Automatic Network Call Distribution, NC

OPERATIONAL INSTRUCTION.

Mitel®

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TRADEMARKS

1 GENERAL

Automatic Network Call Distribution (ANCD) provides possibilities to intelligently distribute calls to ACD groups located in the same or different nodes of an ANCD network. The ANCD network consists of an MX-ONE ISDN or H.323 network, or parts of an MX-ONE ISDN/H.323 network. ANCD is a powerful complement to the basic ACD feature.

All MX-ONE nodes comprising an ANCD network must be running MX-ONE version 3.1 or later. Inter-operability with ASB 501 04 or MX-ONE 3.0 is not supported.

The ANCD makes it possible to distribute incoming calls to different ACD groups based on the status of the ACD groups that are handling the required services. The involved ACD groups can be located in the same or different nodes. The distribution functionality can be used to distribute calls to the ACD group which provides the best answer capability for the moment, and it can also be used to redistribute calls from one ACD group to another at overflow situations. It includes additional functions like:

- Multi layer architecture
- Predictive Routing
- Conditional Routing
- Intelligent Networking of Multi site MX-ONE ACD system
- Open and close gate of ANCD traffic
- One or two way participation

2 PREREQUISITES

All ACD data assigned according to the operational directions for *AUTOMATIC CALL DISTRIBUTION, AC*.

3 AIDS

I/O-terminal.

4 REFERENCES

In these operational directions references are made to the following documents:

Operational directions:

Automatic Call Distribution, AC

Information system, IC

Number Analysis, NA

Name Identity, NI

Command descriptions:

Automatic Call Distribution, AC

Automatic Network Call Distribution, NC

Information system, IC

Number Analysis, NA

Name Identity, NI

Parameter descriptions:

Automatic Call Distribution, AC

Automatic Network Call Distribution, NC

Information system, IC

Number Analysis, NA

Name Identity, NI

5 PROCEDURE

5.1 PROCEDURES FOR INITIATION OF THE ANCD FUNCTIONALITY

- Initiation of an ANCD node identity and an information channel.
- Initiation of the ANCD communication between nodes.
- Initiation of an ANCD group and category data.
- Initiation of a satellite ANCD/ACD group.
- Initiation of an ANCD group member.
- Initiation of traffic distribution.

5.2 PROCEDURES FOR REMOVAL OF THE ANCD FUNCTIONALITY

- Removal of traffic distribution.
- Removal of an ANCD group member.
- Removal of a satellite group.
- Removal of an ANCD group.
- Removal of the communication between nodes.
- Removal of a node and an information channel.

6 EXECUTION

The order of the headings that are explained, is a recommended way to initiate an ANCD network. The initiation of ANCD and ACD groups has to be initiated level by level. Begin with the lowest level. Depending on the amount of levels, it is necessary to perform section ANCD Group and ahead a couple of times until all levels are initiated.

6.1 ANCD NODE IDENTITY AND INFORMATION CHANNEL

6.1.1 INITIATION OF AN ANCD NODE IDENTITY AND AN INFORMATION CHANNEL

General

An ANCD node identity will be initiated in the ANCD network, where the ANCD groups and ACD groups are located. One node identity can only be initiated per exchange.

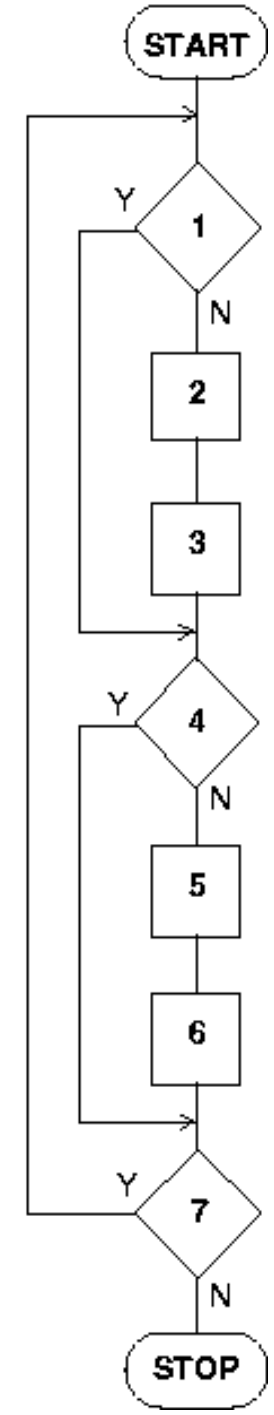
The information channel handles the communication between exchanges within the ANCD network. The information channel can be initiated to any TCP/IP port.

Prerequisites

Information computer function must be initiated with proper parameters (LPORT should be used when the information computer individual is meant for superior ANCD node and RPORT, when it is meant for satellite ANCD/ACD node). See the command description for Information Systems, IC.

Execution

Table 1

		Measure/Question	Observation/Comment
Flow 			
	1	Is the node number already defined? Use command *NCNOP*.	
	2	Define a node number. Use command *NCNOI*.	
	3	Verify that the node number is defined. Use command *NCNOP*.	
	4	Is the information channel already initiated? Use command *NCICP*.	Program units and ILNP have to be loaded.
	5	Initiate an information channel. Use command *NCICI*.	
	6	Verify that the information channel is defined. Use command *NCICP*.	Node data defined (*)
	7	More nodes to define?	

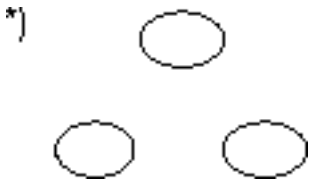


Figure 1:

