has the capability to execute a procedure (for example, \*21\*1500#) from an I/O terminal as if it was executed from the extension, see Figure .

Not all the procedures are allowed to be executed by the I/O terminal for any generic extension. It depends on the directory number's category and the type of terminal, if there is any terminal associated to it.

Due to this, it will be possible to execute a procedure for a directory number even if it has no terminal assigned. This is the situation for the virtual generic extension.

This capability has also been introduced to allow the user to execute the same procedures (for example, \*21\*1500#) from a WEB application.

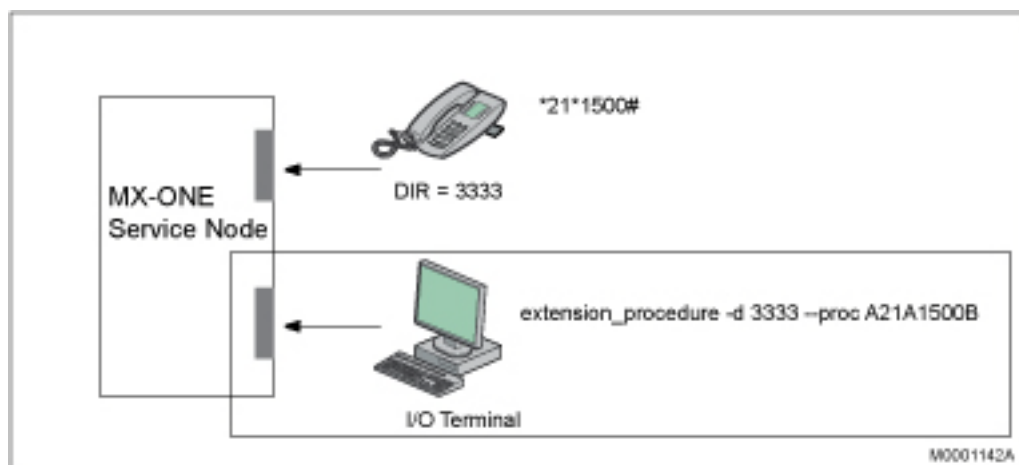


Figure 3: Generic Extension Procedure Execution

1.4 KEY HANDLING

The configuration of keys only applies for those types of generic extensions and terminals which are capable of key handling.

**Note:** To be able to handle TNS keys from the exchange, this function must be enabled in the configuration file, see the description for *CONFIGURATION FILE FOR DBC 42X*. If the function is disabled and the command *extension\_key -i --function* is used, this TNS number is only stored in the exchange and not transferred to the telephone. If the command *extension\_key -p* is used, only the TNS numbers stored in the exchange are printed, but not the TNS numbers initiated in the telephone.

By using an I/O command it is possible to specify a certain function for a specific key (physical key) on an MX-ONE IP terminal if the key is not already tied to a function in the configuration file.

When the initiation command *extension\_key -i* is entered, the system administrator must be aware of that the keys are sequentially numbered excluding the keys tied by the configuration file. The value of the key to be entered in commands (logical key) does not correspond to a physical location in the terminal.

The logical key is a value that physically will vary depending on the type of terminal where the user of the generic extension is logged on, the specific configuration file, the presence or absence of extra key panels, and so on.

Figure is an example of the key layout of a terminal where some keys are tied to certain functionality (for example, physical keys 1, 2, and 3). The physical keys that are not assigned to any function are available to be programmed; the value (logical key) that should be entered in the command is shown next to those keys (for example, KEY=1 and KEY=2).

