

Critical Release Notice

Publication number: 297-5161-510
Publication release: Standard 12.02

The content of this customer NTP supports the
SN07 (DMS) software release.

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Publication History

September 2004

Standard release 12.02. This issue is valid for software release SN07 (DMS), although no changes have been made for SN07 (DMS) features.

Changes with respect to standard release 12.01 are as follows:

Chapter 2, AIN message tracing tool

Supported messages and parameters, Table 1 amended for CR Q00527425-04

Chapter 5, TSTQuery tool

Supported messages and parameters, Table 17 amended for CR Q00527425-04

Chapter 10, Operational measurements for AIN

10.1 AIN OM group, amended for CR Q00765666.

10.6 Non-AIN SSP-specific maintenance measurements, OM group AIN amended for CR Q00765666.

Critical Release Notice introduced to document

297-5161-510

DMS-100 Family

AIN and LRN-LNP

Maintenance Guide

NA013 Standard 12.01 March 2000

DMS-100 Family

AIN and LRN-LNP

Maintenance Guide

Publication number: 297-5161-510

Product release: NA013

Document release: Standard 12.01

Security: Proprietary

Date: March 2000

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Published in Canada

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Publication history

March 2000

NA013 Standard 12.01 release of this document. Document includes information for NA013 for both AIN and LNP.

October 1999

NA012 Standard 11.02 release of this document. Document includes information for NA012 for both AIN and LNP.

August 1999

NA012 Standard 11.01 release of this document. Document includes information for NA012 for both AIN and LNP.

May 1999

NA011 Standard 10.02 release of this document. Document includes information for NA011 for both AIN and LNP.

February 1999

NA011 Standard 10.01 release of this document. Document includes information for NA011 for both AIN and LNP.

October 1998

NA010 Standard 09.02 release of this document. Document includes information for NA010 for both AIN and LNP.

August 1998

NA010 Preliminary 09.01 release of this document. Document includes information for NA010 for both AIN and LNP.

May 1998

NA009 Standard 08.02 release of this document. Document includes information for NA009 for both AIN and LNP.

November 1997

NA008 Standard 07.01 release of this document. Document is restructured and includes the information from NA007 plus new information for NA008 for both AIN and LNP.

August 1997

NA007 Standard 06.01 release of this document. Document is restructured and includes the information from NA006 plus new information for NA007 for both AIN and LNP.

November 1996

NA006 Standard 05.02 release of this document. Includes editing updates.

August 1996

NA006 Standard 05.01 release of this document. Added AIN510 and AIN511 log reports and made changes to AINTRACE information.

March 1996

NA005 Standard 04.02 release of this document. Made changes to AINTRACE information and TRAVER examples.

December 1995

NA005 Standard 04.01 release of this document. Made changes to TRAVER examples and added log reports AIN 300, 301, 302, 303, 610, 611 and AUD 602, 612, 613.

June 1995

NA004 Standard 03.01 release of this document.

December 1994

NA003 Standard 02.02 release of this document.

October 1994

NA003 Preliminary 02.01 release of this document. Add references to PRI Loop-Around Maintenance, revised AIN related card requirements, changed Response Message Timer Expired application error, and removed sections on AINTCPCI and AINTCPMG commands.

November 1994

BCS36 Standard 01.03 release of this document.

December 1993

BCS36 Standard 01.02 release of this document. Removed information applicable to AIN R0.1 and added information on TSTQUERY tool.

October 1993

BCS36 Preliminary 01.01 rst release of this document.

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About this document

This document describes the maintenance requirements and procedures for the advanced intelligent network (AIN) and Location Routing Number-Local Number Portability (LRN-LNP) implementations on a service switching point (SSP).

When to use this document

This document applies to Service Provider Portability within a rate center. To understand this document, the reader must be familiar with AIN Essentials and AIN Service Enablers functionality.

How to check the version and issue of this document

The version and issue of the document are indicated by numbers, for example, 01.01.

The first two digits indicate the version. The version number increases each time the document is updated to support a new software release. For example, the first release of a document is 01.01. In the next software release cycle, the first release of the same document is 02.01.

The second two digits indicate the issue. The issue number increases each time the document is revised but rereleased in the same software release cycle. For example, the second release of a document in the same software release cycle is 01.02.

To determine which version of this document applies to the software in your office and how documentation for your product is organized, check the release information in *Product Documentation Directory*, NTP 297-8991-001.

References in this document

This release of AIN and LNP-LRN is based on the following requirements:

- *Illinois Number Portability Workshop - Generic Switching and Signaling Requirements for Number Portability*, Issue 1.01, April 3, 1996.
- *Local Number Portability DMS-100/200 Service Switching Point Commercial Specifications*, Version 3c, June 24, 1996.
- *Query on Release Draft Requirements*, Issue 0.4, April 17, 1996.

The following list includes documents that referenced in this book, as well as documents containing related material:

- *Advanced Intelligent Network Essentials Service Implementation Guide*, 297-5161-021
- *Advanced Intelligent Network Service Enablers Service Implementation Guide*, 297-5161-022
- *Basic Administration Procedures*, 297-1001-300
- *Basic Translations Tool Guide*, 297-1001-360
- *C7TU User Guide*, TAM-1001-015
- *Commands Reference Manual*, 297-1001-822
- *DMS-100 Family Guide to Northern Telecom Publications*, 297-1001-001
- *DRAM and EDRAM Guide*, 297-1001-527
- *ISDN PRI Maintenance Guide*, 297-2401-502
- *Location Routing Number - Local Number Portability Service Implementation Guide*, 297-8981-021
- *North American DMS-100 Alarm Clearing and Performance Monitoring Procedures*, 297-8003-543
- *North American DMS-100 Card Replacement Procedures*, 297-8003-547
- *North American DMS-100 Log Reports Reference Manual*, 297-8003-840
- *North American DMS-100 Operational Measurements Reference Manual*, 297-8003-814
- *North American DMS-100 Recovery Procedures*, 297-8003-545
- *North American DMS-100 Routine Maintenance Procedures*, 297-8003-546
- *North American DMS-100 Translations Guide*, 297-8003-350
- *North American DMS-100 Trouble Locating and Clearing Procedures*, 297-8003-544
- *Product Documentation Directory*, 297-8991-001

- *SSP Provisioning Cookbook*, 297-5161-352
- *TOPS LNP User's Guide*, 297-8403-902
- *Trunks Maintenance Guide*, 297-1001-595

What precautionary messages mean

The types of precautionary messages used in NT documents include attention boxes and danger, warning, and caution messages.

An attention box identifies information that is necessary for the proper performance of a procedure or task or the correct interpretation of information or data. Danger, warning, and caution messages indicate possible risks.

Examples of the precautionary messages follow.

ATTENTION Information needed to perform a task

ATTENTION

If the unused DS-3 ports are not de-provisioned before a DS-1/VT Mapper is installed, the DS-1 traffic will not be carried through the DS-1/VT Mapper, even though the DS-1/VT Mapper is properly provisioned.

CAUTION Possibility of service interruption or degradation



CAUTION

Possible loss of service

Before continuing, confirm that you are removing the card from the inactive unit of the peripheral module. Subscriber service will be lost if you remove a card from the active unit.

WARNING Possibility of equipment damage



WARNING

Possibility of equipment damage

Damage to the backplane connector pins
Align the card before seating it, to avoid bending the backplane connector pins. Use light thumb pressure to align the card with the connectors. Next, use the levers on the card to seat the card into the connectors

DANGER Possibility of personal injury



DANGER

Possibility of personal injury

Do not open the front panel of the inverter unless fuses F1, F2, and F3 have been removed. The inverter contains high voltage lines. Until the fuses are removed, the high voltage lines are active, and you risk being electrocuted.

How commands, parameters, and responses are represented

Commands, parameters, and responses in this document conform to the following conventions.

Input prompt (>)

An input prompt (>) indicates that the information that follows is a command:

>BSY

Commands and x ed parameters

Commands and x ed parameters that are entered at a MAP terminal are shown in uppercase letters:

>BSY CTRL

Variables

Variables are shown in lowercase letters:

>BSY CTRL ctrl_no

The letters or numbers that the variable represents must be entered. Each variable is explained in a list that follows the command string.

Responses

Responses correspond to the MAP display and are shown in a different type:

FP 3 Busy CTRL 0: Command request has been submitted.

FP 3 Busy CTRL 0: Command passed.

The following excerpt from a procedure shows the command syntax used in this document:

1. Manually busy the CTRL on the inactive plane by typing

>BSY CTRL ctrl_no

and pressing the Enter key.

where

ctrl_no is the number of the CTRL (0 or 1)

Example of a MAP response:

```
FP 3 Busy CTRL 0: Command request has been
submitted.
```

```
FP 3 Busy CTRL 0: Command passed.
```

1. Maintenance overview

ATTENTION

LNP is based on AIN Essentials. You must be familiar with AIN before using this document. For a list of relevant AIN documents, please see “About this document”.

This part provides maintenance information that helps operating company personnel maintain switch performance at acceptable levels.

LRN-LNP software requires relatively little maintenance in addition to the regular maintenance activities of the DMS SuperNode switch.

You can find information about the digital recorded announcement machine (DRAM) hardware in *DRAM and EDRAM Guide*, 297-1001-527. For product information on LRN-LNP, refer to the documents listed in “About this document”.

1.1 Fault conditions

For information on LRN-LNP failures and system faults, refer to Chapter 11.: “Trouble locating for LRN-LNP” on page 495.

1.2 Maintenance impact

You base your analysis of a switching system on a combination of maintenance and traffic indicators. These indicators provide information on the state of the system and assist in identifying actual or potential service problems.

The switch uses operational measurements (OM) that the system associates with provisioning and administration. You use the OMs to determine if adequate software and hardware resources are in place.

In addition, maintenance measurements, along with log reports, provide data that you can use to evaluate LRN-LNP performance and the impact on system performance.

1.3 Automatic maintenance

LRN-LNP does not incorporate automatic maintenance.

1.4 Manual maintenance

Because LRN-LNP is primarily a software product, you do not perform manual maintenance activities. If you perform manual maintenance, you do so on components that affect the software.

1.5 LRN-LNP card requirements

LRN-LNP software uses existing DMS-100 family hardware, CCS7 communication links, and operating company-supplied SCPs.

LRN-LNP hardware restrictions require the enhanced digital recorded announcement machine (EDRAM) card NT1X80AA and DRAM controller card NT1X75BA (instead of NT1X75AA) to play customized AIN announcements.

For calls on PRI trunks, the SCP AIN Send_To_Resource response message requires a Digitone receiver (DTR) card NT2X48CB on the maintenance trunk module (MTM) instead of the universal tone receiver (UTR) card NT6X92AA on the XMS-based peripheral module (XPM). This requirement does not apply to other call scenarios.

1.6 Routine maintenance procedures

Routine maintenance procedures ensure that both hardware and software have no faults. Routine maintenance schedules comprise tasks performed according to a prede ned schedule. Refer to North American DMS-100 *Routine Maintenance Procedures* for procedures to complete these and other maintenance tasks.

Preventive routine maintenance for the switch includes routine exercise (REX) testing at regular intervals on DMS-100 equipment by internal software. This diagnostic test indicates whether any problems exist on the switch.

Other routine maintenance includes automatic line testing (ALT) and testing of both line circuits and attached loops. You run the ALT test on a large group of lines during a low traf c period. Maintenance activities using ALT include gathering and interpreting log reports and OMs to analyze and monitor performance factors of the switch.

1.7 Routine maintenance schedules

For DMS hardware and software, Nortel recommends a monthly schedule for preventive routine maintenance. You do not perform routine maintenance for LRN-LNP.

2. AIN message tracing tool

AIN TCAP message tracing (AINTrace) is a single-user CI tool available through the maintenance and administrative position (MAP) terminal. The tool allows the user to display/view CCS7 TCAP messages that are sent to or from an SCP or ADJUNCT. AIN messages can be captured by selecting either the agent type or message type desired. The captured TCAP messages are stored in a log and are then displayed in hexadecimal (HEX) format, text format, or both.

Using the AINTrace CI commands, agents are selected by:

- TID Node and terminal number
- DN Directory number
- LEN Line equipment number
- TRK Trunk group CLLI and member number
- LTID Logical Terminal Identifier
- AC Attendant Console CLLI

AINTrace also allows operating company personnel to trace messages based on message type. Messages are selected by MESSAGE message type (AGC, CREATE_CALL, MONITOR_FOR_CHANGE, UPDATE).

When tracing is active, AINTrace checks all AIN incoming and outgoing messages against the agents, or messages selected. When a match occurs, AINTrace writes the related information to the log.

2.1 Using TOOLSUP to access AINTrace

AINTrace is a single user tool. The MAP window displays the user of the AINTrace tool if it is currently in use. The status and history commands of the TOOLSUP utility provide information on the status and execution history of AINTrace. The following example shows how to use the TOOLSUP utility to access AINTrace.

Figure 1 Using TOOLSUP to access AINTrace example

```

CI:
>AINTrace
AINTrace:
>AINTrace
User count exceeded; AINTrace in use by TEAM12
>toolsup

TOOLSUP - Tool Supervisor

Type HELP to display available commands

TOOLSUP:
>status of AINTrace

Name          Status          Owner(s)

AINTrace      Unavailable     TEAM12
>history of AINTrace

AINTrace      Action          Time           Who
Actions: 21
             Stop          1999/11/16 12:31:47  SYSTEM
             Stop          1999/11/16 14:23:00  SYSTEM
             Stop          1999/11/16 14:29:39  SYSTEM
             Start         1999/11/16 15:40:43  TEAM12
    
```

2.2 AINTrace commands

The following AINTrace functions are available:

- entering the AINTrace environment
- selecting and removing agents and messages from the tracing list
- starting and stopping the tracing process
- querying the status of the AINTrace tool
- format, selecting the format for the AINTrace output
- quitting from the AINTrace environment

The tracing of AIN messages occurs after the START command has been entered, and can be stopped with the STOP command.

Access the AINTrace command from the CI MAP level by typing

```
>AINTrace
```


and pressing the Enter key.

The following AINTrace commands are available:

- HELP
- STATUS
- SELECT
- REMOVE
- START
- STOP
- FORMAT
- QUIT

Each option is described in the following sections.

2.2.1 HELP command

Invoking HELP displays AINTrace commands with a brief description of each command.

2.2.2 STATUS command

The STATUS command displays the current status of the tracing tool, the list of selected terminals, and the text format.

2.2.3 SELECT command

The SELECT command gives various ways of selecting an originating terminal (line or trunk) or message for tracing. Operating company personnel can use the command more than once to select more than one terminal or message type.

Note: For tracing termination attempt messages, use the SELECT command to select the originator of the call instead of the terminator.

The NA013 product release enhances AINTrace to trace certain messages using the SELECT command.

2.2.3.1 SELECT command: SELECT DN

The SELECT DN option selects a terminal based on the given DN. Use the SELECT DN command on a switch that supports lines.

Use the following syntax to select an agent by DN.

>SELECT DN <dn>

where <dn> is the directory number.

Example:

```
>SELECT DN 6211185
```

2.2.3.2 SELECT command: LEN

The SELECT LEN option selects a terminal based on the given LEN, consisting of an optional site parameter and four numbers that specify the frame, unit, drawer, and unit of the desired equipment. Use the SELECT LEN command only on a switch that supports lines.

When a LEN is selected where virtual identifier (VID) mapping is used (for example, keys on an EBS set), the command maps all VIDs to a single TID. As a result, the command selects all VIDs for tracing. See Section 2.2.3.3.1.

Use the following syntax to select a LEN.

```
>SELECT LEN <site> <frame> <unit> <drawer> <circuit>
```

where <site> is an optional site parameter (the default is HOST)
<frame> is a frame number
<unit> is a unit number
<drawer> is a drawer number
<circuit> is a circuit number

Examples:

```
>SELECT LEN 27 0 12 16  
>SELECT LEN REM1 1 0 15 31
```

2.2.3.3 SELECT command: trunk

The SELECT TRK option selects a specified trunk member .

Use the following syntax to select a trunk.

```
>SELECT TRK <cli> <Member Number>
```

where <cli> is a trunk name
<Member Number> is the trunk member number

Example:

```
>SELECT TRK IBNMFITOG 3
```

2.2.3.3.1 SELECT command: terminal The SELECT TID option selects a terminal based on the node and terminal identifier number of the terminal. Use the SELECT TID syntax with Virtual Terminal Identifiers (VIDs). Enter the virtual node and terminal number.

Use the following syntax to select a terminal by node and terminal number.

>SELECT TID <node> <term>

where <node> is the terminal node
<term> is the terminal number

Example:

>SELECT TID 2 251

2.2.3.3.2 SELECT command: LTID The SELECT LTID option selects a logical terminal based on the logical terminal group, logical terminal number, and key. The key must be a DN key and not a feature key on the BRI set.

Use the following syntax to select a logical terminal.

>SELECT LTID <ltgrp> <ltnum> <key>

where <ltgrp> is an LTID group on a BRI set
<ltnum> is the LTID number on the BRI set
<key> is the key for the line you want to trace

Examples:

>SELECT LTID ISDN 201
>SELECT LTID ISDN 201 3

2.2.3.3.3 SELECT command: attendant console The SELECT AC option selects an attendant console based on the CLLI provided.

Use the following syntax to select an attendant console for tracing.

>SELECT AC <CLLI>

where <CLLI > is the attendant console CLLI for the terminal

Example:

>SELECT AC ATTKDKB

2.2.3.4 SELECT command: message

The SELECT MESSAGE option allows certain messages to be selected and traced..

Use the following syntax to select a message.

>SELECT MESSAGE <Operation Code>

where <Operation Code> is one of the following messages ACG, CREATE_CALL, MONITOR_FOR_CHANGE, UPDATE

Examples:

>SELECT MESSAGE CREATE_CALL

>SELECT MESSAGE ACG

2.2.3.5 SELECT command: msg

The SELECT MSG option allows certain messages to be selected and traced..

Use the following syntax to select a message.

>SELECT MSG <Operation Code>

where <Operation Code> is one of the following messages ACG, CREATE_CALL, MONITOR_FOR_CHANGE, UPDATE

Examples:

>SELECT MSG CREATE_CALL

>SELECT MSG ACG

2.2.4 REMOVE command

The REMOVE command removes terminals from the list. The syntax of the REMOVE command is similar to that of the SELECT command. Use the STOP command to stop tracing before removing any terminals from the list.

The NA013 product release enhances AINTrace to remove certain messages being traced.

2.2.4.1 REMOVE command: syntax 1

Use the following syntax to clear the selection list.

>REMOVE ALL

2.2.4.2 REMOVE command: syntax 2

Use the following syntax to remove an agent from the selection list, based on the directory number.

>REMOVE DN <dn>

where <dn> is a directory number

Example:

>REMOVE DN 6211185

2.2.4.3 REMOVE command: syntax 3

Use the following syntax to remove a terminal from the selection list based on the LEN. When selecting a LEN where VID mapping is used (for example, keys on an EBS set), the command maps all VIDs to a single TID. As a result, the command removes all VIDs. See Syntax 6.