6.2 ANCD COMMUNICATION

6.2.1 INITIATION OF THE ANCD COMMUNICATION BETWEEN NODES

General

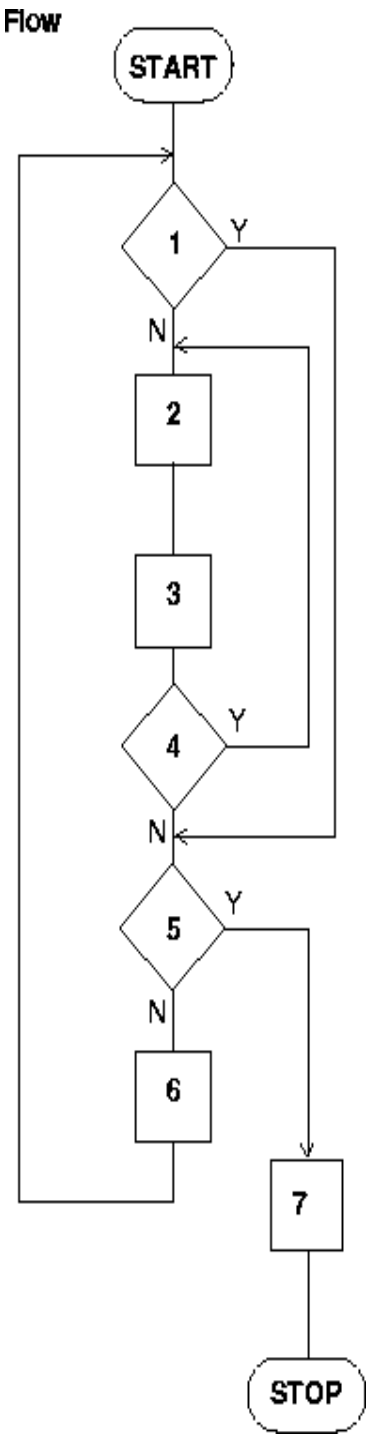
The communication channel will be initiated for the node. It is possible to define several choices to establish an information channel from one node to another node within the ANCD network.

Prerequisites

Information computer individual (IFCIND) and a node must be initiated.

Execution

Table 2

		Measure/Question	Observation/Comment
Flow 			
	1	Is communication for the node initiated? Use command *NCCOP*.	The information computer indivdual(s) and the node must be initiated.
	2	Initiate communication between own ANCD node and other ANCD/Satellite nodes. Use command *NCCOI*.	It is possible to define several choices to establish an information channel from one node to another in the ANCD network.
	3	Verify that the communication is initiated. Use command *NCCOP*.	
	4	Are there any more ANCD/Satellite nodes to initiate communication with?	*NCCOI* has to be executed for all remote nodes that own node has to communicate with.
	5	Is command *NCCOI* executed in all ANCD/Satellite nodes?	
	6	Initiate communication in other node.	*NCCOI* has to be executed in all nodes, to establish a bothway communication.
	7	Verify communication. Use command *NCCTI*.	Communication initiated (IFCIND). *)

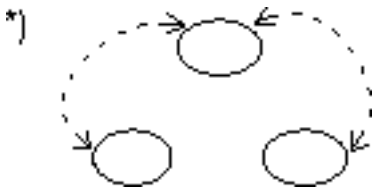


Figure 2:

6.3 ANCD GROUP

6.3.1 INITIATION OF AN ANCD GROUP AND CATEGORY DATA

General

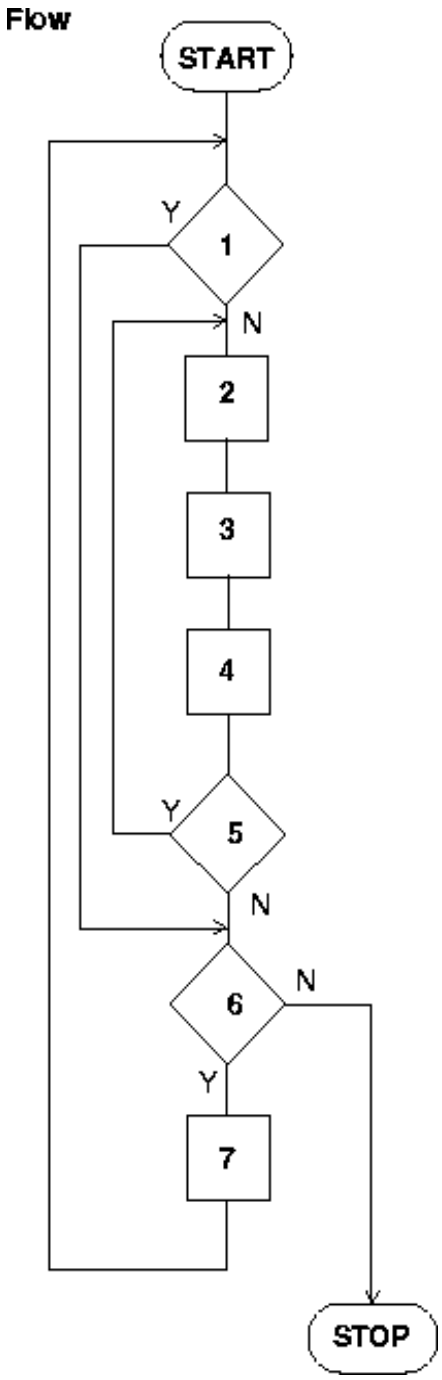
The ANCD group will be initiated for the ANCD network. Initiate all of the ANCD groups.

Prerequisites

The number that is initiated as ANCD group number must be a free directory number within the extension number series.

Execution

Table 3

		Measure/Question	Observation/Comment
Flow 			
	1	Are all ANCD groups in the node initiated? Use command *NCGRP*.	
	2	ANCD group number has to be a free directory number within the extension number series. Use the command *number_print*.	See the command description for *NUMBER ANALYSIS, NA*.
	3	Initiate ANCD group. Use command *NCGRI*.	
	4	Verify that the stated ANCD group is initiated. Use command *NCGRP*.	ANCD groups initiated. *)
	5	Are there any more ANCD groups to initiate in the node?	
	6	Are there any more ANCD groups to initiate in other nodes.	
	7	Initiate ANCD groups in next node.	

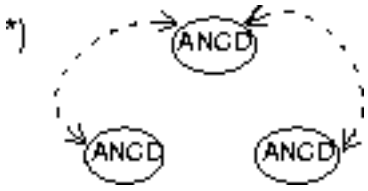


Figure 3:

6.3.2 ALTERATION OF AN ANCD GROUP CATEGORY DATA

General

The categories of the ANCD group can be changed without removing the whole ANCD group.

Prerequisites

-

Execution

Key the command *NCGRC* to alter the possible categories .

Key the command *NCGRP* to verify that the alteration has been executed .

6.4 SATELLITE GROUP

6.4.1 INITIATION OF A SATELLITE ANCD/ACD GROUP

General

The ANCD/ACD group will be initiated as a satellite group. Begin with the lowest level and then after this execution do the other headings explained below.

Prerequisites

The ANCD/ACD groups must be initiated.