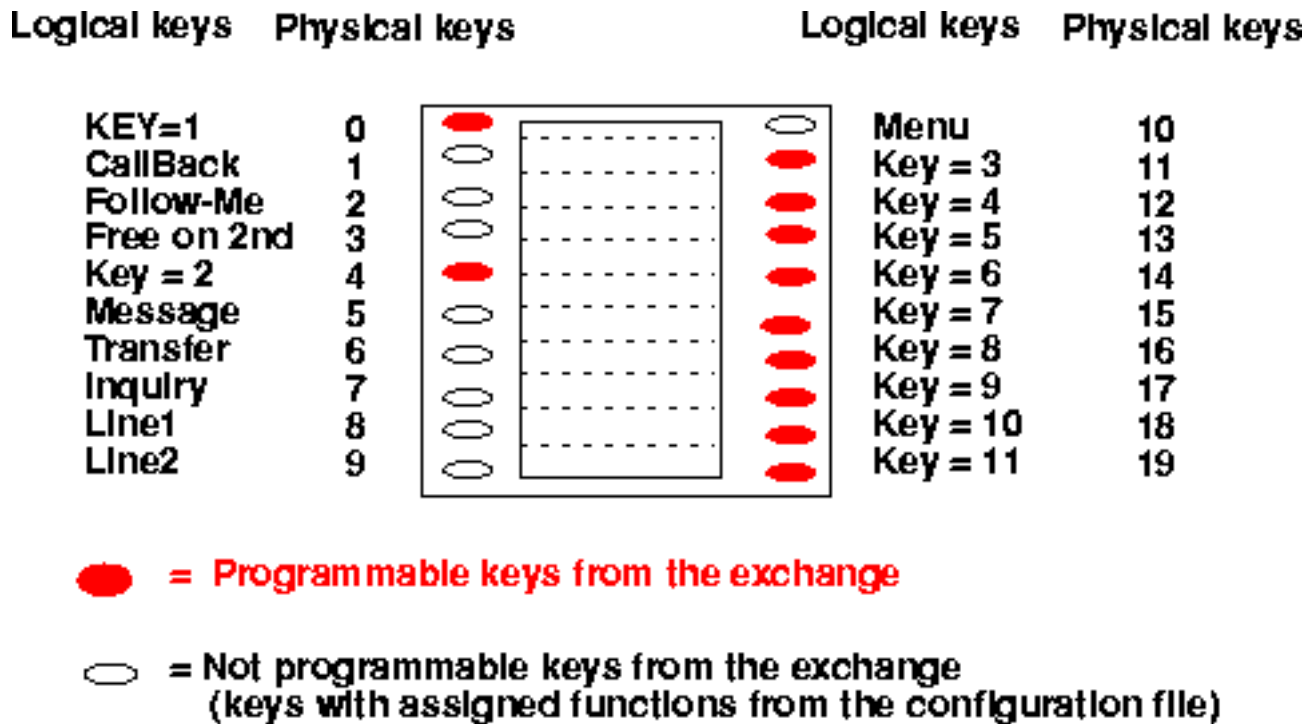


Figure 4: Key Layout Example

For more information, see the description for *CONFIGURATION FILE FOR DBC 42X*.

## 2 PREREQUISITES

The extension number series must be initiated.

If the generic extension shall be permitted to use video media, such licenses must be available. If the generic extension is intended to use Mitel BluStar soft-clients, license(s) for the appropriate service level must be available when the extension number shall be initiated or changed.

## 3 AIDS

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## 4 PROCEDURE

There are two types of commands handled by the generic extension function: those which are mandatory and allow the administrator to initiate a generic extension, and additional ones used to manage data related to the generic extension.

Mandatory:

- Form a common service profile for the category characteristics.
- Initiate the directory number

Additional:

- Initiate a procedure execution

## 5 EXECUTION

### 5.1 COMMON SERVICE PROFILE

#### 5.1.1 INITIATE A COMMON SERVICE PROFILE

##### General

A common service profile is a number that represents a combination of category characteristics. These common service profiles are assigned as categories for directory numbers.

In some traffic cases, the generic extension will use a default category which is stated in CSP = 0. Due to this, CSP = 0 has to be the first CSP initiated in the exchange.

##### Prerequisites

If the CSP entered is different from the value 0, then CSP = 0 has to be initiated first (see above).

In any case (when CSP = 0 or different from 0) the common service profile should not have been initiated previously.

##### Execution

Use the command *extension\_profile -p* to print the existing common service profile and check if there are any free common service profiles to be used.

Use the command *extension\_profile -i --csp* to initiate a new common service profile.

Use the command *extension\_profile -p* to verify the result.

#### 5.1.2 REMOVE A COMMON SERVICE PROFILE

##### General

It is possible to remove any common service profile. However, CSP = 0 will only be allowed to be removed if there are no more CSPs initiated in the exchange.

##### Prerequisites

Verify that the CSP is already initiated. Use the command *extension\_profile -p --csp*.

Verify that the CSP is not assigned to any directory number. Use the command *extension -p --csp*.

Just in case CSP = 0 is the one to be removed, also check that there are no more CSPs initiated. Use the command *extension\_profile -p --csp*.

##### Execution

Use the command *extension\_profile -p* to order a printout of the common service profile.

Use the command *extension\_profile -e --csp* to erase the common service profile.