>REMOVE LEN <site> <frame> <unit> <drawer> <circuit>

where <site> is an optional site parameter (the default is HOST)
<frame> is a frame number
<unit> is a unit number
<drawer> is a drawer number
<circuit> is a circuit number

Examples:

>REMOVE LEN 0 0 13 24
>REMOVE LEN REM1 1 0 15 21

2.2.4.4 REMOVE command: syntax 4

Use the following syntax to remove a trunk from the selection list, based on the CLLI and circuit number.

>REMOVE TRK <clli> <ckt>

where <clli> is a trunk name
<Member Number> is the trunk Member number

Example:

>REMOVE TRK IBNMFITOG 5

2.2.4.5 REMOVE command: syntax 5

Use the following syntax to remove a terminal, based on the node and terminal number.

>REMOVE TID <node> <term>

where node is the terminal node
term is the terminal number

Example:

>REMOVE TID 23 1042

2.2.4.6 REMOVE command: syntax 6

Use the following syntax to remove a logical trunk from the selection list.

>REMOVE LTID <ltgrp> <ltnum> <key>

where ltgrp is an LTID group on a BRI set
ltnum is the LTID number on the BRI set
key is the key for the line

Examples:

REMOVE LTID ISDN 201
REMOVE LTID ISDN 201.3

2.2.4.7 REMOVE command: syntax 7

Use the following syntax to remove an attendant console from the selection list.

>REMOVE AC <CLLI>

where <CLLI> is the attendant console CLLI for the terminal

Examples:

>REMOVE AC ATTKDKB

2.2.4.8 REMOVE command: syntax 8

Use the following syntax to remove an attendant console from the selection list.

>REMOVE MESSAGE <Operation Code>

where <Operation Code> is one of the messages that can be traced (ACG, CREATE_CALL, MONITOR_FOR_CHANGE, UPDATE).

2.2.4.9 REMOVE command: syntax 9

Use the following syntax to remove an attendant console from the selection list.

>REMOVE MSG <Operation Code>

where <Operation Code> is one of the messages that can be traced (ACG, CREATE_CALL, MONITOR_FOR_CHANGE, UPDATE).

2.2.5 START command

The START command starts tracing activity for calls originating on the selected terminals and for messages that match the SELECT criteria..

Log AINT700 displays the AINTrace messages that match the SELECT criteria.

2.2.6 STOP command

The STOP command stops the tracing activity for the SELECTED items.

Use the STOP command to stop tracing activity before adding or removing items from the list.

2.2.7 FORMAT command

The FORMAT command determines how messages appear in log AINT700.

The default format shows both the hexadecimal (HEX) and text output.

Syntax:

>FORMAT <option>

where <option> is one of

- text to indicate text display
- hex to indicate hexadecimal display
- both to indicate hexadecimal and text display

Example:

>FORMAT both

2.2.8 QUIT command

The QUIT command leaves the AINTrace environment and returns to the CI level.

2.3 Supported messages and parameters

The AINTrace tool supports AIN Essentials and AIN Service Enablers messages and parameters. See Table 1 on page 38 and Table 2 on page 41.

Note: Messages in shaded areas are not supported for this release.

Table 1 AIN Service Enabler messages reported by AINTRACE (Sheet 1 of 4)

Type	Message
SSP call-related messages	Call_Info_From_Resource
	Close
	CTR_Clear
	Failure_Outcome
	Info_Analyzed
	Info_Collected
	Network_Busy
	O_Abandon
	O_Answer
	O_Called_Party_Busy
	O_Disconnect
	O_Mid_Call
	O_No_Answer
	O_Suspected
	O_Term_Seized
	Origination_Attempt
	Resource_Clear
	Success_Outcome
	T_Answer
	T_Busy
	T_Disconnect
	T_Mid_Call
	T_No_Answer
	Termination_Attempt
	Term_Resource_Available
	Timeout

Table 1 AIN Service Enabler messages reported by AINTrace (Continued)

Type	Message
SCP or adjunct call-related messages	Acknowledge
	Analyze_Route
	Authorize_Termination
	Call_Info_To_Resource
	Cancel_Resource_Event
	Close
	Collect_Information
	Connect_To_Resource
	Continue
	Create_Call
	Disconnect
	Disconnect_Leg
	Forward_Call
	Merge_Call
	Move_Leg
	Offer_Call
	Originate_Call
	Reconnect
	Send_To_Resource
	Split_Leg

Table 1 AIN Service Enabler messages reported by AINTrace (Continued)

Type	Message
noncall-related messages	ACG
	ACG_Global_Ctrl_Restore
	ACG_Global_Ctrl_Restore_Success
	ACG_Overflow
	Control_Request
	Echo_Reply
	Echo_Request
	Furnish_AMA_Information
	Monitor_For_Change
	Monitor_Success
	NCA_Data
	NCA_Request
	NCA_Response
	Query_Request
	Query_Response
	Request_Report_BCM_Event
	Send_Notification
	Status_Reported
	Termination_Notification
	Update
	Update_Data
	Update_Request
	Update_Success
abnormal	Application_Error
	Report_Error
	Failure_Report

Table 2 lists supported parameters for supported messages. All unsupported incoming parameters are displayed in HEX regardless of whether the formatting option selected was “TEXT” or “HEX.”

Table 2 Parameters supported by AINTrace

AccessCode	CollectedAddressInfo	NotificationDuration
ACGEncountered	CollectedDigits	NotificationIndicator
AdminstrableObject	ConnectTime	ONoAnswerTimer
AlternateBillingIndicator	ControlCauseIndicator	OriginalCalledPartyID
AlternateCarrier	ControllingLegTreatment	OutputNumber
AlternateTrunkGroup	DestinationAddress	OverflowBillingIndicator
AMAAlternateBillingNumber	DisconnectFlag	PassiveLegTreatment
AMABusinessCustomerID	DisplayText	Prefix
AMADigitsDialedWC	EchoData	PrimaryBillingIndicator
AMALineNumber	EDPNotification	PrimaryTrunkGroup
AMAMeasure	EDPRequest	RedirectingPartyID
AMAMeasurement	ErrorCause	RedirectionInformation
AMAspID	EditListType	ResourceType
AnswerIndicator	ExtendedRinging	SecondAlternateBillingIndicator
ApplicationErrorString	FacilityGID	SecondAlternateCarrier
BearerCapability	FacilityMemberID	SecondAlternateTrunkGroup
BusyCause	FacilityStatus	Spid
BusyType	FailureCause	StatusCause
CalledPartyID	ForwardCallIndicator	StrParameterBlock
CalledPartyStationType	GapDuration	Tcm
CallingPartyBGID	GapInterval	TerminationIndicator
CallingPartyID	GenericAddress	TimeoutTimer
Carrier	GenericAddressList	TNoAnswerTimer
CarrierUsage	GenericName	TranslationType
ChargeNumber	GlobalTitleAddress	TriggerCriteriaFlag
ChargePartyStationType	MonitorTime	TriggerCriteriaType
CloseCause	NetworkSpecificFacilities	

Table 2 Parameters supported by AINTrace (Continued)

ClearCause	IPReturnBlock	UserID
ClearCauseData	Lata	VerticalServiceCode

Note: For the AdminstrableObject parameter, AINTrace supports the settings that GAME supports.

2.3.1 SOC idle warning

Because some SOC options control parameter and/or message use, AINTrace warns the user that SOC options are idle in the following cases:

- An incoming message is supported but it is controlled by a SOC option that is currently idle. The message is displayed with the warning “message is associated with SOC option <option name> that is currently idle.”
- Incoming parameters are supported but are controlled by a SOC option that is currently idle. The parameter is displayed with the warning “parameter is associated with SOC option <option name> that is currently idle.”

2.4 Viewing AINT 700 logs using the LOGUTIL tool

The AINT 700 logs can be viewed using the LOGUTIL tool. The following instructions describe the use of the LOGUTIL tool for viewing AINT 700 logs:

- To view the AINT 700 logs, the user opens the log (‘OPEN AINT 700’). The last generated log is displayed. The full set of LOGUTIL traversal commands are available. (‘BACK [ALL],’ ‘FORWARD [ALL],’ ‘FIRST,’ etc.).
- To view real-time AINTrace-captured messages, invoke the ‘START’ command. LOGUTIL tool will start dumping the logs. Logs can be itered using the command line ‘DELREP PRT2 PM NETM LINE AUD AUDT.’
- For best performance, the user should have two separate MAPCI sessions for AINTrace and for the LOGUTIL tool. When one MAPCI session is used for both, the following issues are involved
 - Because both AINTrace and the LOGUTIL tool use the same commands, they mask each other depending on which tool command was entered last. When the LOGUTIL tool was entered last, AINTrace’s commands are executed by specifying the AINTrace command. To specify AINTrace, type ‘AINTraceDIR.<command>’ (for example, ‘AINTraceDIR.STOP’)
 - When the user has invoked continuous log dumping in the LOGUTIL tool (‘START; WHILE TRUE (SLEEP 100)’), the volume of logs being dumped may cause difficulty in invoking further commands. To

halt log dumping, invoke the LOGUTIL STOP command. Note that quitting from the LOGUTIL tool ('QUIT') will not halt log dumping.

- AINTrace must not be tracing messages when the user wishes to use the SELECT or REMOVE command.

2.5 AINTrace example 1

Figure 2 on page 43 shows an example of using AINTrace. The call scenario originates a call that hits an SDS trigger, sending a multi-component message containing a Continue operation and a RRBCME operation, and then terminates the call. AINTrace captures the messages sent between the SSP and SCP and decodes the AIN Service Enablers messages and parameters.

Figure 2 SDS trigger, Continue and Request_Report_BCM, with Close response

```
>AINTrace
AINTrace:
>select dn 7225035
2 MADN members found
2 terminals selected
>start
Tracing started. Messages will be logged to log AINT 700.
>stop
Tracing stopped. Messages were logged to log AINT 700.
>logutil
>open AINT 700
COMI09BC AINT700 NOV07 14:57:16 9900 INFO AINTrace Report
TID: 173 256
Agent: LEN HOST 02 0 02 01 DN 7225035 KEY 1
Direction: Incoming
TCAP Package Type: Response
Transaction IDs: Hex ID = 40000000
Component Sequence:
Component Type: Invoke (Last)
Component ID(s): Hex ID = FF Decimal ID = 255
Message: Close
UserId Dn: 6137225035
Bearer Capability: Speech
Close Cause: Call Terminated
>back
COMI09BC AINT700 NOV07 14:57:12 9900 INFO AINTrace Report
TID: 173 256
Agent: LEN HOST 02 0 02 01 DN 7225035 KEY 1
Direction: Incoming
TCAP Package Type: Conversation With Permission
Transaction IDs: Hex ID = 40000000
Component Sequence:
Component Type: Invoke (Last)
Component ID(s): Hex ID = 01 Decimal ID = 1
Hex ID = 76 Decimal ID = 118
Message: Continue
```

Figure 2 SDS trigger, Continue and Request_Report_BCM, with Close response (Continued)

```
Component Sequence:
Component Type: Invoke(Last)
Component ID(s): Hex ID = 02 Decimal ID = 2
Hex ID = 76 Decimal ID = 118
Message: Request_Report_BCM_Event
EDP Request:
O_Called_Party_Busy
O_Answer
EDP Notification:
O_Answer
O No Answer Timer: 12
>back
COMI09BC AINT700 NOV07 14:57:10 9900 INFO AINTrace Report
TID: 173 256
Agent: LEN HOST 02 0 02 01 DN 7225035 KEY 1
Direction: Incoming
TCAP Package Type: Conversation With Permission
Transaction IDs: Hex ID = 8F0000
Component Sequence:
Component Type: Invoke(Last)
Component ID(s): Hex ID = 76 Decimal ID = 118
Message: Info_Analyzed
UserId Dn: 6137225035
BearerCapability: speech
CalledPartyID: 6136212234
Nature of Number: Subscriber number
Numbering Plan: ISDN Numbering Plan
TriggerCriteriaType: npaNXXXXXX
ChargeNumber: 6137225035
Nature of Number: ANI of the calling party; national number
Numbering Plan: ISDN Numbering Plan
CallingPartyID: 6137225035
Nature of Number: Non-unique national number
Numbering Plan: ISDN Numbering Plan
Presentation Indicator: Presentation allowed
Screen Indicator: Network provided
ChargePartyStationType: IdentifiedLine - No Special Treatment
Carrier: 0110
Carrier Selection: Selected identification code presubscribed and
not input by calling party
```

2.6 Limitations

AINTrace has the following limitations and restrictions:

- AINTrace is a single user tool.
- The maximum number of TIDs that can be selected at a time is 40.

- AINTrace has no facility for tracing calls or retaining data over a restart. On a restart, messages are preserved while all other data is lost and the tool is re-initialized.
- AINTrace does not capture a message when any non-call-related error occurs while building a query message or when a protocol error occurs.
- AINTrace is not designed to handle all erroneous TCAP messages.
- When AINTrace traces ACG messages, ACG in a multi-component message is not detected and displayed unless the affected TID is traced as well.
- With the exception of the Create_Call message and a subset of non call-related messages (ACG, Monitor_For_Change, Update, Update_Data, Update_Request, Update_Success), AINTrace does not record messages that are not part of a call-related transaction (for example, unidirectional messages and non call-related messages).

When an agent's TID is mapped to virtual identifiers (VIDs), (as in the case where there is more than one DN for each LEN) then the TID itself cannot be traced. Information can be collected against the VIDs.

Although AINTrace has the capability of tracing VIDs that are associated with a TID, AINTrace cannot trace feature keys, even when the feature key has a VID assigned to it. AINTrace can only trace lines or trunks.

3. Translation verification tool for AIN

The translation verification (TRAVER) utility allows telephone operating company personnel to examine, for maintenance and verification purposes, the translation and routing data of a simulated call. The routing and translation data is displayed for a single leg of a call, and the originating and terminating agents of the call leg are specified by the user. All lines and trunk groups currently supported by the AIN SSP are supported by TRAVER.

TRAVER displays AINSSP-specific information. No AINSSP query is launched by this utility, however, at certain TDPs a query message can be optionally stored in a file for subsequent import into the TstQuery tool.

When the TRAVER command is executed, call processing is simulated and the following TDPs in the originating and terminating call models can be encountered:

- Info_Collected
- Info_Analyzed
- Network_Busy
- Origination_Attempt
- Termination_Attempt

When a TDP is encountered, the following actions take place:

- A subscription to any of the triggers at the TDP is determined. In the originating call model, when triggers can be subscribed on different bases, the trigger subscription is checked in the following order of precedence:
 - Individual (line or trunk group) based triggers
 - Of ce-based triggers
 - Customer group-based triggers
- At the Info_Analyzed TDP, the trigger precedence is as follows (The DMS names corresponding to these triggers are provided in parentheses):
 - Speci c_Feature_Code (SFC)
 - Public_Feature_Code (PODPFEAT)
 - Customized_Dialing_Plan (CDPCODE)
 - Speci c_Digit_String (PODP)
 - N11
- When there are no triggers subscribed at the TDP, an informational message is displayed and the call processing simulation continues.
- When a trigger is subscribed at the TDP, the entry from table TRIGGRP that defines the trigger is displayed. Criteria checking is then performed. For triggers Off-Hook_Immediate (OFFHKIMM), Off-Hook_Delay (OFFHKDEL), and Termination_Attempt (TERM_ATT), the activation state is also checked. This check is treated by TRAVER as an additional form of criteria checking.
- When the trigger is subscribed, but its criteria has not been met, an information message is displayed and simulation of call processing continues.
- When the trigger is subscribed and criteria are met, but either the AIN00002 or AIN00006 SOC option is not in the ON state, a message displays to indicate the option that is not ON and simulation of call processing continues.
- When the trigger is subscribed, its criteria is met, and both the AIN00002 and AIN00006 SOC options are in the ON state, then the following messages are displayed
 - an informational message and the entry in tables TRIGITM, TRIGINFO or TRIGDIG that specify the messaging and protocol information for this trigger are displayed
 - when the AINMQG option was speci ed, an applicable query message for the TDP is generated and saved to a file for subsequent import into the TstQuery tool (this occurs for TDPs Origination_Attempt,

Info_Collected, Info_Analyzed, Network_Busy, and Termination_Attempt.

- when the AINMQG option was not specified, an information message is displayed
- Simulation of the call ends at this point.
- when the AINMQG option was specified on the command line, it is ignored until and unless a subscribed trigger criteria is met and both the AIN00002 and AIN00006 SOC options are in the ON state.

The Termination_Attempt TDP is only encountered when a simulation of call processing is not terminated by “triggering” at any of the originating TDPs.

For AINSSP triggers, it is possible to specify trigger criteria based on call type. TRAVER assumes “voice” as the default call type. When the user wishes to test calls of other call types, the TRAVER BearerCapability (BC) option should be used.

See Section 3.18 “TRAVER example 1” on page 139.

3.1 Limitations

TRAVER has the following limitations and restrictions:

- TRAVER does not build into a generated query message all the parameters that real call processing support. The user must manually add any missing parameters with TSTQuery.
- TRAVER does not support the LNP triggers for query message building.
- TRAVER does not support the attendant console agent for query message building.
- Calls that route through TR-533 E800 are not traced by TRAVER, however calls that use AIN Service Enablers’ toll-free service are.
- LEAS traffic is not supported in TRAVER for query messages populating parameter LATA.
- AINMQG-TRAVER supports the triggers at the TDPs: Origination_Attempt, Info_Collected, Info_Analyzed, Termination_Attempt and Network_Busy.
- Among the triggers at the TDP Info_Analyzed, the LNP trigger is not supported in AINMQG-TRAVER.
- LEAs traffic is not supported in AINMQG-TRAVER for query messages populating the message parameter LATA.
- AINMQG-TRAVER does not support all message parameters introduced by the AIN triggers.

- TRAVER does not support serial triggering. When more than one trigger per call is expected, then it must be manually simulated using AINRES.
- The AC (Attendant Console) agent is not supported in TRAVER for query message building.

3.2 Restrictions

AIN does not support the TrnsIVf (MAPCI) utility.

3.3 TRAVER command

The TRAVER command and its options are as follows:

```
>TRAVER <ORIG> ...
        L <LINE> STRING ...
        TR <CLLI> STRING ...
<DIGITS OR N FOR NO DIGITS> STRING
[<CDNIE> CDN ...
[<TNSIE> {TNS ...} ...
[<BC> {BC <BCNAME> STRING}] ...
[<AIN_OPTIONS> {AIN [<AIN_CHG> {AINCHG <DIGITS>
STRING}]
                                [<AIN_MQG> {AINMQG}] ]}]
[<AININFO>]{AINRES} ...
<TRACE> {T, NT, B} ...
[<BILLNO> STRING] ...
```

3.4 Equal access translation

TRAVER works with the equal access translation feature for AIN Essentials TRK-FGD interworking call scenarios. To accomplish this, translations indexes table TRKLATA with the originating trunk CLLI and the charge number in the SCP response or ANI (when it is an originating trunk). When TRAVER finds the tuple in table TRKLATA, it uses the corresponding LATA to check tables LATAOLA and OCCINFO. When TRAVER does not find an entry in table TRKLATA, it displays none of the three tables.