Execution

Table 4

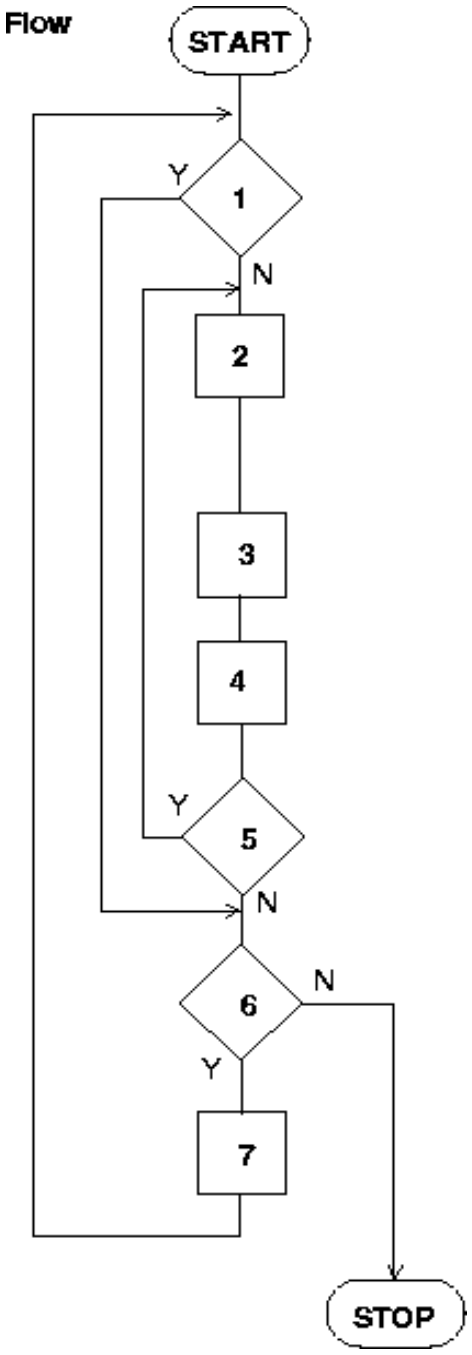
		Measure/Question	Observation/Comment
Flow 			
	1	Are all Satellite groups in the node initiated? Use command *NCSGP*.	
	2	Satellite group number has to be either an ACD group number or an ANCD group number. Use command *NCGRP*/*ACGCP* to verify.	If it is an ACD group number see operational directions for *AUTOMATIC CALL DISTRIBUTION, AC* .
	3	Initiate Satellite group. Use command *NCSGI*.	
	4	Verify that the stated satellite group is initiated. Use command *NCSGP*.	SAT groups initiated. *)
	5	Are there any more Satellite groups to initiate in the node?	
	6	Are there any more Satellite groups to initiate in other nodes.	
	7	Initiate Satellite groups in next node.	

Figure 4:

6.4.2 ALTERATION OF A SATELLITE GROUP DATA

General

The parameters of the ANCD/ACD group can be changed without removing the whole satellite group.

Prerequisites

-

Execution

Key the command *NCSGC* to alter the possible parameters .

Key the command *NCGRP* to verify that the alteration has been executed .

6.5 ANCD GROUP MEMBERS (SATELLITE ANCD/ACD GROUPS)

6.5.1 INITIATION OF AN ANCD GROUP MEMBER

General

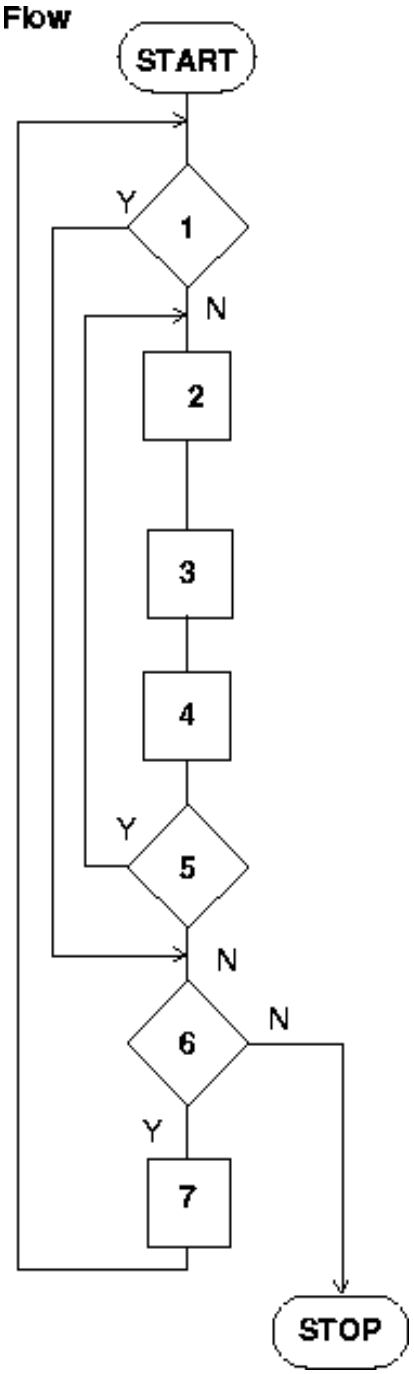
The members will be initiated for the ANCD group. Begin with the lowest level and then after this execution do the other headings explained below.

Prerequisites

The ANCD group must be initiated. Directory numbers that are to be initiated as members in the group must be initiated as satellite groups.

Execution

Table 5

		Measure/Question	Observation/Comment
Flow 			
	1	Are all members of the ANCD group initiated? Use command *NCGMP*.	
	2	ANCD group has to be initiated and the directory numbers that are to be members have to be initiated as satellite groups. Use command *NCSGP*/*ACGCP*.	If it is an ACD group number see operational directions for *AUTOMATIC CALL DISTRIBUTION, AC*.
	3	Initiate ANCD group member. Use command *NCGMI*.	
	4	Verify that the stated member is initiated. Use command *NCGMP*.	Members assigned to the ANCD group. *)
	5	Are there any more members to assign to the ANCD group?	
	6	Are there any more members to assign to any other ANCD group? (In the same or another node.)	
	7	Assign members to next ANCD group.	