Use the command *extension\_profile -p* to verify the result.

### 5.1.3 ALTER A COMMON SERVICE PROFILE

#### **General**

Directory numbers initiated with a certain common service profile are affected if the categories of the common service profile are altered.

#### **Prerequisites**

A common service profile must be initiated.

#### **Execution**

Use the command *extension\_profile -p* to order a printout of the common service profile.

Use the command *extension\_profile -c --csp* to alter the common service profile.

Use the command *extension\_profile -p* to verify the result.

### 5.1.4 PRINT A COMMON SERVICE PROFILE

Use the command *extension\_profile -p* to obtain a printout.

## 5.2 DIRECTORY NUMBER

### 5.2.1 INITIATE A DIRECTORY NUMBER

#### **General**

A new directory number is initiated by assigning to it a common service profile, a customer number (if the customer group function is to be used in the system), the language (if the Choice of language optional feature is available), maximum charging cost (if applicable), secretary (if applicable), group do not disturb category, special purpose option (if applicable), and the LIM where all those data will be stored.

Several directory numbers can be initiated simultaneously.

#### **Prerequisites**

A common service profile must be initiated.

#### **Execution**

Use the command *extension\_profile -p* to check the common service profile.

Use the command *extension -i -d* to initiate the directory number.

Use the command *extension -p* to verify the directory number data.

### 5.2.2 REMOVE A DIRECTORY NUMBER

#### **General**

It is not possible to remove a generic extension directory number when it has an extension type assigned (e.g. ip\_extension entered).

#### **Prerequisites**

A directory number must be initiated.

No feature keys or other service associations should exist on the extensions that are to be removed.

### Execution

Use the command *extension -p* to check that the directory number exists.

Use the command *extension -e -d* to remove the directory number.

Use the command *extension -p* to verify that the directory number has been removed.

## 5.2.3

### CHANGE DIRECTORY NUMBER DATA

#### General

The following directory number data can be altered:

- Common service profile
- Language
- Maximum charging cost
- Secretary category
- Special Purpose extension option
- Backup number
- Hotline number
- Area code

#### Prerequisites

A directory number must be initiated.

#### Execution

Use the command *extension -p* to check the directory number data.

Use the command *extension -c -d* to alter the directory number data.

Use the command *extension -p* to verify that the directory number data are correctly changed.

## 5.2.4

### PRINT THE DIRECTORY DATA

Use the command *extension -p* to obtain a printout.

## 5.3

### EXTRA DIRECTORY NUMBER

This section is only valid for Mitel 6900/6800/6700 SIP terminals.

**Note:** It is not possible to use EDN/SCA/Intercom feature together with the multiterminal/forking feature.

**Note:** ODN holding the EDN/intercom key is not allowed to use the multiterminal/forking feature.

## 5.3.1

### INITIATE AN EXTRA DIRECTORY NUMBER

#### General

A new extra directory number is initiated by assigning to it a common service profile, and other categories, same as for directory number, and the LIM where all those data will be stored.

Several extra directory numbers can be initiated simultaneously.

#### **Prerequisites**

A common service profile must be initiated. A SIP extension with an own directory number shall exist.

#### **Execution**

The same initiation as for Directory number, with the following additions:

Use the `ip_extension -i` command to assign an extension type to the directory number.

Use the command `extension_key -i` to assign the extra directory number to a specific line or key, and to a main directory number.

Use the command `extension_key -p` to verify the extra directory number key and line data.

### 5.3.2

## REMOVE AN EXTRA DIRECTORY NUMBER

#### **General**

It is not possible to remove a generic extension directory number when it has a terminal associated. This is also true for EDNs.

#### **Prerequisites**

An extra directory number must be initiated.

#### **Execution**

Use the command `extension -p` to check that the extra directory number exists.

Use the command `extension_key -e -d --line-dir` or `--function EDN` to remove the extra directory number.

Use the command `ip_extension -e` to remove the extension type association.

Use the command `extension -e -d` to remove the extra directory number.

Use the command `extension -p` to verify that the extra directory number has been removed.

### 5.3.3

## ALTER EXTRA DIRECTORY NUMBER DATA

#### **General**

The extra directory number data that can be altered is the same as for directory number.

#### **Prerequisites**

An extra directory number must be initiated.

#### **Execution**

Use the command `extension -p` to check the extra directory number data.

Use the command `extension -c -d` to alter the extra directory number data.

Use the command `extension -p` to verify that the extra directory number data are correctly changed.