This TRAVER functionality works only with the AINRES option on the command line.

3.5 MF inter-toll trunk translation

The MF inter-toll trunk translation enhancement feature does not affect the TRAVER utility. The following section provides information related to the use of the TRAVER utility regarding this feature.

A single TRAVER command cannot simulate both stages of translation simultaneously for a call on an incoming MF IT trunk, using FGD signaling and having an SSP selector specified in subtable STDPR T of table

STDPRTCT. Each stage of translations must be simulated separately through the TRAVER utility. The first stage of translations, that translate the 0ZZXXX(X) digits, require a separate TRAVER command. The second stage of translations, that translate the dialed digits, require a second TRAVER command.

The following diagrams illustrate examples of the TRAVER commands that can be used to simulate a call. The example shows a call with an incoming MF IT trunk using FGD signaling and having an SSP selector that can be specified in subtable STDPRT of table STDPRTCT. Figure 3 illustrates the TRAVER output resulting from the first stage of translations.

Figure 3 TRAVER output for first stage of translations

```

>TRAVER tr mfiteaic 088110 b
TABLE TRKGRP
MFITEAIC IT 63 ITTD NCTC IC NIL MIDL 613 E800 NSCR 613 000 N Y $
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ONE
TABLE STDPRTCT
E800 (1) (65021) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 088110 088110 SSP NP 6 6 NA
AIN Info Collected TDP: no subscribed trigger.
DIALED EQUAL ACCESS CODE DID NOT TRIGGER
TRAVER STOPS PROCESSING THE CALL
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
+++ TRAVER: SUCCESSFUL CALL TRACE +++
>

```

The TRAVER utility stops when it encounters an SSP selector. Figure 4 on page 52, illustrates the TRAVER output resulting from the second stage of translations.

Figure 4 TRAVER output for second stage of translations

```

>TRAVER tr mfiteaic 6007229876 b
TABLE TRKGRP
MFITEAIC IT 63 ITTD NCTC IC NIL MIDL 613 E800 NSCR 613 000 N Y $
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ONE
TABLE STDPRTCT
E800 (1) (65021) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS:   N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:   NONE OVRNONE N
TABLE HNPACONT
613 873 2 (61) (1) (94) (0) 0
. SUBTABLE HNPACODE
. 600 600 FRTE 600
AIN Info Collected TDP: no subscribed trigger.
TABLE TRIGGRP
OFCTRIGGRP_ONE INFOANAL
. N11 (DG N11DIG)$NIL
Trigger R01 N11 is applicable to office.
. PODP (DG PODPDIG)$NIL
Trigger R01 PODP is applicable to office.
. TABLE TRIGDIG
. PODPDIG PODP 6007229876 PODP EVENT TCAP R01 SS7 AINJAZZ DFLT $
... TABLE C7GTTYPE
... AINJAZZ ANSI7 3 $
... TABLE C7GTT
... AINJAZZ 6007229876 6007229876 SSONLY (AINTST) $

AIN Info Analyzed TDP: trigger criteria met, querying the database.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

>

```

To simulate a call on an incoming MF IT trunk using FGD signaling and having an SSP selector speci ed in subtable STDPRT of table STDPRTCT required two TRAVER commands. The TRAVER utility cannot compare the output of the second TRAVER command with the output of the rst TRAVER command.

To use the TRAVER utility for 0+ calls on incoming MF IT trunks using FGD signaling and having an SSP selector in subtable STDPRT of table STDPRTCT, the user could omit the “0” pre x and simply specify the remaining 10-digit dialed number.

Assuming that the appropriate data II is present, the previous method simulates an actual 0+ call when call processing encounters this feature enhancement. That is, with this feature enhancement, call processing strips the leading 0 for 0+ calls on incoming MF IT trunks using FGD signaling and having an SSP selector in subtable STDPRT of table STDPRTCT. To successfully use TRAVER, the user must do the same to simulate the second stage of translations.

3.6 AIN response translation simplification

For the AIN response translations simplification feature, three optional parameters are available for the TRAVER command.

In addition to the three optional parameters, TRAVER adds output messages to the trace display area to indicate when it has completed ISDN digit conversion. These display messages appear with the trace output for table PXLAMAP. See Section 8 “TRAVER example for PXLAMAP ISDN digit conversion” on page 55.

Parameter definitions for AIN response translations simplification are summarized in Table 3.

Table 3 Parameter definitions for AIN response translations simplification

Parameter	Value	Definition
DIGCONV	None	Optional parameter that is only relevant when the SOC option for AIN Response Translation Simplification is idle. Use this parameter to indicate that TRAVER should invoke ISDN digit conversion when the translation datafill is present to trigger it. This parameter is not relevant when the SOC option is ON.
FGD	None	Optional parameter specifying that the trunk originator uses FGD signaling.
CIC3	None	Optional Parameter specifying that the translations for the incoming FGD trunk is based on CIC size of 3 digits. Use the parameter FGD to access this parameter.

The feature uses the TRAVER AINRES data II option. When the digit conversion process applies, TRAVER indicates that digit conversion applies and reports the converted digits.

The AIN response translation simplification feature introduces three parameters for TRAVER. All three parameters fall under the AINRES option.

Parameter DIGCONV lets the operating company investigate digit conversion results while the ISDN digit conversion feature is inactivate in the of ce.

Use the other two parameters, FGD and CIC3, to supply information to the digit conversion process.

Figure 5 to Figure 7 on page 55 provide examples of command lines for AIN response translation simpli cation.

Figure 5 TRAVER command line for AIN analyze route response example

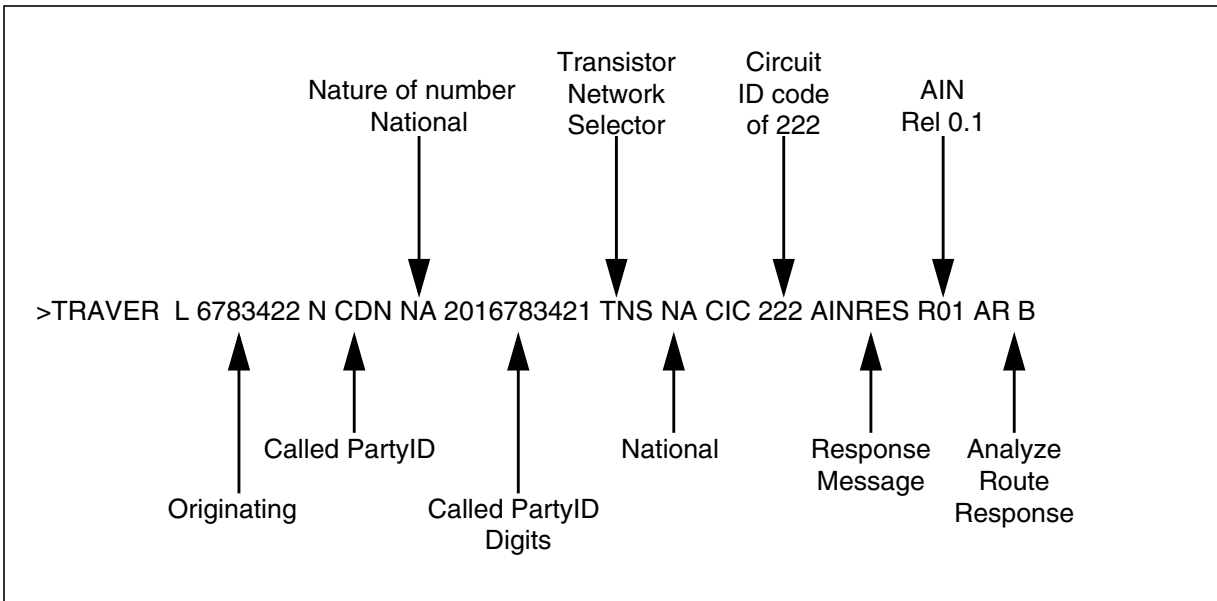


Figure 6 TRAVER command line for AIN continue response example

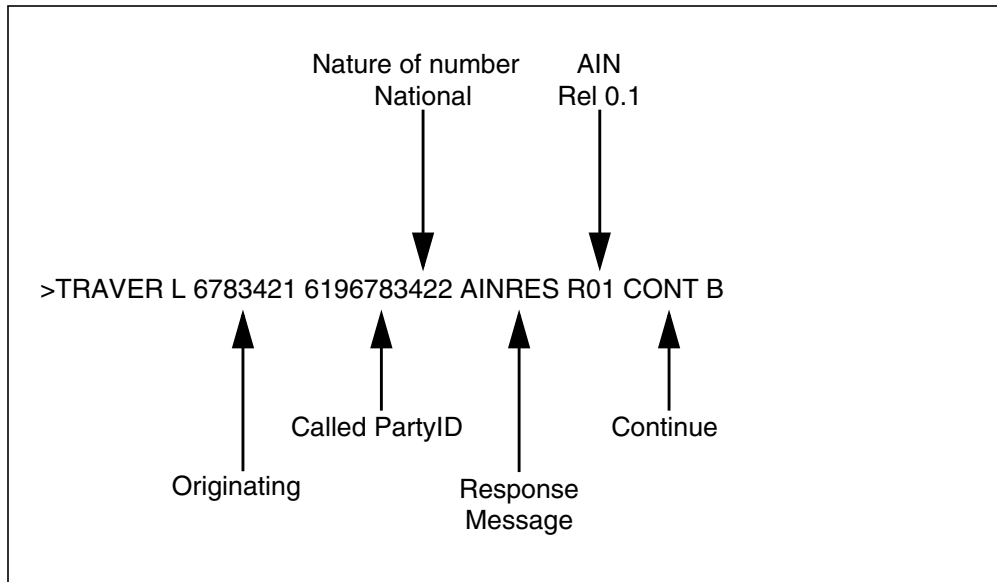


Figure 7 TRAVER command line for AIN forward call response example

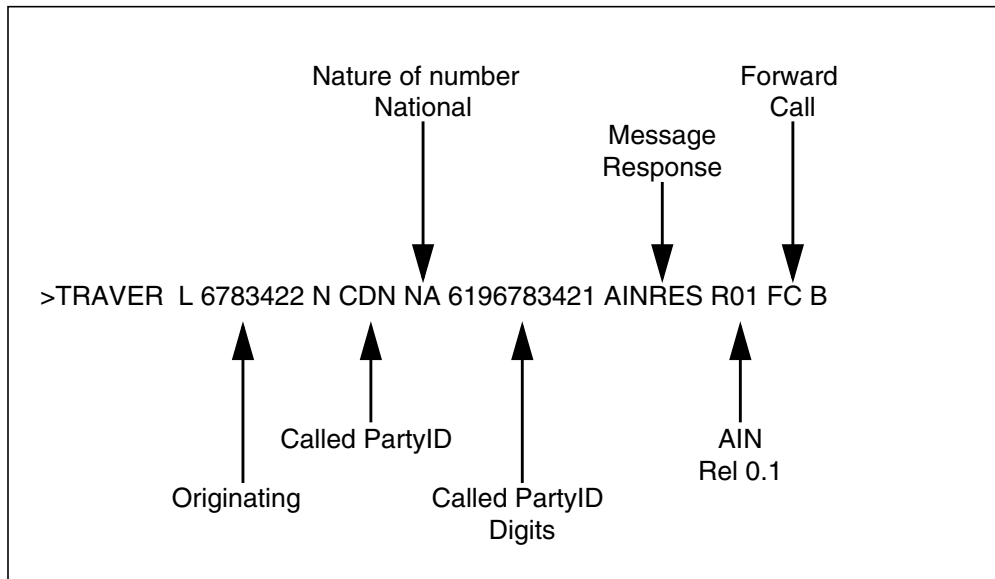


Figure 8 provides a sample TRAVER output for PXLAMAP ISDN digit conversion.

Figure 8 TRAVER example for PXLAMAP ISDN digit conversion

```
>traver l 6136213006 n cdn in 448196211211 ainres r02 ar b
Warning: Routing characteristics are present.
Originator must be able to send in
characteristics specified.
TABLE RTECHAR
. CDNPUB (CDN NA $) (CDN IN $) ( BC 3_1KHZ (CDN NA)$) ( BC 3_1KHZ (CDN
IN)$) $
TABLE IBNLINES
HOST 00 0 05 07 0 DT STN RES 6213006 200 613_P621_200 L613_NILLA_4 613 $
TABLE LINEATTR
200 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_200 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_200 FR01 613 P621 TSPS Y RESG200 0 0 $ $
TABLE RATEAREA
L613_NILLA_4 L613 NIL NILLATA $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 00 0 05 07 0 AIN AIN TIID (4 INTERNTL ON) (4 OPERSERV ON) $
TABLE CUSTSTN
RESG200 AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
```

Figure 8 TRAVER example for PXLAMAP ISDN digit conversion (Continued)

```

TABLE NCOS
RESG200 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG200 NXLA RXCMN200 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
TABLE IBNXLA: XLANAME RXCMN200
RXCMN200 4 AMBIG RXCFNXXX 2 RXCML200
NUMBER OF DIGITS GREATER THAN 2 RXCML200 TRANSLATOR WILL BE USED.
TABLE IBNXLA: XLANAME RXCML200
TUPLE NOT FOUND
Default from table XLANAME:
RXCML200
    (NET N N 0 N NDGT N Y GEN ( LATTR 200 613_P621_200 L613_NILLA_4)
    (EA ITT Y 0) $ )$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
200 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_200 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_200 FR01 613 P621 TSPS Y RESG200 0 0 $ $
TABLE RATEAREA
L613_NILLA_4 L613 NIL NILLATA $
TABLE PXLAMAP
. CDNPUB P621 ( XLA EAP1) ( PREFIX )$
. NOTE: ISDN Digit Conversion has been performed:
.     Resulting digits are: 011448196211211
TABLE STDPRTCT
EAP1 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 011 011 N DD 3 IN
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE CCTR
44 T 044 8 12 T OFRT 1022 Y $
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
1022 TS D OTMF1 0 0 N 3 188
    TS D OTDP1 0 0 N 3 188

```

Figure 8 TRAVER example for PXLAMAP ISDN digit conversion (Continued)

```

EXIT TABLE OFRT
LATA IS NIL, THEREFORE NOT AN EQUAL ACCESS CALL
Checking AIN INTERNTL Trigger Items as INTERNTL is compatible with current
call
. . TABLE TRIGITM
. . 4 INTERNTL INTERNTL $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTYPE
. . . AINPOP ANSI7 15 $
. . . TABLE C7GTT
. . . AINPOP 4481962112 4481962112 PCSSN (SIMTOOL RTESET SIMTOOL3 0) $
SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

```

3.6.1 DIGCONV parameter

Use parameter DIGCONV during an operating company's data II transition for ISDN digit conversion. You activate ISDN digit conversion through software optionality control (SOC).

While the ISDN digit conversion feature is idle or deactivated, the operating company can specify that it would like to see the results of a digit conversion in a TRAVER through use of parameter DIGCONV. TRAVERs performed without this parameter do not invoke digit conversion, therefore, the operating company can determine the result when the feature is active without affecting call processing. The operating company can further preserve the ability to use TRAVER to determine current data II.

It is important to note that even when using parameter DIGCONV, digit conversion occurs only when the data II is there to trigger it and has met the following conditions:

- the translation path hits a tuple in PXLAMAP that has the PREFIX selector data IIed
- the translation path hits PXLAMAP, but no tuple is found

Note: When ISDN digit conversion is active in an of ce, TRAVER does not need parameter DIGCONV to see digit conversion results. This parameter is signi cant only when ISDN digit con version is not active.

Parameter DIGCONV is an optional parameter that falls under the AINRES option (also optional).

The following command line is an example of the TRAVER command using DIGCONV and FGD (TRK Orig).

**TRAVER TR ISUPTIIC N CDN NA 6137220000 AINRES R01 AR
DIGCONV FGD B**

The following command line is an example of the TRAVER command using DIGCONV only (TRK Orig).

**TRAVER TR ISUPTIIC N CDN NA 6137220000 AINRES R01 AR
DIGCONV B**

The following command line is an example of the TRAVER command using DIGCONV and FGD (TRK Orig).

**TRAVER L 2413487 N CDN NA 6137220000 AINRES R01 AR
DIGCONV B**

3.6.2 FGD and CIC3 Parameters

The user provides information to TRAVER that is normally available during the duration of a call leg in call processing. TRAVER can only simulate portions of the call leg; this portion is the processing of the response from an SSP and the translation resulting from it. In digit conversion, the information elements that need to be provided are as follows:

- whether the originating or incoming agent is an FGD trunk
- when the trunk is an FGD trunk, does it's translations assume a CIC size of three, or four

An optional TRAVER parameter is available under parameter analyses response (AR) for RES_TYPE in the AINRES option hierarchy. This parameter is FGD, and it indicates an FGD originator for the TRAVER command. A second optional parameter can be added under the FGD parameter to indicate the CIC size. This second parameter is CIC3, and it indicates a CIC of three digits for the TRAVER command.

Absence of parameter FGD indicates a trunk originator of either an FGC or local trunk scenario.

When the user indicates that the trunk is FGD, but does not input CIC3, a CIC size of 4 digits is assumed.

Note: Using TRAVER for AIN response translations for line originators and non-FGD trunk originators does not require additional parameters for digit conversion.

The following command line is an example of the TRAVER command for an FGD trunk and a CIC size of three.

```
>TRAVER TR ISUPTIIC N CDN NA 6137220000 AINRES R01 AR FGD  
CIC3 B
```

The following command line is an example of the TRAVER command for an FGD trunk only.

```
>TRAVER TR ISUPTIIC N CDN NA 6137220000 AINRES R01 AR FGD  
B
```

3.7 AINCHG option

The option AINCHG is used to simulate the following scenarios:

- charge number digits sent by an SCP when TRAVER's AINRES option is present and the response contains parameter ChargeNumber, or
- ANI digits for MF trunks, CPN digits for PRI trunks and charge number digits for ISUP trunks

Note: TRAVER can simulate three responses: Analyze_Route, Forward_Call and Continue. Only the first two can possibly contain parameter ChargeNumber.

In line origination, the AINCHG option is ignored when the AINRES option has not been specified because the originator's ANI is used as the ChargeNumber (unless it is specified by the SCP). ANI does not exist for all trunks, therefore, AINCHG must be specified for TRAVER or GTV defaults to zeros.

To achieve maximum flexibility, the AINCHG accepts up to 18 digits as input, however, any input that is not 10-digits long is left-justified and is filled with zeros (or truncated) to 10 digits before it is used as the source of the GTV to index into table C7GTT.