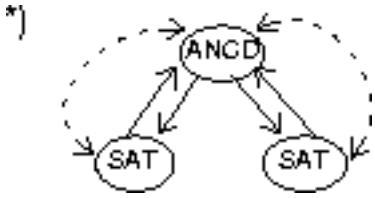


Figure 5:

6.5.2 ALTERATION OF AN ANCD GROUP MEMBER DATA

General

The group members string can be changed to different characters.

Prerequisites

-

Execution

Key the command *NCGMC* to alter the string for ANCD group member(s) .

Key the command *NCGMP* to verify that the alteration has been executed .

6.6 TRAFFIC DISTRIBUTION

6.6.1 INITIATION OF TRAFFIC DISTRIBUTION

General

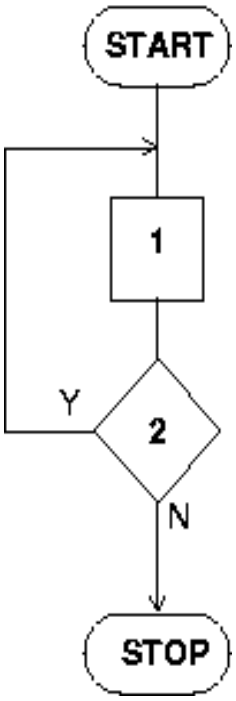
The traffic distribution will be initiated for the ANCD network. Every node has to be initiated for traffic distribution.

Prerequisites

ANCD network must be initiated.

Execution

Table 6

		Measure/Question	Observation/Comment
Flow 			
	1	Initiate traffic distribution from an ANCD group to its member(s). Use the command initiated*NCGTI*.	ANCD network has to be initiated.
	2	Are there any more ANCD groups that need to start the traffic distribution? (In the same or another node).	

6.7 REMOVAL OF TRAFFIC DISTRIBUTION

General

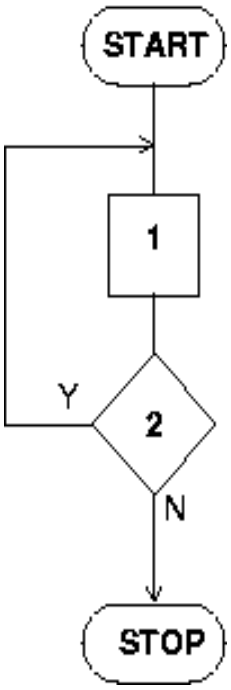
The traffic distribution will be removed.

Prerequisites

-

Execution

Table 7

		Measure/Question	Observation/Comment
Flow 			
	1	Stop traffic distribution from ANCD group to its member(s). Use command *NCGTE*.	Traffic distribution to all affected Satellite groups, has to be stopped.
	2	Are there any more ANCD groups that need to stop the traffic distribution? (In the same or another node).	

6.8 REMOVAL OF AN ANCD GROUP MEMBER

General

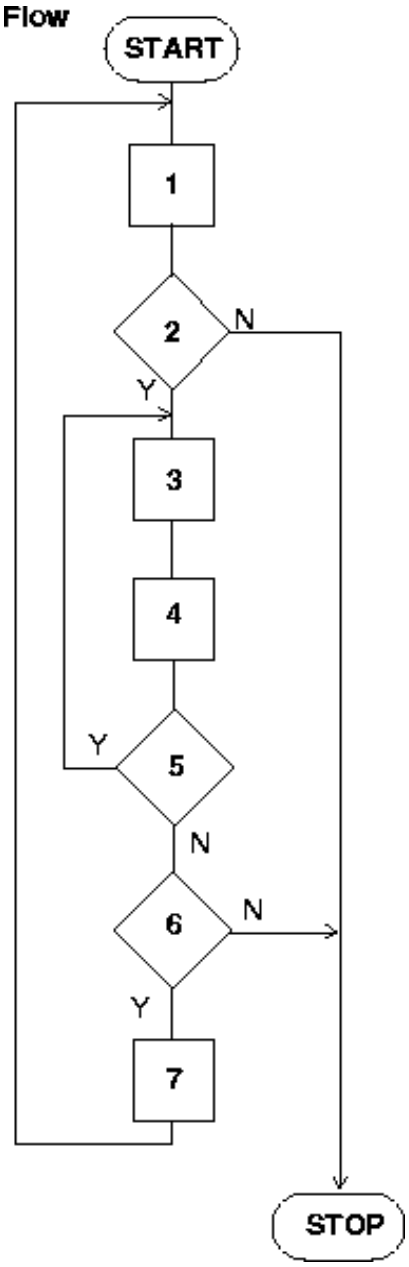
An ANCD group member will be removed.

Prerequisites

-

Execution

Table 8

		Measure/Question	Observation/Comment
Flow 			
	1	Print out ANCD group members. Use command *NCGMP*.	*)
	2	Are there any members to be removed?	
	3	Remove an ANCD group member. Use command *NCGME*.	
	4	Verify that the stated member is removed. Use command *NCGMP*.	Satellite group removed as ANCD member.
	5	Are there any more members from the ANCD group to be removed?	**)
	6	Are there members from any other ANCD group to be removed? (In the same or another node).	
	7	Remove members from next ANCD group.	

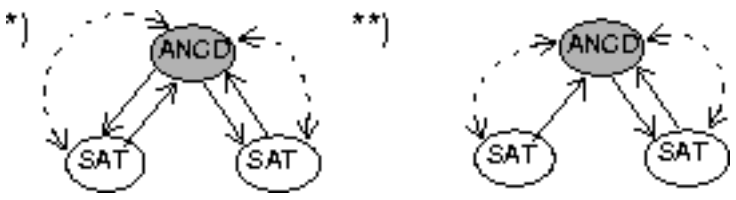


Figure 6:

6.9 REMOVAL OF A SATELLITE GROUP

General

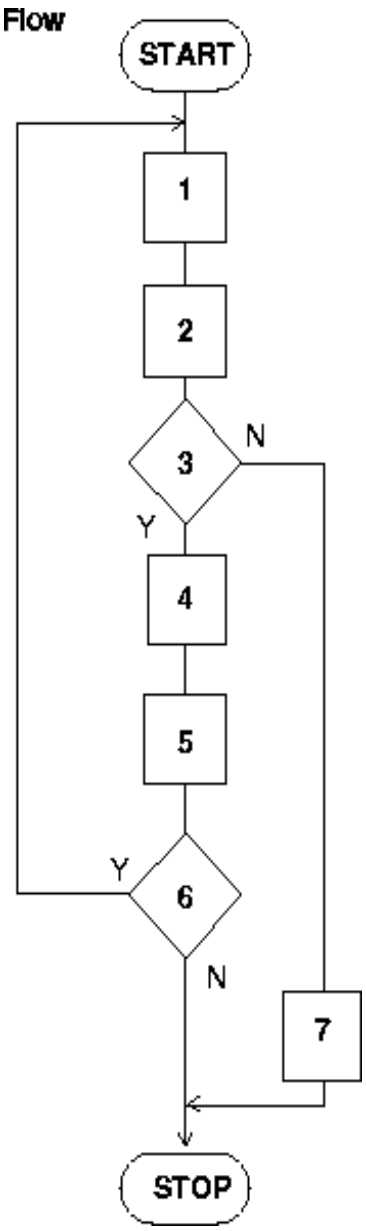
A satellite group will be removed.