### 5.3.4

## PRINT THE DIRECTORY DATA

Use the command `extension -p` to obtain a printout.

## 5.4

## SHARED CALL APPEARANCE

This section is only valid for Mitel 6900/6800/6700 SIP terminals.

**Note:** It is not possible to use EDN/SCA/Intercom feature together with the multiterminal/forking feature.

**Note:** ODN holding the EDN/intercom key is not allowed to use the multiterminal/forking feature.

### 5.4.1

### INITIATE SHARED CALL APPEARANCE

#### General

A Shared Call Appearance configuration, or Shared Line, is initiated by assigning to its directory number a common service profile, other categories, the same as for directory number, and the LIM where all those data will be stored.

Several SCAkeys/lines cannot be initiated simultaneously.

There are two configurations; with (called SCABR) and without bridging (called SCA), i.e. conference option.

#### Prerequisites

A common service profile must be initiated.

#### Execution

Use the command *extension\_profile -p* to check the common service profile.

Use the command *extension -i -d* to initiate the directory number.

Use the command *extension -p* to verify the directory number data.

Use the command *ip\_extension -i* to assign extension type to the directory number.

Use the command *extension\_key -i -d* with *--line-dir* or with *--function SCA* or *SCABR* to initiate the SCA or SCABR key and line.

If the shared number is the own directory number of a user. This number shall be initiated as SCA on line 1 as the first step. Then other terminals that shall share the number can be initiated with the SCA feature on line keys or soft keys

Use the command *extension\_key -p* to verify the SCA/SCABR data.

Repeat the initiation execution for the other 'members' of the SCA 'group'.

### 5.4.2

### REMOVE SHARED CALL APPEARANCE

#### General

It is not possible to remove a generic extension directory number when it has an extension type assigned (e.g. *ip\_extension* entered).

#### Prerequisites

An SCA line or key must be initiated.

No feature keys or other service associations should exist on the extensions that are to be removed.

#### Execution

Use the command *extension\_key -p* to check that the SCA key/line exists.

Use the command *extension\_key -e -d* to remove the SCA key/line.

Use the command *extension\_key -p* to verify that the SCA key/line has been removed.

### 5.4.3

## ALTER SHARED CALL APPEARANCE DATA

### General

The SCA data cannot be altered: it has to be removed and initiated again, with wanted changes, for example to move the SCA to another key/line.

### Prerequisites

An SCA key/line must be initiated.

### Execution

Use the command *extension\_key -p* to check the SCA data.

Use the command *extension\_key -e -d* to remove the SCA data.

Use the command *extension\_key -i -d --line-dir* or *--function SCA/SCABR* to initiate the SCA data again, with the wanted changes.

Use the command *extension\_key -p* to verify that the SCA data are correctly changed.

### 5.4.4

## PRINT THE SHARED CALL APPEARANCE DATA

Use the command *extension\_key -p* to obtain a printout.

Or use the command *extension\_key -p* with *--line-dir* to obtain a 'filtered' printout of only the SCA related data.

## 5.5

## PROCEDURE EXECUTION

### 5.5.1

## EXECUTION OF A PROCEDURE

### General

A procedure can be executed from an I/O terminal as if it was dialed from a generic extension telephone set.

### Prerequisites

A generic extension must be initiated.

### Execution

Use the command *extension -p* to check the directory number data.

Use the command *extension\_procedure* to execute a procedure.

Use the command *resource\_status -p* to verify the procedure execution.

**Note:** Just in case the procedure done by the extension command is the one for the Choice of language feature, use the command *extension -p* instead to verify the result.

## 5.6 KEY DATA MANAGEMENT

### 5.6.1 INITIATE KEY DATA

#### General

For more information, see 1.4 Key Handling on page 7.

Programmable keys for generic extensions can be programmed as dial-by-function keys (TNS), as monitoring keys (MNS), or as PEN keys.

#### Prerequisites

The key selected to host the TNS, MNS, or PEN key functionality must be available. It should **not**:

- be reserved for other functionality through the configuration file
- have been previously initiated as MNS or PEN (otherwise, it should be first removed). If the function to be programmed is MNS, the MNS directory number is needed. In case the function to be programmed is TNS, the digits related to TNS should be entered. If the function to be entered is PEN, the Personal directory number is needed.

If the function to be programmed is MNS, the MNS directory number is needed. In the case the function to be programmed is TNS, the digits related with the TNS should be entered.