Option AINCHG must be preceded by AIN. When both AINCHG and AINMQG options are specified, option AINCHG must precede option AINMQG.

See Section 3.14 “TRAVER example with AINCHG option” on page 104.

3.8 AINMQG option

The AINMQG option allows for the creation of query messages at certain TDPs. TRAVER saves the query message to a file that can be subsequently loaded into the TSTQuery tool for transmission to an off-board processor (for example, an SCP or adjunct).

Figure 9 provides a sample TRAVER output resulting from the AINMQG option.

Figure 9 TRAVER output resulting from AINMQG option

```
>traver l 6215000 16215002 AINMQG nt
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Building the AINMQG Query Message.
Please enter storage location:<File Device> <File Name>
>sfdev podp
AINMQG Query message saved in file.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++
```

Figure 10 provides an example of the output file resulting from the AINMQG option. The file can subsequently be imported by the TSTQuery tool and sent to an off-board processor (for example, an SCP or adjunct).

Figure 10 TRAVER file resulting from AINMQG option

```
SetAppl R02
SetMsg Info Analyzed
BearerCapability speech
CalledPartyID 3 1 6136215002
CallingPartyID 1 1 0 3 6136215000
Carrier 1 0110
ChargeNumber 3 1 6136215000
Lata 0 0 111
TriggerCriteriaType npa
UserId Dn 6136215000
```

Table 4 on page 61 lists the TDPs and switch call-related messages against the AIN triggers (by the names used in the DMS-100 SSPs). The table details

where TRAVER can build an AIN message in this release, along with the parameters supported in AINMQG-TRAVER for these messages.

Table 4 TRAVER / AINMQG Supported Messages

TDP / Switch Call Related Messages	Info_ Analyzed	Info_ Collected	Network_ Busy	Origination_ Attempt	Termination_ Attempt
Triggers Parameters	SFC PODPFEAT CDPCODE SDS N11 ONEPLUS SPECIFIED_CARRIER INTERNATIONAL OPERATOR_SERVICES	OFFHKDEL PRIB INTEROFF	AFR	OFFHKIMM	TERM_ATT
AccessCode	AINMQG	AINMQG(*)	-	-	-
ACG_ Encountered	X	X	X	X	X
AMASequenceNumber	X	X	X	X	X
Amp1	X	X	X	X	X
Amp2	X	X	X	X	X
BearerCapability	AINMQG	AINMQG	AINMQG	AINMQG	AINMQG
CalledPartyID	AINMQG	-	AINMQG	-	AINMQG
CalledPartyStationType	-	-	-	-	X
CallingPartyBGID	AINMQG	-	-	-	-
CallingPartyID	AINMQG	AINMQG	AINMQG	AINMQG	AINMQG
Carrier	AINMQG	AINMQG	AINMQG	AINMQG	-
ChargeNumber	AINMQG	AINMQG	AINMQG	AINMQG	AINMQG
ChargePartyStationType	AINMQG	AINMQG	AINMQG	AINMQG	AINMQG
CollectedAddressInfo	AINMQG	AINMQG	-	-	-
CollectedDigits	AINMQG	AINMQG	-	-	-
CTRConnection	X	-	-	-	X
ExtensionParameter	X	X	X	X	X
GenericAddressList	X	X	-	-	-
GenericName	-	-	-	-	X
LATA	AINMQG(*)	AINMQG(*)	AINMQG(*)	AINMQG(*)	AINMQG(*)
NetworkSpecificFacility	AINMQG	-	-	-	-

Table 4 TRAVER / AINMQG Supported Messages (Continued)

TDP / Switch Call Related Messages	Info_ Analyzed	Info_ Collected	Network_ Busy	Origination_ Attempt	Termination_ Attempt
Triggers Parameters	SFC PODPFEAT CDPCODE SDS N11 ONEPLUS SPECIFIED_CARRIER INTERNATIONAL OPERATOR_SERVICES	OFFHKDEL PRIB INTEROFF	AFR	OFFHKIMM	TERM_ATT
NotificationIndicator	-	-	X	X	-
OriginalCalledPartyID	X	X	X	-	X
Prefix	AINMQG	AINMQG	AINMQG	-	-
RedirectingPartyID	X	X	X	-	X
RedirectionInformation	X	X	X	-	X
RTPServiceIndicator	-	-	-	-	X
Sap	X	X	X	X	X
STRConnection	X	-	-	-	X
TCM	X	X	X	-	X
TriggerCriteriaType	AINMQG	AINMQG	AINMQG	AINMQG	AINMQG
UserID	AINMQG(*)	AINMQG(*)	AINMQG(*)	AINMQG(*)	AINMQG(*)
VerticalServiceCode	AINMQG	X	-	-	-
<p>Key to the table: AINMQG = Supported by TRAVER/AINMQG - = Not defined in GR-1299 message definition. X = In GR-1299 but not supported by TRAVER/AINMQG (*) = Partially supported</p>					

When TRAVER detects that a trigger's criteria has been met, it builds the appropriate message from the TRAVER call context (to the extent it is available). When values for any portion of the message (for example, the charge number for a trunk originated call) are not available in the existing TRAVER call context, then the TRAVER user is interactively prompted for the values required. When the parameter is mandatory, the user must provide a value. When the parameter is optional, the user can choose not to provide a value.

Table 5 summarizes parameters that are supported by TRAVER for the AINMQG option. It shows for each agent how the parameter values are determined from the call scenario, based on the type of agent the trigger is associated with.

Table 5 Summary of TRAVER methods to generate parameters

Parameter	Agent				
	line	PRI	ISUP	MF	AC
AccessCode	D	-	-	-	-
BearerCapability	D	D	D	D	-
CalledPartyID	D	D	D	D	-
CallingPartyBGID	D	D	D	D	-
CallingPartyID	D	D	D/P	P	-
Carrier	-	D	D	D/P	-
ChargeNumber	D	D	D	D	-
ChargePartyStationType	D	D/P	P	D	-
CollectedAddressInfo	D	D	D	D	-
CollectedDigits	D	D	D	D	-
LATA	D	D	D	D	-
NetworkSpecificFacilities	-	D/P	-	-	-
Prefix	D	D	-	-	-
TriggerCriteriaType	D	D	D	D	-
UserID	D	D	D	D	-
VerticalServiceCode	D	-	-	-	-
Legend					
<ul style="list-style-type: none"> • D = derived from call context and/or static datafill • P = prompted for when needed • - = Not supported or not applicable 					

The following sections detail how the parameters are populated by TRAVER.

Some sections provide a precedence list for the population of parameters by TRAVER. These lists contain conditions based on command line options, data ll, or other data. TRAVER uses these lists sequentially until it encounters a condition that is satisfied, at that point it populates the parameter based on the satisfied condition.

The following sections focus on the differences between CallP and TRAVER simulation using the AINMQG option.

3.8.1 AccessCode

The following access codes are supported:

- access code to public environment (9+)
- access code to private routes (ESN (6+))
- SCP feature access codes (*XX)

All access codes are data lled in IBNXL A and must be matched in this table for the parameter to be populated.

The AccessCode parameter uses the AINDigits format and its elds are populated as follows:

- nature of number is set to “not applicable”
- numbering plan is set to “unknown or not applicable”
- digits contains an access code of one to ve digits

3.8.2 BearerCapability

Parameter BearerCapability is populated using the following sequence:

- entry on the command line with the BC option
- BearerCapability dialed (for private agents)
- subscribed in one of the following tables: KSFEAT, IBNFEAT, DNATTRS, TRKGRP
- the default BearerCapability in table OFCENG or ‘56KDATA’ for data calls

Table 6 shows the mapping between TRAVER BearerCapability values and those populated in parameter BearerCapability.

Table 6 Mapping of TRAVER BC option to AIN BearerCapability values

TRAVER BC option value	AIN BearerCapability value
SPEECH	speech
64KDATA	b64kbps

Table 6 Mapping of TRAVER BC option to AIN BearerCapability values (Con-

TRAVER BC option value	AIN BearerCapability value
64KX25	packetModeData (Note 1)
56KDATA	b56kbps
DATAUNIT	b56kbps
64KRES	b64kbps (Note 2)
3_1KHZ	f31kHzaudio
7_KHZ	f7kHzaudio
VOICE_DATA	(Note 3)
64K_RATE_AD_DATA	(Note 3)
<p>Note 1: Not supported by AIN Service Enablers</p> <p>Note 2: Not supported due to GR restriction</p> <p>Note 3: Not supported by DMS-100 switches</p>	

3.8.3 CallingPartyBGID

Parameter CallingPartyBGID is sent to provide the business group information associated with the originating user. The business group identifier either identifies a basic business group (BBG) or a multi-switch business group (MBG).

Parameter CallingPartyBGID can be derived from data II for a line, BBG trunk, and MBG trunk originators. For other SS7 originators, the BGID information is available at trigger SDS (PODP) only when it is signaled by the originating trunk.

To indicate the MBG information, the originating trunk would have signaled a value in a call scenario that included the MBG optional parameter on the TRAVER / AINMQG command line. The TRAVER MBG command line parameter is available when the originating agent is a trunk. Standard TRAVER command line components must be entered. After the TRAVER command and the MBG-specific data have been entered, the keyword MBG must be specified, followed by the BGID, the line privilege (LP) used by IBN translations as the network class of service, and the generic address parameter (GAP), that is used to transport private numbers.

The following example shows how to specify the national BGID number 4, with class of service 0 and no GAP. The originating switch translated the dialed digits into a reference for DN 7228049 and sent the call to this switch.

The GAP value is not yet used by TRAVER / AINMQG. Entering N for the GAP states that no GAP is associated with the incoming call, otherwise, the digits dialed by the originator should be provided here.

Figure 11 on page 67 provides a sample TRAVER output using MBG and AINMQG options.

Figure 11 Sample TRAVER output using MBG and AINMQG options

```

>traver tr isvapn2wibn mbg natl 4 0 n 5727228049 ain ainmqg b

MBG CALL: CUST xla on Cd_DN
TABLE TRKGRP
ISVAPN2WIBN IBNT2 0 ELO NCRT COMKODAK 0 MIDL 0 7224111 ANSDISC 0 Y N N N N N N 0 0
N 0 0 0 0 N N N N N N N N Y FGD Y N NATL $
TABLE CUSTSTN
COMKODAK AIN AIN CDPCODE
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIG
TABLE NCOS
COMKODAK 0 0 0 KDK0 ( OHQ 0 TONE_OHQ) ( CBQ 0 3 N 2)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
COMKODAK PXDK CXDK CUSTFEAT 0 KDK
TABLE DIGCOL
KDK 5 COL L 1
TABLE IBNXLA: XLANAME PXDK
PXDK 572 ROUTE N N 3 N 3 15 NDGT Y S AIN_DUMMY_TRK $
TABLE DIGCOL
NDGT specified: digits collected individually
AIN Info Collected TDP: no subscribed trigger.
TABLE FNPA7DIG
TUPLE NOT FOUND
TABLE TRIGGRP
CDPCODE INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
. . TABLE TRIGDIG
. . CDPDIG CDPCODE 572 CDPCODE TRANS EVENT TCAP R02 SS7 AINROCK DFLT $
. . . TABLE C7GTTYPE
. . . AINROCK ANSI7 5 $
WARNING: AINCHG option is not specified for trunk on command line and
GTV could not be determined and defaults to 0.
. . . TABLE C7GTT
. . . AINROCK 0000000000 0000000000 PCSSN (AINTATM_RTESET2 AIN01 0) $ SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Building the AINMQG Query Message.
Please enter CallingPartyID: <Nature of Number> <Digits>
>3 6137222
Defaults are used for <Numbering Plan>, <Presentation Indicator>, <Screening
Indicator>
Please enter ChargePartyStationType: <0..99>
>27
Please enter storage location:<File Device> <File Name>
>sfdev cdp4

AINMQG Query message saved in file
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met
Querying the database would occur now
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

```

The following list provides a breakdown of the sample TRAVER output in Figure 11:

- The attendant status (AttSt) field indicates whether the party identified by the party selector is an attendant. TRAVER / AINMQG sets this value to No Indication. The field's value can be reset to Attendant line in TstQuery prior to sending the constructed message.
- The business group identifier type (BGID tp) subfield indicates the service associated with the business group identifier. The value indicating BG Identifier is always used.
- The line privileges information indicator (LP II) indicates whether the restrictions are restricted line privileges or customer-defined line privileges. GR-1299-CORE indicates that only the restricted line privileges value is legal in the current network; customer-defined line privileges is reserved for future use, but is available from the command line.
- The party selector subfield indicates the call party that the business group information applies. TRAVER / AINMQG always sets this value to calling party number. Note that redirecting number is the other legal value for the party selector field. It can apply in simulations of a both intra- and inter-switch call forwarding scenarios. The party selector field can be reset to this value in TstQuery prior to sending the generated message.
- The business group ID is a 3-octet field used to indicate the business group the party identified by the party selector belongs to. Business group IDs are uniquely assigned to customers across all networks as the business group customer subscribes to business group services. For MBG lines and trunks this is derived from table BGDATA and/or the MBG option to a trunk originator on the command line. When both sources are available, then the command line option's value is used.
- The Sub-group ID is a 2-octet field defined by the customer to indicate the sub-group membership of the party, identified by the party selector, within the customer's organization. Since the subgroup-ID field is not supported by ISDN user part (ISUP) messaging on the DMS-100 SSP, TRAVER / AINMQG does not prompt for a value for this field; instead it always zeros out the octets that GR-1299 defines as no indication.
- The LP field is defined by the customer to indicate the line privileges of the party identified by the party selector. When the LP II field is set to restricted line privileges, the LP field is divided into two subfields to represent the terminating and originating restrictions, respectively.

Currently GR-1299-CORE indicates that only the unrestricted and spare values are expected in the current network. TRAVER / AINMQG defaults to the unrestricted value. Note that this field is unrelated to the LP field of the MBG TRAVER option.

3.8.4 CalledPartyID

This parameter contains the address of the called party when the SSP detects the SDS, N11 or Termination_Attempt trigger. It follows the AIN Digits format.

For public calls triggering at SDS and N11, Table 7 specifies the values that can populate the CalledPartyID fields.

Table 7 CalledPartyID field values for public calls

CalledPartyID field	Values
Numbering Plan	ISDN
Digits	10 digits for national or local calls 3 to 5 digits for international calls 3 to 5 digits for international calls

The value of the Nature of Number fields is determined through translations.

For private calls triggering at Termination_Attempt, Table 8 specifies the values that can populate the CalledPartyID fields:

Table 8 CalledPartyID field values for private calls

CalledPartyID field	Values
Nature of Number	Not Applicable
Numbering Plan	Private
Digits	10-digit address

3.8.5 CallingPartyID

Table 9 contains the rules TRAVER uses to populate the fields of the CallingPartyID parameter.

Table 9 TRAVER population of CallingPartyID parameter based on call type

CallingPartyID field	Line Originator	Trunk Originator
Digits	10-digit DN of the originating line (when a 7-digit then use prefix NPA)	The values are prompted for. To see the values that are possible for these fields, see TR317 for ISUP and see TR1268 for PRI. (Note 1)
Nature of Number	unique national number or non-unique national number	
Numbering Plan	ISDN	
Presentation Restriction Indicator	presentation allowed or presentation restricted (Note 2)	
Screening Indicator	network provided	
<p>Note 1: For PRI trunks the mapping in document TR444 is used and for ISUP trunks there is a 1:1 mapping.</p> <p>Note 2: This information is found in either DNATTRS or the LENFEAT, IBNFEAT or KSETFEAT tables.</p>		

For trunks, the digit field is populated as follows:

- for ISUP trunks, prompt
- for PRI trunks (in order of precedence):
 - prompt
 - BILLNO in LTDATA
- for MF trunks
 - when the trunk is PX, use BILLNO in TRKGRP
 - prompt
- for VFGs, prompt

3.8.6 Carrier

Parameter Carrier contains the Carrier Selection information and the Carrier Identification, identifying where a call should be routed. Parameter Carrier is only applicable when the office is an equal access end office (EAEO).

The carrier is specified as XXX or XXXX and it can be entered on the command line, picked up through translations or subscribed. In all cases, the CarrierID field of this parameter is derived from table OCCINFO, unless the CarrierID was specified in a response to a prompt. Unless otherwise specified, the Carrier Selection field is populated with “Selected carrier identification code presubscribed and not input by calling party”.

At trigger Off-Hook_Immediate (applies to lines only) the carrier is populated with the primary inter-LATA carrier. When no inter-LATA carrier is subscribed to by the user, the of ce default inter-LATA carrier is used. Otherwise, parameter Carrier is not populated at trigger Off-Hook_Immediate.

At other triggers the Carrier ID is chosen in the following order:

- when the call is a public 0- operator assisted call, populate the Carrier ID with the “LEC” carrier code (0110)
- at the Info_analyzed and Network_Busy TDPs, when the agent is an ATC trunk then populate the CarrierID with the “LEC” carrier code (0110)
- when the 10XXX, 101XXXX, “tns” or “cic” parameter is specified on the command line
 - Carrier is picked up from command line
 - for trunks, the Carrier Selection field is populated with “No indication”
 - for lines the value of the Carrier Selection field is dependent on the user’s carrier presubscription status
- when the trigger is Shared_Interof ce, then the carrier specified on the command line is used; Carrier Selection is populated with “No indication”; Otherwise the Carrier parameter is not populated

- for VAPN trunks, at the Info_Collected TDP, trigger Off-Hook_Delay, populate the CarrierID with the “LEC” carrier code
- when the carrier is not specified on the TRAVER command line
 - for public MF and ISUP trunks
 - at trigger Off-Hook_Delay, Network_Busy and Info_Analyzed TDPs, prompt the user for the Carrier ID and Carrier Selection fields
 - in all other cases, parameter Carrier is not populated
 - for private MF and ISUP trunks
 - at the Origination_Attempt and Info_Collected TDPs, parameter Carrier is not populated
 - at the Network_Busy and Info_Analyzed TDPs, populate the Carrier ID with the “LEC” carrier code (0110)
 - for all other agents, CarrierID is picked up through the following
 - translations data (for example, IBNXLA EA option, LTCALLS)
 - subscription data
 - DNATTRS or LTDATA (PRI trunks)
 - FEAT tables, such as LENFEAT, IBNFEAT, KSETFEAT
 - at trigger Off-Hook_Delay, the user’s primary inter-LATA carrier is employed
 - at the Info_Analyzed and Network_Busy TDPs, when the call is intra-LATA non-toll, the “LEC” carrier code is used (0110)

3.8.7 ChargeNumber

This parameter is populated by the AINCHG option when it appears on the TRAVER command line and the supplied charge number is 10 digits. For lines, the AINRES option must also appear on the command line, otherwise, the AINCHG number is ignored. When the AINCHG option does not appear on the command line, the population of the parameter is dependent on the agent as follows:

- for lines (in order of precedence):
 - SPB data filled in one of the “FEAT” tables
 - CallingPartyID parameter value
- for ISUP trunks (in precedence order):
 - BILLNO option on TRAVER command line
 - billing number data filled in the TRKGRP table, when applicable
 - derived CallingPartyID parameter

- for local MF/PTS trunks (in order of precedence):
 - BILLNO option on TRAVER command line
 - billing number data lled in the TRKGRP table, when applicable
- for PRI trunks (in order of precedence):
 - BILLNO option on TRAVER command line
 - billing number data lled in the TRKGRP table, when applicable
 - charge number in Table LTDATA/LTDEFS
 - derived CallingPartyID parameter
- for VFG trunks (in order of precedence):
 - BILLNO in the VIRTGRPS table (only when BILLNO can be derived to 10 digits)
 - derived CallingPartyID parameter

3.8.8 ChargePartyStationType

Parameter ChargePartyStationType indicates the type of calling party based on its originating line information. This parameter is relevant when parameter ChargeNumber is built.