Prerequisites

If the satellite group is already defined to the superior ANCD group, it has to be terminated as its member.

Execution

Table 9

		Measure/Question	Observation/Comment
Flow 			
	1	Print out the Satellite group to find out the superior of the group. Use command *NCSGP*.	*)
	2	Print members assigned to the superior ANCD group. Use command *NCGMP*.	Satellite group removed as ANCD member. **)
	3	Is the satellite group removed as member of the superior ANCD group?	
	4	Remove satellite group. Use command *NCSGE*.	
	5	Verify that the stated Satellite group is removed. Use command *NCSGP*.	Satellite group removed. ***)
	6	Are there any more Satellite groups to remove in the same or another node?	
	7	See section 6.8 Removal of an ANCD group member on page 20Removal of an ANCD group member.	

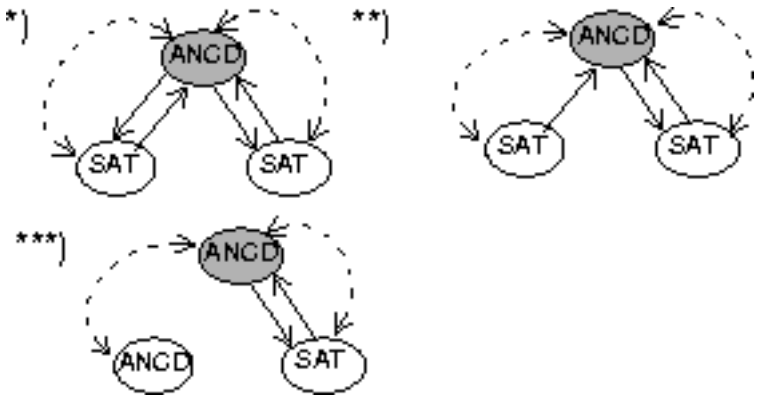


Figure 7:

6.10 REMOVAL OF AN ANCD GROUP

General

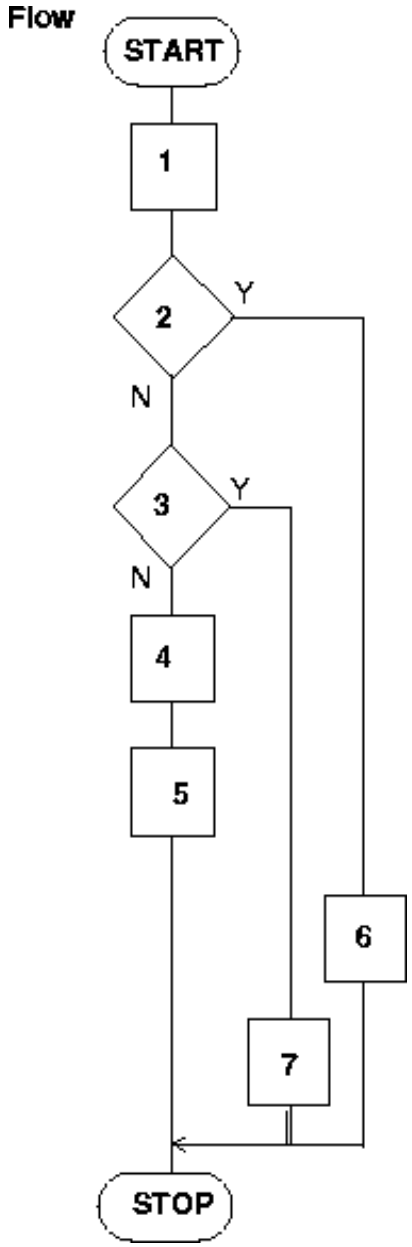
An ANCD group will be removed.

Prerequisites

If satellite members are initiated to the ANCD group, they have to be terminated as its members.

Execution

Table 10

		Measure/Question	Observation/Comment
Flow 			
	1	Print members assigned to the ANCD group. Use command *NCGMP*.	*)
	2	Are there any ANCD members assigned to the group?	
	3	Any satellite groups to remove?	All Satellite groups are removed as members of the ANCD group. **)
	4	Remove ANCD group. Use command *NCGRE*.	All Satellite groups removed. ***)
	5	Verify that the stated ANCD group is removed. Use command *NCGRP*.	ANCD group removed. ****)
	6	See section 6.8 Removal of an ANCD group member on page 20Removal of an ANCD group member.	
	7	See section 6.9 Removal of a satellite group on page 22Removal of a satellite group.	

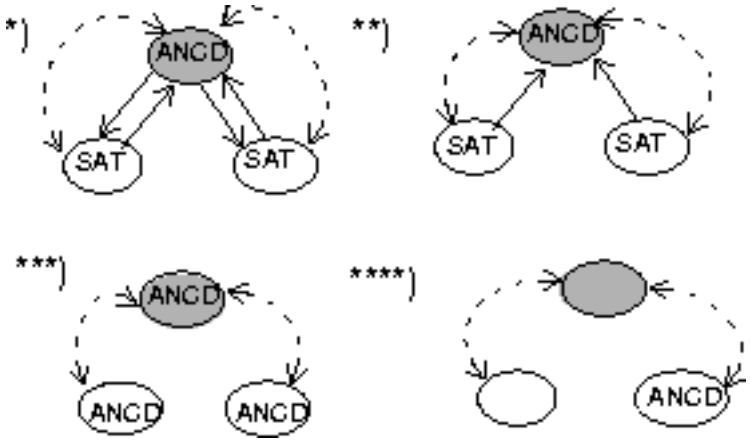


Figure 8:

6.11 REMOVAL OF THE COMMUNICATION BETWEEN NODES

General

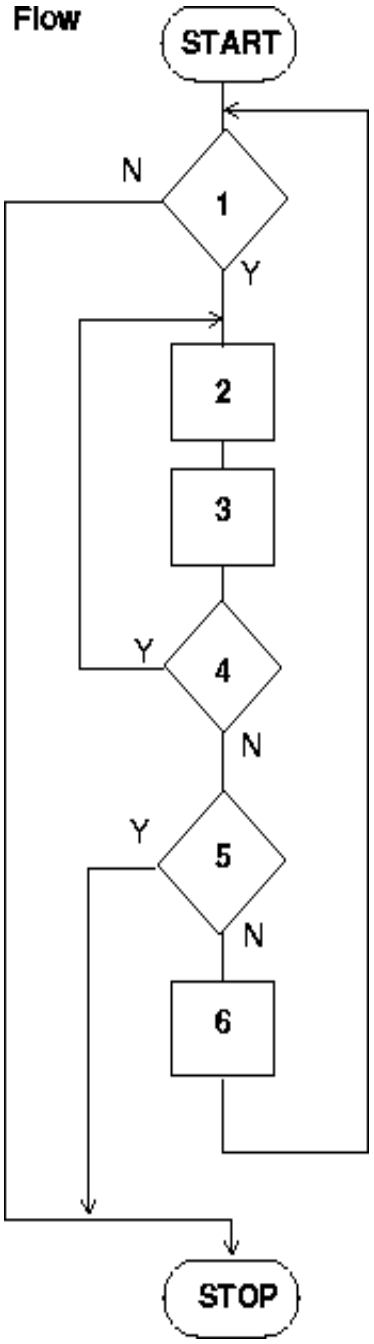
The ANCD communication will be removed.

Prerequisites

Information computer individuals have been assigned to ANCD communication.

Execution

Table 11

		Measure/Question	Observation/Comment
Flow 			
	1	Is an information computer individual assigned to the ANCD communication choice? Use command *NCCOP*.	Communication initiated (IFCIND). *)
	2	Remove communication between own ANCD node and other ANCD/Satellite nodes. Use command *NCCOE*.	
	3	Verify that the stated ANCD communication is removed. Use command *NCCOP*.	**)
	4	Are there any more ANCD/Satellite nodes to remove communication to?	
	5	Is command *NCCOE* executed in all ANCD/Satellite nodes?	*NCCOE* has to be executed in all nodes.
	6	Remove the ANCD communication choice in next node.	Communication channel between two nodes is removed. ***)

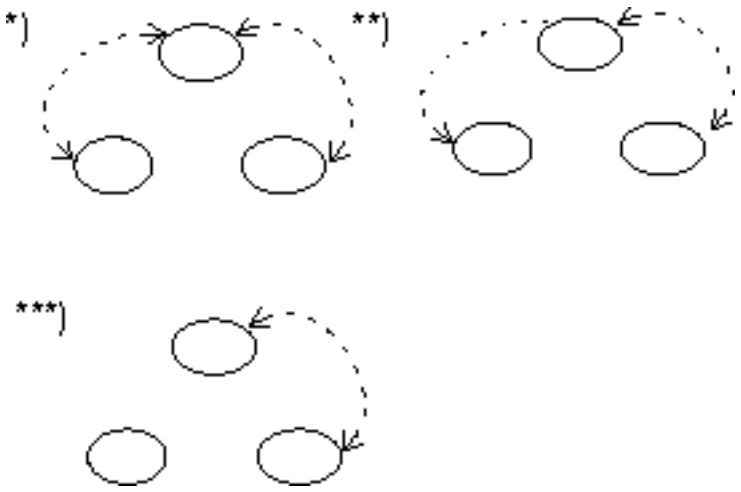


Figure 9:

6.12 REMOVAL OF A NODE AND AN INFORMATION CHANNEL

General

An ANCD node will be removed and the ANCD information channel is removed from the system.

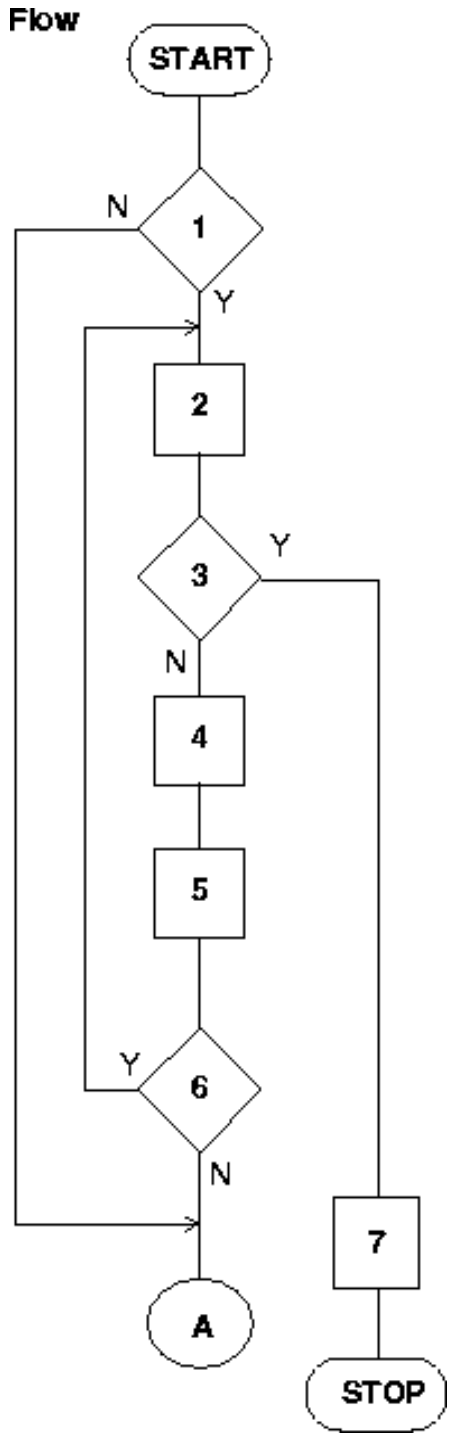
Prerequisites

It is not allowed to remove a node if ANCD groups, satellite ANCD groups and satellite ACD groups are initiated. It is not allowed to remove a node if any ANCD communication is initiated.