#### Execution

Use the command *extension\_key -p* to print out the existing keys for the directory number and check if there are any free key to be used.

Use the command *extension\_key -i* to initiate the key data on the specified key.

Use the command *extension\_key -p* to verify the result.

### 5.6.2 REMOVE KEY DATA

#### General

It is possible to remove key data information regarding TNS, MNS, or PEN keys for a directory number. When the key information is removed, the key function is set to TNS without associated digits.

#### Prerequisites

-

#### Execution

Use the command *extension\_key -p* to order a printout of the key data for a given directory number.

Use the command *extension\_key -e* to erase the key data on the given directory number.

Use the command *extension\_key -p* to verify the result.

### 5.6.3 PRINT KEY DATA

Use the command *extension\_key -p* to obtain a printout.

## 5.7

## ALIAS NUMBER FOR GENERIC EXTENSION

### 5.7.1

### INITIATE ALIAS NUMBER

#### General

A generic extension can be configured from I/O terminal, to have an alias number, or several alias numbers. The function requires a dummy group number which will act as alias number (displayed to other parties involved in a call). The group can be shared by several extensions, or be dedicated to one extension. One extension can also have several aliases (groups), up to 4 different.

#### Prerequisites

A generic extension must have been initiated. It is intended to have an alias number, i.e. not show its real directory number to other parties.

#### Execution

- The number presentation class of service for the extension must be appropriately set:  
Use the command ***extension\_profile -c*** with a CSP that has `--ext-npres d7=1`.
- There are two options for the dummy groups used as alias number: either a CTI/ACD-group or a hunt group can be used. The CTI group has the advantage that you do not need to initiate the extension as a group member.  
  
Alternative 1 ("Individual alias"): Use the command ***ACGRI*** to initiate the dummy CTI group. The settings of SERV D4 shall be 1 or 2, for example:  
`ACGRI:GRP=<group_number>,SERV=100200,...`
- Alternative 2 ("Group alias"): Use the command ***GHGRI*** to initiate the dummy hunt group. The settings could be for example:  
`GHGRI:GRP=<group_number>,SERV=1000000,...`  
Initiate the extension as hunt group member with ***GHGMI***.
- Finally, to activate the alias number for the extension, use the command:  
***extension\_procedure --dir <extension number> --proc "\*89\*<group number>#"***  
The `*89*`-procedure can also be manually initiated from the extension.
- Use the equivalent print commands, or the command ***resource\_status -p*** to verify the alias number settings. Now the extension shall be ready to use the alias number when making or receiving calls.

### 5.7.2

### REMOVE ALIAS NUMBER

#### General

A generic extension can be configured from I/O terminal, to have an alias number, or several alias numbers. This can be removed.

#### Prerequisites

A generic extension using alias number must have been initiated. It shall no longer have alias number.

#### Execution

- To deactivate the alias number for the extension, use the command:

**extension\_procedure --dir <extension number> --proc "#89\*<group number>#"**

The #89\*-procedure can also be manually initiated from the extension.

- There are two options for the dummy groups used as alias number: either a CTI/ACD-group or a hunt group can be used. Remove the groups they shall not be used any more.

Alternative 1: Use the command **ACGRE** to remove the dummy CTI group.

Alternative 2: Use the command **GHGME** to remove the hunt group member, and then the command **GHGRE** to remove the dummy hunt group.

- The number presentation class of service for the extension should be changed: Use the command **extension\_profile -c** with a CSP that has --ext-npres d7=0.
- Use the equivalent print commands, or the command **resource\_status -p** to verify that the alias number settings have been removed. Now the extension shall use its real directory number as displayed number.

## 5.8

## SINGLE NUMBER INDICATION FOR PARALLEL RINGING

The feature Single Number Indication is activated when *parallel ringing* is initiated. It ensures that the B-extension will always see the same directory number independently from which telephone the A-extension makes a call.

**Note:** Single Number Indication has some limitations in certain private network services, since only one number can be conveyed in the network. For example, the features Diversion, Callback, and Call Information Logging will use the directory number, not the additional directory number.

### 5.8.1

### ADDITIONAL DATA HANDLING

#### General

The additional number, by default, is the same as the directory number of the extension. When a parallel ringing list is initiated the additional number is automatically set for a generic extension. No handling is required by the user.

## 6

## TERMINATION

If directory numbers have been added or removed, inform the department (person) responsible for directory information.

A dump to backup media should be performed if any configuration data have been altered.