When the originating agent signals for the ANI information of the calling or Charge party, and this parameter is legal for the message, then TRAVER/AINMQG checks whether the required information is provided on the command line (MF trunks only, in the optional parameters BILLNO and BILLMFST_CIC). When required, TRAVER/AINMQG prompts the user for the information required to build the parameter.

Automatic number identification (ANI) forms the Bellcore-defined information digits used to identify the type of originating line, special characteristics of the calling number, or certain service classes. ANI digits include the hotel or motel room identification digits and the restricted sent paid (RSP) digits.

Flexible automatic number identification (F ANI) are special purpose ANI digits defined by the operating company to identify special types or characteristics of calls that have less widespread applications and are not covered by the general Bellcore definitions. FANI information digits apply to outgoing equal access (EA) and the EA corridor, but are subscribed against the originator of the call or a virtual facility group (VFG).

Two-digit pair digits ranging from 00 through 99 can be used as FANI information digits, although the selected digit pair has already been defined by Bellcore as a standard two-digit ANI information digit code.

FANI representation is used to populate parameter ChargePartyStationType when the FANI option is subscribed to the originator. When the FANI option is not subscribed, then the ANI identification classification is used to populate parameter ChargePartyStationType.

When ISUP trunks have subscribed to STATCLASS data II on the switch, ChargePartyStationType can be derived from the STATCLASS data II. The TRAVER does not support OLI information (supplied for TRUNK) as a command line parameter, nor there is any way it can be supplied in the dialed digits. For ISUP trunks, the data II is performed in table SSPTKINF. The user must determine (ahead of time) that the parameter is relevant because the trunk signaled it. Then AINMQG prompts for the ChargePartyStationType only when the call triggers and there is no STATCLASS data II on the switch for the trunk.

For trunk originators TRAVER/AINMQG prompts the user for the ChargePartyStationType value when the trunk is dialed to request ANI ID digits or originating line information and no information is provided on the command line. Note that for some MF trunks the identification digits can be prefixed to parameter <BILLNO> on the command line with the appropriate <BILLMFST_CIC> option value (one of {ST3P, STP, ST2P, ST, STKP}).

When it is possible to determine the number of expected information digits TRAVER / AINMQG indicates the number in the prompt for the digits and enforces this count. When the user wants to override the data II and provide a different number of digits, they can alter the parameter's value after they read the query into TstQuery.

When the originator is not subscribed to FANI, the user should enter a value from Table 10. The legal values and their interpretations are available at the by typing help.

Note: On-line help is available. Type help at the parameter prompt to review the list of supported selections.

Table 10 ANI ChargePartyStation types and value entries

Station Type	Value entry
IdentifiedLine - No Special Treatment	0
ONI (Multiparty)	1
ANIFailure (unavailable)	2
Hotel (without room identification)	6
Coinless, Hospital, Inmate, etc.	7

Table 10 ANI ChargePartyStation types and value entries (Continued)

Station Type	Value entry
InterLATA Restricted	8
AIODListedDNSent	20
Identified (or Combined) line (coin or no coin)	23
800	24
Coin Call	27
AIN 0.1	64
InterLATA restricted - hotel line	68
InterLATA restricted - coinLess line etc.	78
Test Call	95

3.8.9 CollectedAddressInfo

Parameter CollectedAddressInfo contains the digits the user dialed after a VSC or an access code that match triggers AIN VSC, CDPCODE, SFC, PODPFEAT, or INTEROFF. Either parameter CollectedAddressInfo or parameter CollectedDigits can be sent when address digits are present and a trigger at the Info_Collected and Info_Analyzed TDPs is encountered.

Table 11 contains parameter selection criteria. The presence of the VSC or AccessCode is dependent upon whether triggers Customized_Dialing_Plan or Speci c_Feature_Code is applicable to the call. When neither of these triggers is subscribed, then parameter CollectedAddressInfo is built.

Table 11 Determination for sending CollectedDigits or CollectedAddress Info

Message	Trigger	VSC or Access Code present	IBNXLA or XLANAME QueryAft Datafill	- (neither), CollectedDigits or CollectedAddressInfo
Info_Collected	OffHook_Delay (OFFHKDEL), Channel_Setup_PRI (PRIB)	yes	“fixed” or “var”	Digits
			“norm”	Address
	no	-	Address	
	Shared_interoffice_Trunk (INTEROFF)	-		Address

Table 11 Determination for sending CollectedDigits or CollectedAddress Info (Continued)

Message	Trigger	VSC or Access Code present	IBNXLA or XLANAME QueryAft Datafill	- (neither), CollectedDigits or CollectedAddressInfo
Info_Analyzed	Customized_Dialing_Plan (CDPCODE), Specific_Feature_Code (SFC),	yes	"fixed" or "var"	Digits
			"norm"	Address
	Public_Feature_Code (PODPFEAT), One_Plus_Prefix (oneplus), Specified_Carrier, International, Operator_Services	yes	"fixed" or "var"	Digits
			"norm"	Address
	no		Address	

The values used in populating parameter CollectedAddressInfo are identical to those used for parameter CalledPartyID, with the following exceptions:

- The Digits_eld for a local call is populated with just the digits dialed (that is, seven digits, NPA not pre x ed).
- For CDPCODE triggering at extension numbers, the RPRTDIGS_eld of the CDPCODE subscription in table TRIGDIG determines how the digits are populated. For RPRTDIGS with value trans the 10-digit NA number is provided. For RPRTDIGS with value NOTRANS, the digits are provided exactly as they were dialed.

The presentation restriction indicator and screening indicator_elds are not relevant and are not coded.

3.8.10 CollectedDigits

Parameter CollectedDigits contains the digits the user dialed after a VSC, or an access code that matches an AIN VSC, CDPCODE, or PODPFEAT trigger.

Parameter CollectedDigits or parameter CollectedAddressInfo can be sent when address digits are present and one of the following triggers is detected: trigger Off-Hook_Delay, or CDPCODE.

Table 11 "Determination for sending CollectedDigits or CollectedAddress Info" on page 75 indicates the parameter that is built into the message, depending on the matching trigger and the data ll in tables IBNXLA or XLAN AME.

The values used to populate parameter CollectedDigits are as follows:

- When there are additional dialed digits after the access code digits on the TRAVER command line, these digits are used by TRAVER/AINMQG to

populate parameter CollectedDigits. These digits follow a vertical service code, access code, or feature activation indicator.

- Nature of number is coded as not applicable.
- Numbering plan is set to unknown or not applicable.

The presentation restriction indicator and screening indicator elds are neither relevant nor coded.

3.8.11 LATA

Parameter LATA is sent by the SSP to the SCP or adjunct. The appropriate equal access tables must be data lled (for e xample, LATANAME or RATEAREA). The LATA to be used is that of the triggering facility. TRAVER does not support LEAS trunks in the TRKLATA table.

Parameter LATA uses the AINDigits format, with the elds populated as follows:

- nature of number is set to “not applicable”
- numbering plan is set to “unknown or not applicable”
- eld digits contains the digits corresponding to the LA TA are derived through translations (that is, RATEAREA)

Note: The digits are in table LATANAME.

3.8.12 NetworkSpeci cF acilities

Parameter NetworkSpeci cF acilities is sent to identify the particular service requested by an incoming PRI trunk (to be included in a query) or the SCP (when included in a response). A PRI signals the NSF in a Network Speci c Facilities information element (IE) in its SETUP message. This IE is optional.

The SCP can signal an NSF parameter in an Analyze_Route response. When the SCP provides an NSF parameter, use its value for any further TRAVER AIN_RES work for that call.

When the NSF parameter is relevant, the existing NSF parameter is included on the command line as shown in Figure 12 on page 78.

Figure 12 TRAVER NSF option in context

```

>q traver

PERFORMS TRANSLATION VERIFICATION ON <DIGITS>
AS WHEN RECEIVED ON ORIGINATOR <ORIG>. TRACE GIVES A TRACE
OF THE TRANSLATION TABLES WHEN <T>, AND GIVES THE ROUTE
AND DIGIT-TO-OUTPUT DISPLAY WHEN <NT>
Parms: <ORIG> {
        :
        }

<DIGITS OR N FOR NO DIGITS> STRING
[<CDNIE> ...]

[<NSF> {OWTSID [<FACNUM> {0 TO 32767}],
PRVT [<FACNUM> {0 TO 32767}],
IWT [<FACNUM> {0 TO 32767}],

OWT <ZONE> {0,
            1,
            2,
            3,
            4,
            5,
            6,
            7,
            8,
            9,
            A,
            B,
            C,
            ONE},

FX [<FACNUM> {0 TO 1023}],
TIE [<FACNUM> {0 TO 1023}],
ASDS,
LDS,
HM,
SCOCS [<FACNUM> {0 TO 1023}]]

[<TNSIE> ...]

[<AIN_OPTIONS> {AIN [<AIN_CHG> {AINCHG <DIGITS> STRING}]
                [<AIN_MQG> {AINMQG}]}]}

```

When TRAVER is invoked with the AINMQG option, the NSF option, and a PRI originator for a call that triggers at the Info_Analyzed TDP, the TRAVER/AINMQG composes a NetworkSpeci cF acilities value using the following rules for its elds:

- network identi cation is a 3 or 4 decimal, digit carrier identi cation code that is interactively prompted for
- facility coding value is derived from the NSF option on the command line, see Table 12 “Supported Facility coding values” for NSF options.
- The Service Parameter eld is deri ved from the NSF parameter on the command line. It can be up to 5 decimal digits long and indicates the

specific facility (trunk or zone) requested. The NTNA PRI and NI PRI agents currently support up to four decimal digits for the service parameter on the DMS SSP.

Table 12 Supported Facility coding values

Supported Facility Coding Value	NSF Option on TRAVER command line
INWATS Selection	IWT
OUTWATS Selection	OWT <ZONE> {0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, NONE}, or OWTSID [<FACNUM> {0 TO 32767}]
Foreign Exchange Selection (FX)	FX [<FACNUM> {0 TO 1023}]
Terminal Interface Equipment (TIE) Trunk	TIE [<FACNUM> {0 TO 1023}]
Hotel/Motel Service	HM
Selective Class of Call Screening (SCOCS)	SCOCS [<FACNUM> {0 TO 1023}]]]

3.8.13 Pre x

Parameter Pre x is used to indicate that a 1+ pre x was dialed by the user with or without other pre x es. TRAVER/AINMQG builds parameter Pre x when a 1+ pre x is provided in the dialed digits or when the AINRES pre x option is present.

3.8.14 TriggerCriteriaType

This parameter indicates the type of event that caused a trigger to occur. For triggers involving digit criteria, the trigger encountered is determined by the individual, group and of ce subscription data.

Table 472 “TriggerCriteriaType parameter values” lists the triggers that TRAVER can encounter and the corresponding TriggerCriteriaType value populated in parameter TriggerCriteriaType.

Table 13 TriggerCriteriaType parameter values

Trigger Encountered	TriggerCriteriaType Value
Off-Hook_Immediate	offHookImmediate
Off-Hook_Delay	offHookDelay
Channel_Setup_PRI	channelSetupPRI
Shared_Interoffice_Trunk	sharedIOTrunk

Table 13 TriggerCriteriaType parameter values (Continued)

Trigger Encountered	TriggerCriteriaType Value
Specific_Feature_Code	specificFeatureCode
Public_Feature_Code	verticalServiceCode
Customized_Dialing_Plan_Access	customizedAccess
Customized_Dialing_Plan_Intercom	customizedIntercom
three-digit_PODP	npa
four-digit_PODP	npaN
five-digit_PODP	npaNX
six-digit_PODP	npaNXX
seven-digit_PODP	npaNXXX
eight-digit_PODP	npaNXXXX
nine-digit_PODP	npaNXXXXX
ten-digit_PODP	npaNXXXXXX
N11	n11
Termination_Attempt	terminationAttempt
Automatic_Flexible_Routing	aFR
onePlus	onePlus
specifiedCarrier	specifiedCarrier
international	international
Operator_Services	zeroPlus
Note: - = Not applicable	

3.8.15 UserID

This parameter contains the identity of the triggering facility. In situations where triggering occurs at or after the Termination_Attempt trigger the terminating facility is the subscriber of trigger Termination_Attempt.

In the case of the triggering agent being a trunk, since TRAVER never allocates facilities, it cannot know whether the trunk is PRI or ISUP. Therefore, by default, trunk subgroup 0 is used as the agent.

UserID is a mandatory query parameter. Therefore, for lines, VFGs and PRI trunks, failure to derive a calling party number for building the UserID

parameter results in no query message being built and nothing being saved to file. TRAVER issues a warning to this effect.

The values supported for the UserID parameter are:

- DN
 - for a line, uses the ten digit DN of the line
 - for PRI trunks, the DN is derived from the calling party number. The calling party number is derived
 - when the received or derived calling party number is ten digits in length then it is used to populate parameter UserID
 - otherwise, the default calling party number associated with the trunk group is taken from table LTDATA (DN option) and is used to build parameter UserID
 - otherwise when a ten-digit DN is associated with the trunk group in the BILLDN field of table TRKGRP, then it is used to populate parameter UserID.
 - for VFGs the 10-digit derived CallingPartyID is used
- TrunkGroupID—populated with the contents of field ADNUM in the CLLI table, corresponding to the name of the public trunk.
- PrivateFacilityGID—populated with the contents of field ADNUM in table CLLI, corresponding to the name of the private trunk.

3.8.16 VerticalServiceCode

The VerticalServiceCode parameter contains the SCP vertical service code collected from the SSP (usually of the form *XX). The SCP VSC parameter is only supported for RES lines at the PFC trigger.

The fields of this parameter are populated as follows by TRAVER:

- Nature of Number is set to “not applicable”.
- Numbering Plan is set to “unknown or not applicable”.
- the digits field contains a VSC of one to ten digits inclusive, but the first digit can be an asterisk (*) or octothorpe (#). Both the asterisk or octothorpe should be sent with the digits in a query message. This field is populated in the same way as the SCP feature access codes (*XX) in the AccessCode parameter.

3.9 AINRES option

The TRAVER option, AINRES, simulates processing of certain responses from an off-board processor. With this option, the TRAVER displays the AIN information encountered after the specified response is received. Hence, none

of the pre-query information is displayed. There are four response messages supported by the AINRES option:

- *Analyze_Route*—With this response, the terminating agent parameter must be a DN, a route list or a carrier. When the terminating agent is a route list, the call resumes at the Selecting Route point in call and the only TDPs that can be encountered are Network Busy and Termination Attempt. When the terminating agent is a DN or carrier, simulation of the call resumes at the Analyzing Information point in call and only the Information Analyzed, Network Busy and Termination Attempt TDPs can be encountered.
- *Forward_Call*—This option operates in the same manner as the Analyze_Route response option.
- *Continue*—TRAVER output begins at the Information Analyzed TDP. The purpose of the Continue response is to instruct the SSP to continue processing at the next trigger in the Information Analyzed TDP. Since this is only a simulated call and it is not known that trigger was last processed, TRAVER displays all triggers subscribed by the originator at the Information Analyzed TDP and continues simulation of the call. The Network Busy and Termination Attempt TDPs can be encountered.
- *Authorize_Termination*—The AINRES TRAVER AT (Authorize Termination) option allows routing and billing information to be displayed after encountering the Termination Attempt TDP. When this option is used, the Origination Attempt (ORIGATT), Information Collected (INFOCOL) and Information Analyzed (INFOANAL) TDPs are not displayed in the TRAVER, but the Termination Attempt (TERMATT) TDP is displayed.

See Section 3.15.7 “TERMATT” on page 112.

3.9.1 TRAVER for AIN Service Enablers

TRAVER supports R02 as a parameter to the AINRES option. When set to R02, AINRES behaves identically to R01 AINRES except that the STR option is also support. The STR option allows veri cation of routing to the IP address.

Also, the response to the STR option is identical to the response for the AR value.

When using TRAVER to simulate the routing of a call to an IP in response to a Send_To_Resource message, TRAVER has the following limitations:

- TRAVER encounters any applicable AIN triggers and stop processing, displaying a message indicating that a query is launched to the database, whereas the real call does not trigger.
- Although the actual routing to an IP fails when the terminator is not an ISUP or PRI trunk, no error message is displayed by TRAVER in this case.

To avoid AIN triggers when simulating the routing of a call to an IP, use the AINRES CONT option to bypass triggering at all AIN TDPs up to and including the Information_Analyzed TDP.

For example, to simulate the routing to an IP on an intermediate or remote SSP from an ISUP trunk to another ISUP trunk (for the intermediate SSP scenario) or a PRI trunk (for the remote SSP scenario), enter the following command:

```
> traver tr <CLLI of incoming_trunk>  
<inpulsed_digits> ainres r02 cont b
```

See Section 3.16 “TRAVER example of routing to an IP” on page 114.

3.9.2 Collect_Information response message

The AINRES portion of TRAVER processes the Collect_Information response message.

TRAVER supports the same set of translations related message parameters of the Collect_Information message as the DMS SSP call processing portion, namely CollectedDigits.

Collect_Information response processing in TRAVER is very similar to a regular TRAVER without the AINRES option. The CollectedDigits parameter can be treated in much the same way as the terminating DN parameter of a regular TRAVER invocation. One major difference is that the CollectedDigits parameter can contain multiple dialing plan elements such as DNs and feature codes. The multiple dialing plan elements are normally separated by either a ‘*’ or ‘#’ digit. (Note: ‘b’ represents ‘*’ and ‘c’ represents ‘#’ in TRAVER)

In one invocation of TRAVER the `rst` dialing plan element in the CollectedDigits parameter is extracted. This extracted dialing plan element corresponds to the terminating DN parameter of TRAVER. Therefore, once the `rst` dialing plan element is parsed, it is translated by existing TRAVER code as in the case of a regular TRAVER. This is true where the division between two dialing plan elements is unambiguous (that is when dialing plan elements are delimited by ‘#’ or ‘*’). The ambiguous case can occur when two dialing plan elements are not separated by a delimiter. In this case we say that a dial plan element has excess digits since some digits at the end do not belong to it. TRAVER handles these cases by mapping the `rst` digits to some DN or feature code and ignoring the rest.