All data initiated on the information computer individual must be terminated. It is not allowed to remove an information computer individual if any ANCD communication is initiated.

Execution

Table 12

		Measure/Question	Observation/Comment
Flow 			
	1	Is there any ANCD information channel to be removed?	
	2	Print IFCIND. Use command *NCICP*.	
	3	Is GICI communication initiated? Use command *NCCOP*.	
	4	Removal of an ANCD information channel. Use command *NCICE*.	ANCD communication has to be removed.
	5	Verify that the ANCD information channel is removed. Use command *NCICP*.	
	6	More nodes to change?	
	7	See section 6.11 Removal of the communication between nodes on page 25Removal of the communication between nodes.	

Execution

Table 13

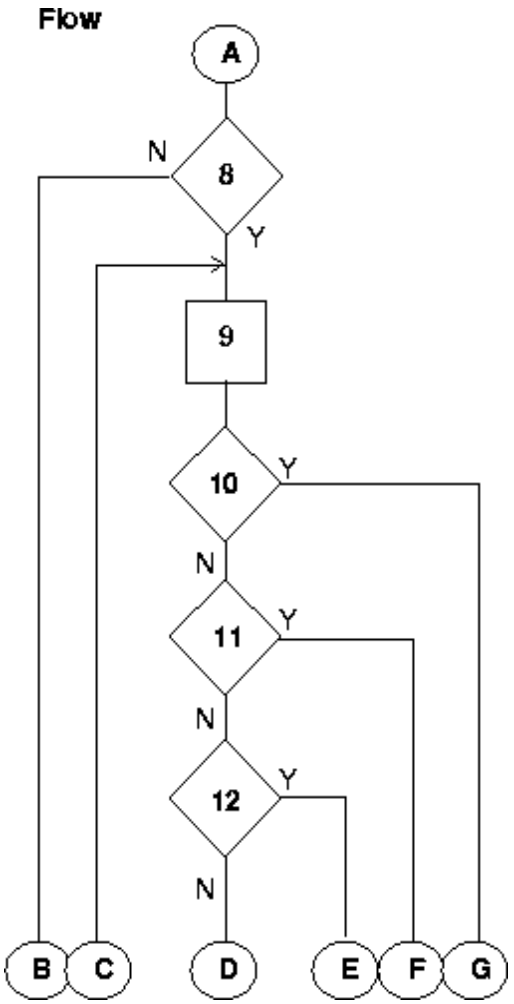
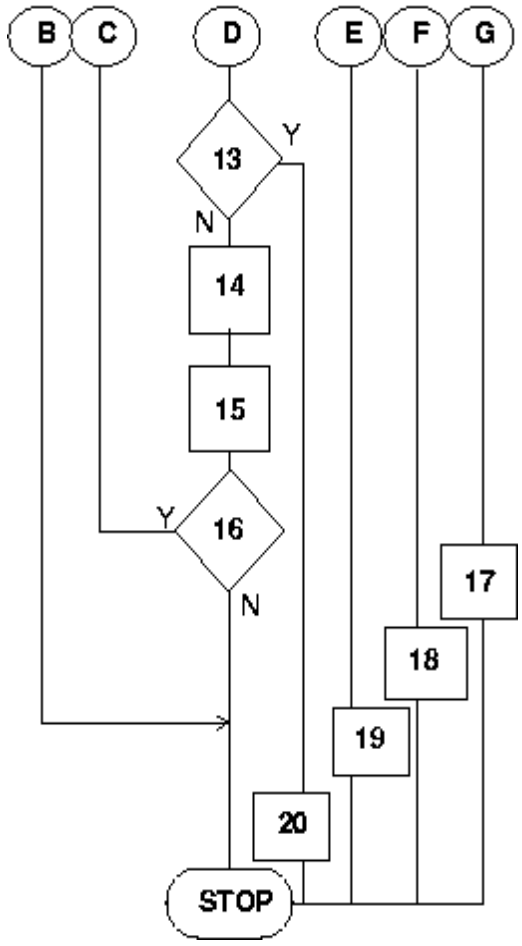
		Measure/Question	Observation/Comment
Flow 			
	8	Are there any ANCD nodes to be removed?	
	9	Print node number. Use command *NCNOP*.	
	10	Is any Satellite group initiated? Use command *NCSGP*.	All Satellite groups have to be removed.
	11	Is any ANCD group initiated? Use command *NCGRP*.	All ANCD groups have to be removed.
	12	Is GICI communication initiated? Use command *NCCOP*.	ANCD communication have to be removed.

Table 14

		Measure/Question	Observation/Comment
Flow 			
	13	Is an ANCD information channel initiated? Use command *NCICP*.	
	14	Removal of an ANCD node. Use command *NCNOE*.	
	15	Verify that the ANCD node is removed. Use command *NCNOP*.	
	16	More nodes to change?	
	17	See section 6.9 Removal of a satellite group on page 22Removal of a satellite group.	
	18	See section 6.10 Removal of an ANCD group on page 23Removal of an ANCD GROUP.	
	19	See section 6.11 Removal of the communication between nodes on page 25Removal of the communication between nodes.	
	20	See section 6.12 Removal of a node and an information channel on page 27Removal of a node and an information channel.	

7 EXAMPLE

7.1 GENERAL

The example here illustrates the initiation of an ANCD group. Two single LIM exchanges have been considered. A pictorial representation is also given.

The superior ANCD group is initiated in NODE1 with two satellite groups as members. One satellite ACD group is initiated in NODE1 and a second satellite ANCD group is initiated in NODE 2. Calls to the superior ANCD group will be distributed to the best available satellite group and calls to the satellite groups (in case if the agents are not available) will be overflowed to the superior ANCD group. This example only gives the initiation of ANCD group, for ACD groups see operational directions for *AUTOMATIC CALL DISTRIBUTION, AC*.