Note: Subsequent dialing plan elements require further invocations of TRAVER since only one dialing plan element is processed in one invocation.

Another difference between the Collect_Information and regular TRAVER cases is the TDPs that display. In a regular TRAVER, the Origination_Attempt,

Info_Collected, Info_Analyzed, and Termination_Attempt TDPs can be displayed. In the Collect_Information case, the Origination_Attempt TDP never gets displayed. The reason for the difference is that TRAVER with a Collect_Information response begins processing at the Collect_Information PIC, whereas a regular TRAVER begins processing at the O_Null PIC. Therefore any triggers that can be encountered at the Info_Collected, Info_Analyzed, and Termination_Attempt TDPs can be triggered when the Collect_Information (COLINF) response has been specified.

In the case of an ISDN originating agent, the Bearer Capability routing characteristic can be used with the COLINF option. In order to use it, the BC option must be included on the command line. The COLINF option is not compatible with all other types of ISDN routing characteristics. TRAVER terminates with an error message when the CDN, TNS, or OSA options appear whenever the COLI option is used.

Note that the AINRES FGD option is not compatible with COLINF. When present, TRAVER terminates with an error message. Also the DIGCONV option is not compatible with COLINF. When DIGCONV is present, then it is disabled and a warning message is displayed. The rest of the TRAVER output appears as when that option was never entered.

3.9.2.1 Example 1: Collect_Information with ACB

From an IBN line (6213811), CollectedDigits has a single dialing plan element, ACB feature code (*66). See TRAVER 13 on page 85

An AIN Collect_Information response is received at the SSP. The call routes to the ACB feature.

3.9.2.2 Example 2: Collect_Information with CNDB

From an IBN line (6213811), CollectedDigits (*67#6211811) has two dialing plan elements, CNDB feature code (*67) and the terminating DN (6211811) (DN that the CNDB feature applies to). See TRAVER 14 on page 86 and TRAVER 14 on page 86.

TRAVER 15 on page 87 shows the resulting TRAVER for the first dialing plan element. An AIN Collect_Information is received from the SSP. The call routes to the CNDB feature. The CNDB feature expects digits. The second dialing plan element (6211811) contains the digits used by CNDB. This is shown in TRAVER 15 on page 87 where a separate TRAVER invocation is used to see the call route to the second dialing plan element.

3.9.2.3 Example 3: Collect_Information with ISDN originator using Bearer Capability (BC)

From an ISDN line (7225115) with 56KDATT Bearer Capability, CollectedDigits (25511) has a single dialing plan element containing a 9 plus a 7 digit DN. See TRAVER 16 on page 89.

An AIN Collect_Information message is received from the SSP. No more triggers are found so the call attempts to terminate to line 6561234 over an ISUP trunk that has been data lled to make the call route over ISUPIBNOG (a bearer capability of 56KData is speci ed).

3.9.2.4 Example 4: Off-Hook-Delay trigger after Collect_Information response

From a line (6218007), CollectedDigits (6136212111), the TRAVER shows the Off-Hook-Delay trigger activating after a Collect_Information response is sent from the SCP. This results in a new query being sent to the SCP. See TRAVER 17 on page 92

3.9.2.5 Example 5: Equal Access routing

From a line originator (6212111), and CollectedDigits (1048816707227512) that has a CAC + DN, the TRAVER shows the call routing over a carrier trunk (ISUPITEAOG). See TRAVER 18 on page 93.

Figure 13 Sample TRAVER output for an ACB feature code

```
>traver l 6136213811 n ainres r02 colinf b66 b
TABLE IBNLINES
HOST 00 1 01 21 0 DT STN RES 6213811 400 613_EAP1_210 L613_LATA1_0 613 $
TABLE LINEATTR
400 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_EAP1_210 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_EAP1_210 FR01 613 EAP1 TSPS Y RESG200 0 0 $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
RESG200 AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE NCOS
RESG200 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG200 NXLA RXCMN200 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
NCOS FEAT XLA name is NIL. Go to next XLA name.
TABLE IBNXLA: XLANAME RXCFNXXX
RXCFNXXX 66 FEAT N N ACBA
AIN Info Collected TDP: no subscribed trigger.
TABLE TRIGGRP
```

Figure 13 Sample TRAVER output for an ACB feature code (Continued)

```

CUSTTRIGGRP_CDP INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

Feature ACBA          not supported by TRAVER

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

Figure 14 provides a sample TRAVER output for a Collect_Info CNDB+DN.

Figure 14 Sample TRAVER output for a Collect_Info CNDB+DN

```

>traver l 6136213811 n ainres r02 colinf b67c6211811 b
WARNING: ONLY COLINF DIGITS 'B67' ARE CONSIDERED
TABLE IBNLINES
HOST 00 1 01 21 0 DT STN RES 6213811 400 613_EAP1_210 L613_LATA1_0 613 $
TABLE LINEATTR
400 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_EAP1_210 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_EAP1_210 FR01 613 EAP1 TSPS Y RESG200 0 0 $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
RESG200 AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE NCOS
RESG200 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG200 NXLA RXCMN200 RXCFNXXX 0 RES

```


Figure 14 Sample TRAVER output for a Collect_Info CNDB+DN (Continued)

```

TABLE DIGCOL
RES specified: RES digit collection
NCOS FEAT XLA name is NIL. Go to next XLA name.
TABLE IBNXLA: XLANAME RXCFNXXX
RXCFNXXX 67 FEAT N N CNDB
AIN Info Collected TDP: no subscribed trigger.
TABLE TRIGGRP
CUSTTRIGGRP_CDP INFOANAL
. CDP CODE ( DG CDPDIG)$ NIL
Trigger AIN CDP CODE is applicable to customer group.
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

Feature CNDB          not supported by TRAVER

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

Figure 15 Sample TRAVER output for a routing number

```

>traver l 6136213811 n ainres r02 colinf 6211811 b
TABLE IBNLINES
HOST 00 1 01 21 0 DT STN RES 6213811 400 613_EAP1_210 L613_LATA1_0 613 $
TABLE LINEATTR
400 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_EAP1_210 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_EAP1_210 FR01 613 EAP1 TSPS Y RESG200 0 0 $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
RESG200 AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL

```

Figure 15 Sample TRAVER output for a routing number (Continued)

```
TABLE NCOS
RESG200 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG200 NXLA RXCMN200 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
TABLE IBNXLA: XLANAME RXCMN200
RXCMN200 6 AMBIG RXCFNXXX 2 RXCML200
NUMBER OF DIGITS GREATER THAN 2 RXCML200 TRANSLATOR ARE USED.
TABLE IBNXLA: XLANAME RXCML200
TUPLE NOT FOUND
Default from table XLANAME:
RXCML200
      (NET N N 0 N NDGT N Y GEN ( LATTR 200 613_P621_200 L613_NILLA_4)
      (EA ITT Y 0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
200 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_200 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_200 FR01 613 P621 TSPS Y RESG200 0 0 $
TABLE RATEAREA
L613_NILLA_4 L613 NIL NILLATA $
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 621 632 N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 316) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 621 621 DN 613 621
TABLE TOFCNAME
613 621 $
TABLE DNINV
613 621 1811 L HOST 00 1 03 21
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
```

Figure 15 Sample TRAVER output for a routing number (Continued)

```

TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCR
. 621 623
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
AIN Info Collected TDP: no subscribed trigger.
TABLE FNPA7DIG
TUPLE NOT FOUND
TABLE TRIGGRP
CUSTTRIGGRP_CDP INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                6136211811          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

Figure 16 Sample TRAVER output of a Collect_Info response for an ISDN Originator

```

>traver l 7225115 n bc 56kdata ainres r02 colinf 96561234 b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR

```

Figure 16 Sample TRAVER output of a Collect_Info response for an ISDN Originator (Continued)

```

. 56KDATA ( BC 56KDATA $) $
TABLE KSETLINE
ISDN 121 1 DN Y 7225115 COMKODAK 0 0 613 (SFC) $ BRI UNDEF N $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE KSETFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
COMKODAK AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE NCOS
COMKODAK 0 0 0 KDK0 ( OHQ 0 TONE_OHQ) ( CBQ 0 3 N 2) ( ACR N) $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
COMKODAK PXDK CXDK FTCOMM 0 KDK
TABLE DIGCOL
KDK 9 RPT
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
TABLE IBNXLA: XLANAME PXDK
TUPLE NOT FOUND
Default is to go to next XLA name.
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
TABLE IBNXLA: XLANAME CXDK
CXDK 9 NET N Y 1 Y POTS Y N DOD N 80 613_P621_0 L613_NILLA_4 NONE $
TABLE DIGCOL
POTS specified: POTS digit collection
TABLE LINEATTR
80 IBN NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_NILLA_4 L613 NIL NILLATA $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 65 660 N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N

```

Figure 16 Sample TRAVER output of a Collect_Info response for an ISDN Originator (Continued)

```

TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 316) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 656 656 LRTE 11
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 11 T OFRT 40
. . TABLE OFRTMAP
. . . 56KDATA 40 200
. . TABLE OFRT
. . 200 N D ISUPIBNOG 0 N N
. . EXIT TABLE OFRT
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNPACONT results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCR
. TUPLE NOT FOUND. DEFAULT IS NON-LOCAL
TABLE PFXTREAT
OPTL NP N DD UNDT
TABLE CLSVSCRC
AIN Info Collected TDP: no subscribed trigger.
TABLE FNPA7DIG
TUPLE NOT FOUND
TABLE TRIGGRP
CUSTTRIGGRP_CDP INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

Excess digits were discarded, octothorpe is
considered end of dialling character

```

Figure 16 Sample TRAVER output of a Collect_Info response for an ISDN Originator (Continued)

```
DIGIT TRANSLATION ROUTES

1 ISUPIBNOG                6561234                ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

Figure 17 Sample TRAVER output of trigger Off-Hook_Delay after a Collect_Info Response

```
>traver l 6136218007 n ainres r02 colinf 6211811 b
TABLE LINEATTR
18 4FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_NILLA_4 L613 NIL NILLATA $
TABLE DNATTRS
613 621 8007
(PUBLIC ( NAME 800+_RES_B) (NONUNIQUE ) )$ $
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
HOST 00 0 16 21 R1 AIN AIN SESIM_OHD
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 621 632 N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 316) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 621 621 DN 613 621
TABLE TOFCNAME
613 621 $
TABLE DNINV
613 621 1811 L HOST 00 1 03 21
```

Figure 17 Sample TRAVER output of trigger Off-Hook_Delay after a Collect_Info Response

```

TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCR
. 621 623
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
TABLE TRIGGRP
SESIM_OHD INFOCOL
. OFFHKDEL ( CT VBINFO) ( ESC )$ SESIMINF
Trigger AIN OFFHKDEL is applicable to individual POTS line.
Trigger AIN OFFHKDEL: Trigger is active.
  (Use AINCI CHANGESTATE command to alter activation state.)
. . TABLE TRIGESC
. . TUPLE NOT FOUND
. . TABLE TRIGINFO
. . SESIMINF EVENT TCAP R02 SS7 AINBLUES DFLT $
. . . TABLE C7GTTYPE
. . . AINBLUES ANSI7 11 $
. . . TABLE LENFEAT
. . . TUPLE NOT FOUND
. . . TABLE C7GTT
. . . AINBLUES 6136218007 6136218007 PCSSN (SIMTOOL RTESET SIMTOOL 0) $
SSN
AIN Info Collected TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Collected TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

```

Figure 18 Sample TRAVER output for Collect_Information equal access

```
>traver l 6136218007 n ainres r02 colinf 1048816707227512 b
```

Figure 18 Sample TRAVER output for Collect_Information equal access (Continued)

```

TABLE LINEATTR
18 4FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
613 621 8007
(PUBLIC ( NAME 800+_RES_B) (NONUNIQUE ) )$ $
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10488 10488 EA DD 5 P PEA1 ITT Y OFRT 907 5 16 N
. . TABLE OFRT
. . 907 CND EA INTNL SK 2
. . N D ISUPITEAOG 0 D077 N
. . CND ALWAYS SK 1
. . N D ISUPITEAOG 0 D123 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE STDPRTCT
PEA1 ( 1) ( 0) 2
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 1 1 EA DD 1 T NA ITT N
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 316) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 670 671 HNPA 0
. 722 722 DN 613 722

```


Figure 18 Sample TRAVER output for Collect_Information equal access (Continued)

```

TABLE TOFCNAME
613 722 $
TABLE DNINV
613 722 7512 L HOST 00 1 10 06
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNP results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCR
. TUPLE NOT FOUND. DEFAULT IS NON-LOCAL
TABLE PFXTREAT
OPTL DD N DD UNDT
TABLE CLSVSCRC
EA:Local override does not apply to this call.
TABLE LATA1
LATA1 670 INTER INTER STD
TABLE OCCINFO
ITT 0488 EAP Y Y Y Y Y N N N Y Y N LONG 14 FGRPC N N N N N N N N N N N N N N N Y
N Y
TABLE EASAC
TUPLE NOT FOUND
OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP
DEFINED
Using Equal Access (EA) route OFRT 907 from Pretranslation
TABLE OFRT
907 CND EA INTNL SK 2
N D ISUPITEAOG 0 D077 N
CND ALWAYS SK 1
N D ISUPITEAOG 0 D123 N
EXIT TABLE OFRT
AIN Info Collected TDP: no subscribed trigger.
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

Figure 18 Sample TRAVER output for Collect_Information equal access (Continued)

```
DIGIT TRANSLATION ROUTES

1 ISUPITEAOG          D0776707227512      ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

3.10 TRAVER and the DMS trigger item interface

TRAVER supports trigger items implemented in the DMS Trigger Item Provisioning Interface.

When the value of the AIN_OFFICE_TRIGGRP tuple in the DMS table OFC VAR is `TIID' TRAVER performs of ce wide trigger checking using the Trigger Item Provisioning Interface.

When a supported digit string based trigger (SDS, N11, LNP) is subscribed at the INFOANAL TDP, TRAVER displays a message indicating whether the trigger is applicable or not at this TDP.

When the following conditions occur:

- the table name “TRIGITM” is displayed.
- the tuple in TRIGITM that matches the dialed digits is displayed.
- the trigger criteria for that trigger item are matched.

Then, the following items are displayed:

- the table name OFCTIID followed by the assignment tuple from the of ce wide trigger item assignment table OFCTIID.
- The table name TRIGITM.
- The tuple of the subscribed trigger item in table TRIGITM.
- the table name C7GTTYE.
- The corresponding tuple of table C7GTTYE.
- The table name C7GTT.
- The corresponding tuple of table C7GTT.

For AFR trigger item subscription, the AFR trigger occurs at the NETBUSY TDP, and is only encountered when all routes in the route list are busy. Since TRAVER is a call simulation, routes are not busy and criteria for this trigger are never met. Therefore, when AFR is encountered in the route list, subscription to the AFR trigger is checked. When the AFR trigger is subscribed, a message is displayed indicating that triggering would take place when all routes are busy. Tuples from tables OFCTIID, TRIGITM, C7GTTYE, and C7GTT are displayed.

Figure 19 on page 97 shows a typical TRAVER output.

Figure 19 Sample of TRAVER output for Trigger Item interface

```
>TRAVER L 6136216054 2132550001 B
TABLE IBNLINES
HOST 00 1 08 02 0 DT STN RES 6216054 200 $
TABLE LINEATTR
200 1FR NONE NT FR01 0 613 P621 L613 TSPS 10 NIL NILSFC NILLATA 0 NIL NIL
00 Y
RESG200 0 0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
RESG200 AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE TRIGGRP TIID
AIN_Orig A_ttempt TDP: no subscribed trigger.
TABLE NCOS
RESG200 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG200 NXLA RXCMN200 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
NCOS PRELIM XLA name is NIL. Go to next XLA name.
CUST PRELIM XLA name is NIL. Go to next XLA name.
TABLE IBNXLA: XLANAME RXCMN200
TUPLE NOT FOUND
Default from table XLANAME:
RXCMN200
      (NET N N 0 N NDGT N Y GEN ( LATTR 200) (EA ITT Y 0) $ $)$ 9
```

Figure 20 Sample TRAVER output for Trigger Item interface (Continued)

```

TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
200 1FR NONE NT FR01 0 613 P621 L613 TSPS 10 NIL NILSFC NILLATA 0 NIL NIL
00 Y
RESG200 0 0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE STDPRTCT
P621 ( 1) (65021) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 213 250 N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HNPACONT
613 Y 999 1 ( 298) ( 1) ( 84) ( 0) 3
. SUBTABLE HNPACODE
. 213 215 HNPA 0
. 255 255 LRTE 800
AIN Info Collected TDP: no subscribed trigger.
TABLE TRIGGRP
CUSTTRIGGRP_CDP INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
Trigger AIN SDS is applicable to office.
TABLE OFCTIID
SDSTRG1 04 ON
. TABLE TRIGITM
. (04 SDSTRG1) SDS 213255 ULK EVENT R02 SS7 AINJAZZ $
. . TABLE C7GTTYE
. . AINJAZZ ANSI7 3 $
. . TABLE C7GTT
. . AINJAZZ 2132550001 2132550001 SSNONLY (AINTTEST) $
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

```

3.11 TRAVER and the specific feature code trigger

TRAVER supports the subscription, validation, criteria checking, and the verification of the translation and routing for the Specific_Feature_Code

(SFC) trigger. TRAVER output displays the appropriate SOC state of the trigger and provides the verification status for BRI or RES lines. The TRAVER output shows that the trigger successfully executes.

TRAVER generates a message on encountering the SFC trigger. The message indicates when the trigger applies to the corresponding subscriber. When SOC is not active for the trigger, then the system displays a warning message indicating that the SOC option must be active before the trigger can occur.

Figure 21 on page 100 gives the TRAVER output for an SFC triggered call that successfully queries the SCP or adjunct.

Figure 21 TRAVER example: SFC triggered call successfully queries the SCP or adjunct

```

>traver l 6211511 b243 b
TABLE IBNLINES
HOST 00 1 14 02 0 DT STN RES 6211511 100$
TABLE LINEATTR
100 1FR NONE NT FR01 0 613 EAP1 L613 TOPS 10 NIL NILSFC LATA1 0
NIL NIL 00 Y
RESG100 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNTFEAT
HOST 00 1 14 02 0 AIN AIN SFCTRIG
TABLE CUSTSTN
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RES100 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND
DIGCOL
RES100 NXLA RXCMN252 RXCFNXXX 0 RES
TABLE DIGCOLRES specified: RES digit collection
NCOS FEAT XLA name is NIL. Go to next XLA name.
TABLE IBNXLA: XLANAME RXCFNXXX
RXCFNXXX 243 FTR 3 AIN IMMED
AIN Info Collected TDP: no subscribed trigger.
TABLE TRIGGRP SFCTRIG INFOANAL
. SFC ( DG SFCDIG )$ NIL
Trigger R02 SFC is applicable to individual RES lines.
. . TABLE TRIGDIG
. . SFCDIG SFC B243 SFC EVENT TCAP R02 SS7 AINSEP DFLT $
. . . TABLE C7GTTYPE
. . . AINJAZZ ANSI7 3 $
. . . TABLE KSETFEAT
. . . TUPLE NOT FOUND
. . . TABLE C7GTT
. . . AINSEP 66136211611 61362116111 SSNONLY (AINTEST) $
AIN Info Analyzed TDP: trigger criteria met, querying the
database.
Use the AINRES option for further information
+++ TRAVER: SUCCESSFUL CALL TRACE +++
>

```

3.12 TRAVER and SDS escape code implementation

TRAVER supports the SDS escape code implementation. Field ACTION of table TRIGDIG allows the value ESCAPE, that indicates that the tuple is an escape code.

With the implementation of the ESCAPE value, the TRAVER output displays the tuple as the escape code tuple when the value of the ACTION field is ESCAPE. The escape code tuple has the following format:

KEY TRIGGER ESCAPE

Simulation of the call processing in TRAVER runs as when the SOC options are in the ON state for both SOC options, AIN00220 and LNP00100, regardless of the actual SOC state. This feature allows operating company personnel to verify the trigger provisioning without enabling the SOC options.

For the escape list functionality, a warning message indicates that a real call does not actually escape even though TRAVER shows the call escaping (when the SOC state is IDLE).

While executing, TRAVER verifies the subscriptions that are applicable for each trigger that is subscribed at a given TDP. An information message shows whether or not the trigger applies to the subscribed agent and subscription level. When the trigger is not applicable, call processing simulation continues without checking the trigger.

When the switch supports a digit-based string trigger (SDS, N11, CDP, PODPFEAT, SFC, and LNP) at the Information Analyzed TDP, the entry from table TRIGGRP that defines the trigger displays. The following events occur:

- TRAVER displays the TRIGDIG table name.
- TRAVER displays the tuple in the TRIGDIG table. When the tuple is an escape code, the displayed data consist of the key, the trigger, and the ESCAPE value.
- When the applicable SOC option for the trigger is IDLE, TRAVER displays a SOC option IDLE warning message.

Figure 22 on page 102 illustrates a dialed number that escapes the SDS trigger after a continue message.

Figure 22 TRAVER example: dialed number escapes the SDS trigger after a Continue message

```

> traver l 6215110 6137221111 ainres r02 cont b
TABLE LINEATTR
167 PBX NONE NT NSCR 0 613 EATP L613 TSPS 10 NIL NILSFC NILLATA 0
NIL NIL 00 N ( HOT )$
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE DNATTRS
613 621 5110
(PUBLIC (NONUNIQUE ) )$ $
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFFICETRIG
TABLE STDPRTCT
EATP ( 1) (65021) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS: N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HNPACONT
613 Y 802 1 ( 221) ( 1) ( 84) ( 0) 3
. SUBTABLE HNPACODE
. 613 613 HNPA 0
. 722 722 DN 613 722
TABLE TRIGGRP
OFFICETRIG INFOANAL
. N11 ( CT VBINFO) ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. Continue option: All matched digit criteria is displayed
. . TABLE TRIGDIG
. . . PODPDIG PODP 6137221111 PODP EVENT TCAP R02 SS7 AINJAZZ DFLT $
. . . TABLE C7GTTTYPE
. . . . AINJAZZ ANSI7 3 $
. . . . TABLE C7GTT
. . . . . AINJAZZ 6137221111 6137221111 SSNONLY (AINTTEST) $
. . . . . PODPDIG PODP 613722 PODP ESCAPE $
Trigger will not escape in actual call: SOC option AIN00220 is
IDLE.
AIN Info Analyzed TDP: AINRES continue option selected
TABLE TOFCNAME
613 722 $
TABLE DNINV
613 722 1111 D BLDN
AIN Term Attempt TDP: no subscribed trigger.
TABLE DNATTRS
TUPLE NOT FOUND

```


3.13 TRAVER and pre x triggers

TRAVER is modified to support four pre x triggers. The four pre x triggers are Specified_Carrier, One_Plus_Pre x, International, and Operator_Services. TRAVER recognizes these four triggers and checks calls against the individual trigger criteria to determine whether or not a query is sent.

TRAVER modifications include the addition of parameter Pre x, and parameter carrier selection information (CSI).

Table 14 summarizes the parameters for individual trigger detection.

Table 14 TRAVER parameter detection for pre x triggers

Trigger	Origination			
	Line	ISUP	PRI	SCP response
Specified_Carrier	<Called_dn>	csi PRESUB_INPUT, NOT_PRESUB_INPUT	tns	AR, FC: Not supported Collect_Info: CollInfo
One_Plus_Prefix	<Called_dn>	Not supported	cdn <dn>	ainres-prefix
International	<Called_dn>	NOA # 04, 73	cdn in	cdn in
Operator_Services	<Called_dn>	NOA # 71, 72, 73, 74	osa cdn <dn>	osa

Table 15 provides examples of the four pre x triggers detected by the TRAVER tool.

Table 15 Pre x trigger detection in TRAVER

Detected trigger	Origination type	Command line
Specified_Carrier	Line	traver l 6211092 102040 b
	ISUP	traver tr isup_trk 099488 CSI NOT_PRESUB_INPUT b
	PRI	traver tr pri_trk n cdn na 6136251003 tns na cic 204 b traver tr pri_trk n cdn na 1020416136251003 b
	SCP response	Analyze_Route, Forward_Call: Not supported Collect_info: traver l 6211092 n ainres r02 colinfo 1020416136251003 b

Table 15 Pre x trigger detection in TRAVER (Continued)

Detected trigger	Origination type	Command line
One_Plus_Prefix	Line	traver l 6211092 16215002 b
	ISUP	Not supported
	PRI	traver tr pri_trk n cdn na 16251003 b
	SC response	traver l 6211092 6136211421 ainres r02 ar prefix b
International	Line	traver l 6211092 0116215003 b
	ISUP	traver tr isupitic 179488 NOA #04 b
	PRI	traver tr pri_trk n cdn in 996251003 b traver tr pri_trk 011998196136251003 b
	SCP response	traver l 6211092 n cdn in 998196251003 ainres r02 ar b
Operator_Services	Line	traver l 6211092 00 b
	ISUP	traver tr isuptric 099488 NOA #72 b
	PRI	traver tr pri_trk n cdn na 6136251003 osa puba b traver tr pri_trk n cdn na 00 b
	SCP response	traver l 6211092 n cdn na 6136251003 osa puba ainres r02 ar b

3.13.1 TRAVER examples for pre x triggers

See Section 3.17 “TRAVER examples for pre x triggers” on page 116.

3.14 TRAVER example with AINCHG option

Figure 23 shows a sample TRAVER output for a simulated call originating on an ISUP trunk. Charge number digits were provided for the trunk using the AINCHG option.

Figure 23 Example TRAVER output using AINCHG option

```

>traver tr aintat_ibn317ti1 6136218000 ain ainchg 6137228001 t
TABLE TRKGRP
AINTAT_IBN317TI1 IBNTI 0 ELO NCRT COMKODAK 0 0 6137228002 ANSDISC 0 N N N
N N Y
      N 0 0 N N N N N $ NATL $
. . TABLE TRKAIN
. . AINTAT_IBN317TI1 TRKTRIGGRP2_AUTO
TABLE CUSTSTN
COMKODAK AIN AIN CDPCODE
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIG
TABLE NCOS
COMKODAK 0 0 0 KDK0 ( OHQ 0 TONE_OHQ) ( CBQ 0 3 N 2)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
COMKODAK PXDK CXDK CUSTFEAT 0 KDK
TABLE DIGCOL
KDK 6 COL L 1
TABLE IBNXLA: XLANAME PXDK
PXDK 613 NET N N 3 N NDGT N N DOD N 0 NONE $
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
0 1FR NONE NT FR01 0 613 P621 L613 TSPS 10 NIL NILSFC LATA1 0 NIL NIL 00 N
$
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE STDPRTCT
P621 ( 1) (65021) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 621 632 N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HNPACONT
613 Y 932 2 ( 436) ( 1) ( 84) ( 0) 2 $

```

Figure 24 Example TRAVER output using AINCHG option (Continued)

```

. SUBTABLE HNPACODE
. 6218 6219 DN 613 621
TABLE TRIGGRP
TRKTRIGGRP2_AUTO INFOCOL
. OFFHKDEL ( ESC )$ ROCKINFO
Trigger AIN OFFHKDEL is applicable to individual IBN trunk.
Trigger AIN OFFHKDEL: Trigger is active.
  (Use AINCI CHANGESTATE command to alter activation state.)
. . TABLE TRIGESC
. . TUPLE NOT FOUND
. . TABLE TRIGINFO
. . ROCKINFO EVENT TCAP R01 SS7 AINROCK DFLT $
. . . TABLE C7GTTYTYPE
. . . AINROCK ANSI7 5 $
. . . TABLE C7GTT
. . . AINROCK 6137228001 6137228001 PCSSN (AINTATM_RTESET2 AIN01 0) $
SSN
AIN Info Collected TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

```

3.15 TRAVER examples with AINRES option

The AINRES option lets you simulate processing of certain types of responses coming back from the SCP or adjunct. The responses that you can receive are

- forward call (FC)
- analyze route (AR)
- continue (CONT)
- authorize termination (AT)
- Send To Resource (STR) to intelligent peripheral

For other examples of TRAVER used on AIN calls, refer to North American DMS-100 Translations Guide, 297-8003-350.

3.15.1 AINRES option and the trigger item provisioning interface

The trigger item provisioning interface is an alternative method of provisioning AIN and LNP triggers. With this interface, trigger items are provisioned in the TRIGITM table and triggers are assigned to these trigger items in the OFCTIID table. Each of the following sections include an example of response simulation from the trigger group provisioning interface only.

3.15.2 Analyze Route

The Analyze Route message instructs the SSP to resume call processing at the Analyze Information or Select Route point in call depending on the contents of the response message. The AR option simulates calls that continue processing at the Analyze Information PIC only. In order to show how a call routes once the response is received, the options CDN, TNS, and OSA must be used in the TRAVER command. These options represent the CalledPartyId and Carrier parameters in the SCP response as a collection of ISDN routing characteristics. The AR option will not display the Origination Attempt and Information Collected TDPs as these are not encountered in the context of the Analyze Route response.

When operating company personnel use a TNS parameter in the traver command, TRAVER skips Info_Analyzed TDP trigger criteria checking. When operating personnel use a TNS parameter and specify that the carrier is a LEC or an OTC carrier, TRAVER traces Info_Analyzed TDP trigger checking.

Figure 13 provides a sample TRAVER output that shows how the CDN and TNS options route over a carrier from a public trunk.

Figure 25 Sample TRAVER output for N CDN NA and TNS NA UNK options route over a carrier from a public trunk

```
>traver tr isupitic n cdn na 6136211000 tns na unk 777 ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. TNSPUB (CDN NA (TNS NA)$) ( BC 3_1KHZ (CDN NA) (TNS NA)$) $
TABLE TRKGRP
ISUPITIC IT 63 ITTD NCRT IC NIL MIDL 613 E800 NSCR 613 000 N Y $
Warning: Routing characteristics in TRAVER command
line will override any bearer capability datafilled
in table TRKGRP.
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. TNSPUB E800 ( XLA AIN1)$
TABLE STDPRTCT
AIN1 ( 1) ( 0) 2
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 777 777 T NP 3 OFRT 896 3 13 NONE
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
```

Figure 25 Sample TRAVER output for N CDN NA and TNS NA UNK options route over a carrier from a public trunk (Continued)

```

. . 896 CND EA INTNL SK 3
. . S D OGEAGTE
. . N D ISUPOGGTE 0 N N
. . CND ALWAYS SK 2
. . N D OGEAGTE 15 D179 N
. . N D ISUPOGGTE 0 D179 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 OGEAGTE 6136211000 ST
2 ISUPOGGTE 6136211000 ST

TREATMENT ROUTES. TREATMENT IS: GNCT
1 T120

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

3.15.3 Forward Call

The Forward Call response instructs the SSP to resume call processing at the Analyze Information point in call (PIC) in an originating call model associated with the redirecting party (AIN subscriber). To simulate this with TRAVER, specify the redirecting party’s directory number in the originating agent eld of the TRAVER. As with the Analyze Route response, the SCP response is represented using the CDN, TNS, and OSA options. TRAVER does not display the Origination Attempt and Information Collected trigger detection points as these TDPs are not encountered during Forward Call processing. Normal call processing, including subsequent trigger detection, resumes at the Analyze Information PIC.

In Figure 26, the call receives a forward call message with 621-1171 from the SCP.

Figure 26 Sample TRAVER output when call receives a forward call message with 621-1171 from the SCP

```
>traver l 6136211179 n cdn na 6136211171 ainres r02 fc b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. CDNPUB (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE LINEATTR
0 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS:   N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:   NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 316) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 613 613 HNPA 0
. 621 621 DN 613 621
TABLE TOFCNAME
613 621 $
TABLE DNINV
613 621 1171 L HOST 00 0 13 02
```

Figure 26 Sample TRAVER output when call receives a forward call message with 621-1171 from the SCP (Continued)

```
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCR
. 613 613
TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCR
. 621 623
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                6136211171          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

3.15.4 Continue

The Continue message instructs the SSP to process the next applicable trigger for the originating facility at the Information Analyzed TDP. TRAVER does

not display the Origination Attempt and Information Collected TDPs in order to reach the Information Analyzed TDP. At the Information Analyzed TDP, TRAVER displays triggers that match the dialed digits from the most specific to the least specific. TRAVER then resumes normal processing.

Figure 27 shows the AINRES continue option.

Figure 27 Sample TRAVER output using the AINRES continue option

```
>traver l 6136212113 411 ainres r02 cont b
TABLE LINEATTR
17 8FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_NILLA_4 L613 NIL NILLATA $
TABLE DNATTRS
613 621 2113
(PUBLIC (NONUNIQUE ) )$ $
TABLE DNGRPS
TUPLE NOT FOUND
Originator is supported for AIN Termination Attempt Trigger
only, therefore other AIN info is not processed.
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 411 411 T OA 0 OFRT 44 3 3 NONE
. . TABLE OFRT
. . 44 N D DAC 3 N Y
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
LATA IS NIL, THEREFORE NOT AN EQUAL ACCESS CALL
TABLE POSITION
CAMA S TSPSTO

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES
```

Figure 27 Sample TRAVER output using the AINRES continue option (Continued)

```

1 DAC                      NN                      ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

POSITION ROUTES.  POSITION IS: CAMA
1 TSPSTO

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

3.15.5 Authorize Termination

The Authorize Termination message instructs the SSP to continue call processing at the Authorize Termination PIC and attempt to terminate to the AIN Termination Attempt subscriber. No additional triggers are displayed as none can be encountered.

3.15.6 Send To Resource

The Send To Resource TRAVER option allows validation of the DestinationAddress parameter identifying a route to an intelligent peripheral. The option is similar to the Analyze Route AR option but differs in two respects. The DestinationAddress parameter is specified in a CDN parameter, however TNS and OSA parameters are not used. During an STR to IP TRAVER, triggers at all detection points are not encountered.

3.15.7 TERMATT

Figure 28 shows the TRAVER output for a simulated call that tries to terminate at 6211172 and triggers at an AIN Essentials' TERMATT. The off-board processor responds with a Forward Call message with CDN 6137227030 and no carrier. The SSP routes the call according to the instructions in the FC response and terminates at DN 6137224113.

Figure 28 Sample TRAVER output using the AINRES option

```

>traver l 6136211172 n cdn na 6137224113 ainres r02 fc b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. CDNPUB (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE LINEATTR
0 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA

```

Figure 28 Sample TRAVER output using the AINRES option (Continued)

```

L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS: N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 316) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 613 613 HNPA 0
. 722 722 DN 613 722
TABLE TOFCNAME
613 722 $
TABLE DNINV
613 722 4113 L HOST 00 1 00 04
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCR
. 613 613
TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCR

```

Figure 28 Sample TRAVER output using the AINRES option (Continued)

```

. 722 722
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                6137224113          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

3.16 TRAVER example of routing to an IP

Figure 29 is an example of how TRAVER can be used to verify the routing to an IP address. In Figure 29, the IP address is 8147226010.