7.2 PREREQUISITES

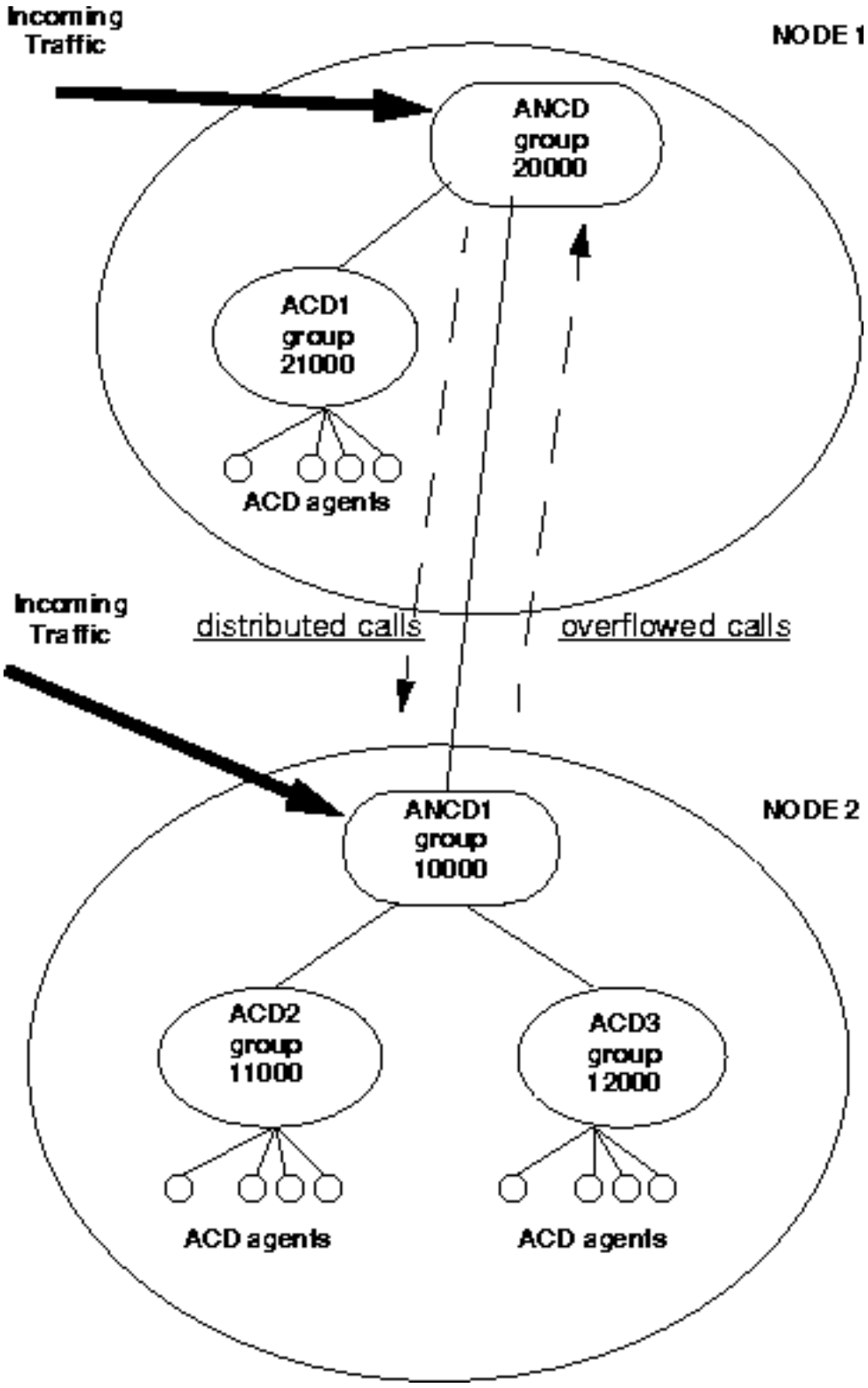


Figure 10: Example of an ANCD network configuration with ANCD groups and ACD groups

- ANCD GrpNumber: 20000

- ANCD1 GrpNumber: 10000
- ACD1 GrpNumber: 21000
- ACD2 GrpNumber: 11000
- ACD3 GrpNumber: 12000

7.3 EXECUTION

7.3.1 COMMAND INITIATIONS ON NODE1

Please see operational directions *AUTOMATIC CALL DISTRIBUTION, AC* for ACD group initiation.

01 and 02 are the external destination codes for the routes defined from NODE 1and NODE 2 respectively, to the other node.

Initiation of number series for ACD and ANCD groups

number_initiate -numbertype ex -number 20000,21000

Initiation of an ANCD node identity and an information channel

NCNOI:NODE=1;

NCICI:IFCIND=10;

Initiation of the ANCD communication between nodes

NCCOI:NODE=2,CHO=1,IFCIND=10;

Initiation of an ANCD group and category data.

NCGRI:ANCD=20000,LIM=1,SERV=1,TRAF=9,SEL=0,MAXTIM=120;

Initiation of a satellite ANCD/ACD group

NCSGI:SAT=21000,ANCD=20000,INFTYP =P;

Initiation of an ANCD group member

NCGMI:ANCD=20000,SAT=21000;

NCGMI:ANCD=20000,SAT=10000,NODE=2,DISTNO=0110000;

Initiation of traffic distribution

NCGTI:ANCD=20000,SAT=21000;

NCGTI:ANCD=20000,SAT=10000;

7.3.2 COMMAND INITIATIONS ON NODE2

Initiation of number series for ACD and ANCD groups

number_initiate -numbertype ex -number 10000,11000,12000

Initiation of an ANCD node identity and an information channel

NCNOI:NODE=2;

NCICI:IFCIND=10;

Initiation of the ANCD communication between nodes

NCCOI:NODE=1,CHO=1,IFCIND=10;

Initiation of an ANCD group and category data.

NCGRI:ANCD=10000,LIM=1,SERV=1,TRAF=9,SEL=0,CUST=1,MAXTIM=120;

Initiation of a satellite ANCD/ACD group

NCSGI:SAT=11000,ANCD=10000,INFTYP =E;

NCSGI:SAT=12000,ANCD=10000,INFTYP =E;

NCSGI:SAT=10000,ANCD=20000,NODE=1,OFLNO=0220000,INFTYP =P,OFLTIM=60;

Initiation of an ANCD group member

NCGMI:ANCD=10000,SAT=11000;

NCGMI:ANCD=10000,SAT=12000;

Initiation of traffic distribution

NCGTI:ANCD=10000,SAT=11000;

NCGTI:ANCD=10000,SAT=12000;

8 TERMINATION

If exchange data have been altered and no more commands are to be entered, a dump to a backup media shall be performed.