Figure 29 Sample TRAVER output for routing to an IP

```

>traver l 6136211170 n cdn na 8147226010 ainres r02 str b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. CDNPUB (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE LINEATTR
0 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS

```

Figure 29 Sample TRAVER output for routing to an IP (Continued)

```

TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. CDNPUB P621 ( XLA AIN1)$
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 814 820 N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 316) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 814 814 FRTE 20
. SUBTABLE RTEMAR
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 20 S D CAMA2W
. S D TSPSTO
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNPACONT results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCRC
. TUPLE NOT FOUND. DEFAULT IS NON-LOCAL
TABLE PFXTREAT
OPTL NP N DD UNDT
TABLE CLSVSCRC
TABLE LATAXLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL

```

Figure 29 Sample TRAVER output for routing to an IP (Continued)

```

Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 CAMA2W                8147226010          ST
2 TSPSTO                8147226010          ST2P

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

3.17 TRAVER examples for pre x triggers

The following sections provides TRAVER examples that apply to the Specified_Carrier , One_Plus_Pre x, International and Operator_Services triggers.

3.17.1 TRAVER example for trigger Specified_Carrier

Figure 30 provides a sample TRAVER output for the Specified_Carrier trigger.

Figure 30 Sample TRAVER output for trigger Specified_Carrier

```

> traver l 6136213311 1048818196211312 b
TABLE IBNLINES
HOST 00 0 11 25 0 DT STN RES 6213311 400 613_EAP1_210 L613_LATA1_0 613 $
TABLE LINEATTR
400 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_EAP1_210 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_EAP1_210 FR01 613 EAP1 TSPS Y RESG200 0 0 $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
RESG200 AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR

```

Figure 30 Sample TRAVER output for trigger Speci ed_Carrier (Contin ued)

```

AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG200 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG200 NXLA RXCMN200 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
TABLE IBNXLA: XLANAME RXCMN200
TUPLE NOT FOUND
Default from table XLANAME:
RXCMN200
      (NET N N 0 N NDGT N Y GEN ( LATTR 200 613_P621_200 L613_NILLA_4)
      (EA ITT Y 0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
200 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_200 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_200 FR01 613 P621 TSPS Y RESG200 0 0 $
TABLE RATEAREA
L613_NILLA_4 L613 NIL LATA1 $
TABLE STDPRTCT
P621 ( 1) (65021) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10488 10488 EA DD 5 P PEA1 ITT Y OFRT 907 5 16 N
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
. . TABLE OFRT
. . 907 CND EA INTNL SK 2
. . N D ISUPITEAOG 15 D077 N
. . CND ALWAYS SK 1
. . N D ISUPITEAOG 15 D123 N
. . EXIT TABLE OFRT
. TABLE STDPRTCT
. PEA1 ( 1) (65021) 2
. . SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. . 1 1 EA DD 1 T NA ITT N
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N

```

Figure 30 Sample TRAVER output for trigger Speci ed_Carrier (Contin ued)

```

TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 319) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 819 819 FNPA 0
TABLE FNPACONT
819 30 - ( 3) ( 0) ( 3)
. SUBTABLE FNPACODE
. 621 622 30 Y
. SUBTABLE RTEREF
. . 30 N D ISUPIT2WB 3 N N
. EXIT TABLE RTEREF
EXIT TABLE FNPACONT
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. TUPLE NOT FOUND. DEFAULT IS NON-LOCAL
TABLE PFXTREAT
OPTL DD N DD UNDT
TABLE CLSVSCRC
TABLE LATA1
LATA1 819 INTER INTER STD
TABLE OCCINFO
ITT 0488 EAP Y Y Y Y Y N N N Y Y Y LONG 14 FGRPC N N N N N N N N N N N N N N
N Y
TABLE EASAC
TUPLE NOT FOUND
OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP
DEFINED
Using Equal Access (EA) route OFRT 907 from Pretranslation
TABLE OFRT
907 CND EA INTNL SK 2
N D ISUPITEAOG 15 D077N
CND ALWAYS SK 1
N D ISUPITEAOG 15 D123 N
EXIT TABLE OFRT
AIN Info Collected TDP: no subscribed trigger.
TABLE TRIGGRP
CUSTTRIGGRP_CDP INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
Checking AIN SPECARR Trigger Items as SPECARR is compatible with current
call
. . TABLE OFCTIID
. . 4 SPECARR ON

```


Figure 30 Sample TRAVER output for trigger Speci ed_Carrier (Contin ued)

```

. . TABLE TRIGITM
. . 4 SPECARR SPECARR $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTYPE
. . . AINPOP ANSI7 15 $
. . . TABLE C7GTT
. . . AINPOP 8196211312 8196211312 PCSSN (SIMTOOL RTESET SIMTOOL3 0) $
SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

```

3.17.2 TRAVER example for the One_Plus_Pre x trig ger

Figure 31 provides a sample TRAVER output for trigger One_Plus_Pre x.

Figure 31 Sample TRAVER for trigger One_Plus_Pre x

```

>traver l 7224013 917251111 b
TABLE IBNLINES
HOST 00 0 03 19 0 DT STN IBN 7224013 COMKODAK 0 0 613 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 00 0 03 19 0 AIN AIN TIID (4 ONEPLUS ON) $
TABLE CUSTSTN
COMKODAK AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
COMKODAK 0 0 0 KDK0 ( OHQ 0 TONE_OHQ) ( CBQ 0 3 N 2) ( ACR N)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
COMKODAK PXDK CXDK FTCOMM 0 KDK
TABLE DIGCOL
KDK 9 RPT
TABLE IBNXLA: XLANAME PXDK
TUPLE NOT FOUND
Default is to go to next XLA name.

```

Figure 31 Sample TRAVER for trigger One_Plus_Pre x (Continued)

```
TABLE IBNXLA: XLANAME CXDK
CXDK 9 NET N Y 1 Y POTS Y N DOD N 80 613_P621_0 L613_LATA1_0 NONE $
TABLE DIGCOL
POTS specified: POTS digit collection
TABLE LINEATTR
80 IBN NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE STDPRTCT
P621 ( 1) (65021) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 172 172 T DD 1 OFRT 40 8 8 NONE
. . TABLE OFRT
. . 40 N D ISUPITOG 0 N N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
AIN Info Collected TDP: no subscribed trigger.
TABLE FNPA7DIG
TUPLE NOT FOUND
Checking AIN ONEPLUS Trigger Items as ONEPLUS is compatible with current
call
. . TABLE TRIGITM
. . 4 ONEPLUS ONEPLUS $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTYPE
. . . AINPOP ANSI7 15 $
. . . TABLE C7GTT
. . . AINPOP 6137251111 6137251111 PCSSN (SIMTOOL RTESET SIMTOOL3 0) $
SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++
```

3.17.3 TRAVER example for the International trigger

Figure 32 provides a sample TRAVER output for trigger International.

Figure 32 Sample TRAVER output for trigger International

```

>traver l 7227114 901144628243941 b
TABLE IBNLINES
HOST 00 0 15 06 0 DT STN IBN 7227114 COMKODAK 0 0 613 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 00 0 15 06 0 AIN AIN TIID (4 INTERNTL ON) $
TABLE CUSTSTN
COMKODAK AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
COMKODAK 0 0 0 KDK0 ( OHQ 0 TONE_OHQ) ( CBQ 0 3 N 2) ( ACR N)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
COMKODAK PXDK CXDK FTCOMM 0 KDK
TABLE DIGCOL
KDK 9 RPT
TABLE IBNXLA: XLANAME PXDK
TUPLE NOT FOUND
Default is to go to next XLA name.
TABLE IBNXLA: XLANAME CXDK
CXDK 9 NET N Y 1 Y POTS Y N DOD N 80 613_P621_0 L613_NILLA_4 NONE $
TABLE DIGCOL
POTS specified: POTS digit collection
TABLE LINEATTR
80 IBN NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPTS N $
TABLE RATEAREA
L613_NILLA_4 L613 NIL NILLATA $
TABLE STDPRTCT
P621 ( 1) (65021) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 011 011 N DD 3 IN
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND

```

Figure 32 Sample TRAVER output for trigger International (Continued)

```

TABLE CCTR
44 T 044 8 12 T OFRT 1022 Y $
TABLE OFRT
1022 TS D OTMF1 0 0 N 6 011044
      TS D OTDP1 0 0 N 6 011044
EXIT TABLE OFRT
AIN Info Collected TDP: no subscribed trigger.
Checking AIN INTERNTL Trigger Items as INTERNTL is compatible with current
call
. . TABLE TRIGITM
. . 4 INTERNTL INTERNTL $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTYPE
. . . AINPOP ANSI7 15 $
. . . TABLE C7GTT
. . . AINPOP 44628243941 44628243941 PCSSN (SIMTOOL_RTESET SIMTOOL3 0) $
SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

```

3.17.4 TRAVER example for the Operator_Services trigger (1 of 2)

Figure 33 provides a sample TRAVER output for trigger Operator_Services.

Figure 33 Sample TRAVER output for trigger Operator_Services (1 of 2)

```

>traver l 6136211311 0 b
TABLE IBNLINES
HOST 00 0 07 19 0 DT STN RES 6211311 201 613_P621_200 L613_LATA1_0 613 $
TABLE LINEATTR
201 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_200 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_200 FR01 613 P621 TSPS Y RESG200 0 0 $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 00 0 07 19 0 AIN AIN TIID (4 OPERSERV ON) $
TABLE CUSTSTN
RESG200 AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
AIN Orig Attempt TDP: no subscribed trigger.

```

Figure 33 Sample TRAVER output for trigger Operator_Services (1 of 2) (Continued)

```

TABLE NCOS
RESG200 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG200 NXLA RXCMN200 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
TABLE IBNXLA: XLANAME RXCMN200
TUPLE NOT FOUND
Default from table XLANAME:
RXCMN200
      (NET N N 0 N NDGT N Y GEN ( LATTR 200 613_P621_200 L613_NILLA_4)
      (EA ITT Y 0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
200 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_200 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_200 FR01 613 P621 TSPS Y RESG200 0 0 $
TABLE RATEAREA
L613_NILLA_4 L613 NIL NILLATA $
ZERO MINUS POS FROM TABLE XLAPLAN
TABLE POSITION
TSPS T OFRT 106
TABLE OFRT
  106 N D LNTOPSO 1 N N
EXIT TABLE OFRT
AIN Info Collected TDP: no subscribed trigger.
Checking AIN OPERSERV Trigger Items as OPERSERV is compatible with current
call
. . TABLE TRIGITM
. . 4 OPERSERV OPERSERV $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTYPE
. . . AINPOP ANSI7 15 $
. . . TABLE C7GTT
. . . AINPOP 0000000000 0000000000 PCSSN (SIMTOOL RTESET SIMTOOL3 0) $
SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

```

Figure 33 Sample TRAVER output for trigger Operator_Services (1 of 2) (Continued)

```
+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++
```

3.17.5 TRAVER example for the Operator_Services trigger (2 of 2)

Figure 34 illustrates the translations for an Analyze_Route response for a subscriber called party number with an operator requested that hits an of ce-wide Operator_Services trigger . The response translations simpli cation feature is active, and is indicated by the presence of ISDN digit conversion. Subscriber numbers are not supported for this feature, therefore, a "0" is not pre x ed to the digits. Despite the lack of a pre x ed "0", the call still hits trigger Operator_Services..

Figure 34 traver.txt

```
> traver l 6136213008 n cdn l 6213009 osa pubp ainres r02 ar b
Warning: Routing characteristics are present.
      Originator must be able to send in
      characteristics specified.
TABLE RTECHAR
. BOCOP (OSA PUBP $) (OSA PUBP (CDN L)$) (OSA PUBP (CDN NA)$) (OSA PUBP
(CDN IN)$)$
TABLE LINEATTR
100 1FR NONE NT 0 11 NILSFC 0 NIL NIL 00 613_P621_0 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $ $
TABLE RATEAREA
L613_NILLA_4 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE PXLAMAP
. BOCOP P621 ( XLA NAOP) ( PREFIX )$
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 6213009
TABLE STDPRTCT
NAOP ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 6 9 N OA 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
```

Figure 34 traver.txt

```

. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 302) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 621 621 DN 613 621
TABLE TOFCNAME
613 621 $
TABLE DNINV
613 621 3009 L HOST 00 1 18 11
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNPACONT results are used.
TABLE LCASCRCN
613 L613 ( 15) OPTL N N
. SUBTABLE LCASCR
. 621 623
TABLE PFXTREAT
TUPLE NOT FOUND.  DEFAULT IS TO LEAVE XLA RESULT UNCHANGED
TABLE CLSVSCRC
613 FR01 OA 2 N NONE ( 1)
. SUBTABLE CLSVSCR
. KEY NOT FOUND
TABLE LATAXLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
TABLE FNPA7DIG
TUPLE NOT FOUND
Checking AIN SPECARR Trigger Items as SPECARR is compatible with current
call
Checking AIN OPERSERV Trigger Items as OPERSERV is compatible with
current call
. . TABLE OFCTIID
. . 4 OPERSERV ON
. . TABLE TRIGITM
. . 4 OPERSERV OPERSERV $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTYPE
. . . AINPOP ANSI7 15 $
. . . TABLE C7GTT
. . . AINPOP 6136213009 6136213009 PCSSN (SIMTOOL RTESET SIMTOOL3 0)
$ SSN
AIN Info Analyzed TDP: trigger criteria met.

```

Figure 34 traver.txt

```

Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

```

3.17.6 TRAVER example when the SOC option is idle

When the SOC option for triggers Specified_Carrier, One_Plus_Pre x, International, and Operator_Services is IDLE, TRAVER displays a warning message.

Figure 35 provides a TRAVER example that illustrates when the SOC option is idle.

Figure 35 Sample TRAVER output when the SOC option is idle

```

>traver l 6136211311 06136211411 b
TABLE IBNLINES
HOST 00 0 07 19 0 DT STN RES 6211311 201 613_P621_200 L613_LATA1_0 613 $
TABLE LINEATTR
201 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_200 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_200 FR01 613 P621 TSPS Y RESG200 0 0 $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 00 0 07 19 0 AIN AIN TIID (4 OPERSERV ON) $
TABLE CUSTSTN
RESG200 AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG200 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG200 NXLA RXCMN200 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection

```


Figure 35 Sample TRAVER output when the SOC option is idle (Continued)

```

TABLE IBNXLA: XLANAME RXCMN200
TUPLE NOT FOUND
Default from table XLANAME:
RXCMN200
      (NET N N 0 N NDGT N Y GEN ( LATTR 200 613_P621_200 L613_NILLA_4)
      (EA ITT Y 0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
200 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_200 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_200 FR01 613 P621 TSPS Y RESG200 0 0 $
TABLE RATEAREA
L613_NILLA_4 L613 NIL NILLATA $
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 06 07 N OA 1 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 315) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 613 613 HNPA 0
. 621 621 DN 613 621
TABLE TOFCNAME
613 621 $
TABLE DNINV
613 621 1411 L HOST 00 0 18 25
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. 613 613

```

Figure 35 Sample TRAVER output when the SOC option is idle (Continued)

```
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. 621 623
TABLE PFXTREAT
OPTL OA Y OA UNDT
TABLE CLSVSCRC
613 FR01 OA 2 N NONE ( 1)
. SUBTABLE CLSVSCR
LATA IS NIL, THEREFORE NOT AN EQUAL ACCESS CALL
AIN Info Collected TDP: no subscribed trigger.
Checking AIN OPERSERV Trigger Items as OPERSERV is compatible with current
call
. . TABLE TRIGITM
. . 4 OPERSERV OPERSERV $ ULK EVENT R02 SS7 AINPOP $
Trigger AIN : AIN 0.2 trigger bypassed as AIN00254 SOC option is IDLE.
TABLE TRIGGRP
CUSTTRIGGRP_CDP INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                6136211411          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

3.17.7 TRAVER example for triggering from ISUP IAM parameters

The Specified_Carrier, International, and Operator_Services triggers can be encountered on an incoming ISUP trunk, depending on the presence of certain parameters in the incoming IAM message. These parameters are as follows:

- Nature of Address = International
- Nature of Address = Operator requested
- Carrier Selection Information

Figure 36 provides a TRAVER example that illustrates when the ISUP IAM Nature of Address parameter = International.

Figure 36 Sample TRAVER output when the ISUP IAM Nature of Address parameter = International

```
>traver tr isupitic 179488 noa #04 b
TABLE TRKGRP
ISUPITIC IT 63 ITTD NCRT IC NIL MIDL 613 E800 NSCR 613 000 N Y $
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE STDPRTCT
E800 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 179488 179488 T NP 6 OFRT 900 6 6 NONE
. . TABLE OFRT
. . 900 CND EA INTNL SK 3
. . S D OGEAITT
. . N D ISUPOGITT 0 N N
. . CND ALWAYS SK 2
. . N D OGEAITT 0 N N
. . N D ISUPOGITT 0 N N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
AIN Info Collected TDP: no subscribed trigger.
Checking AIN INTERNTL Trigger Items as INTERNTL is compatible with current
call
. . TABLE OFCTIID
. . 4 INTERNTL ON
. . TABLE TRIGITM
. . 4 INTERNTL INTERNTL $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTYPE
. . . AINPOP ANSI7 15 $
. . . TABLE C7GTT
. . . AINPOP 0000000000 0000000000 PCSSN (SIMTOOL RTESET SIMTOOL3 0) $
SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
```

Figure 36 Sample TRAVER output when the ISUP IAM Nature of Address parameter = International (Continued)

```
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information
```

```
+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++
```

Figure 37 provides a sample TRAVER output that illustrates when the ISUP IAM Nature of Address parameter=Operator requested.

Figure 37 TRAVER example when the ISUP IAM Nature of Address parameter=Operator requested

```
>traver tr isupiteaic 099488 noa #72 b
TABLE TRKGRP
ISUPITEAIC IT 63 ITTD NCRT IC NIL MIDL 613 E800 NSCR 613 000 N Y $
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE STDPRTCT
E800 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 099488 099488 T NP 6 OFRT 900 6 6 NONE
. . TABLE OFRT
. . 900 CND EA INTNL SK 3
. . S D OGEAITT
. . N D ISUPOGITT 0 N N
. . CND ALWAYS SK 2
. . N D OGEAITT 0 N N
. . N D ISUPOGITT 0 N N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
AIN Info Collected TDP: no subscribed trigger.
Checking AIN OPERSERV Trigger Items as OPERSERV is compatible with current
call
. . TABLE OFCTIID
. . 4 OPERSERV ON
. . TABLE TRIGITM
. . 4 OPERSERV OPERSERV $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTYE
. . . AINPOP ANSI7 15 $
. . . TABLE C7GTT
. . . AINPOP 0000000000 0000000000 PCSSN (SIMTOOL RTESET SIMTOOL3 0) $
SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
```

Figure 37 TRAVER example when the ISUP IAM Nature of Address parameter=Operator requested (Continued)

```

Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

```

Figure 38 provides a TRAVER output example for the ISUP IAM Carrier Selection Information parameter.

Figure 38 TRAVER example for the ISUP IAM Carrier Selection Information parameter

```

>traver tr isupiteaic 099488 csi NOT_PRESUB_INPUT b
TABLE TRKGRP
ISUPITEAIC IT 63 ITTD NCRT IC NIL MIDL 613 E800 NSCR 613 000 N Y $
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE STDPRTCT
E800 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 099488 099488 T NP 6 OFRT 900 6 6 NONE
. . TABLE OFRT
. . 900 CND EA INTNL SK 3
. . S D OGEAITT
. . N D ISUPOGITT 0 N N
. . CND ALWAYS SK 2
. . N D OGEAITT 0 N N
. . N D ISUPOGITT 0 N N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
AIN Info Collected TDP: no subscribed trigger.
Checking AIN SPECARR Trigger Items as SPECARR is compatible with current
call
. . TABLE OFCTIID
. . 4 SPECARR ON
. . TABLE TRIGITM
. . 4 SPECARR SPECARR $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTYPE
. . . AINPOP ANSI7 15 $

```

Figure 38 TRAVER example for the ISUP IAM Carrier Selection Information parameter (Contin-

```

. . . TABLE C7GTT
. . . AINPOP 0000000000 0000000000 PCSSN (SIMTOOL RTESET SIMTOOL3 0) $
SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

```

3.17.8 TRAVER example for triggering from AIN response parameters

The TRAVER command line supports parameters Pre x, Nature Of Number, and Carrier Format Field (from the AIN Response) and displays information about the specific triggers encountered when any of these parameters are used with the AINRES option. See Figure 39 for an example of a response output for trigger Operator_Services.

Figure 39 TRAVER example of a response output for trigger Operator_Services

```

>traver l 6136211311 n cdn na 6136211411 osa pubp ainres r02 ar b
Warning: Routing characteristics are present.
Originator must be able to send in
characteristics specified.
TABLE RTECHAR
. OSAPPUB (OSA PUBP $) (OSA PUBP (CDN NA)$) (OSA PUBP (CDN IN)$) ( BC
3_1KHZ (OSA PUBP)$) ( BC 3_1KHZ (OSA PUBP) (CDN
TABLE IBNLINES
HOST 00 0 07 19 0 DT STN RES 6211311 201 613_P621_200 L613_LATA1_0 613 $
TABLE LINEATTR
201 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_200 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_200 FR01 613 P621 TSPS Y RESG200 0 0 $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 00 0 07 19 0 AIN AIN TIID (4 OPERSERV ON) $

```

Figure 39 TRAVER example of a response output for trigger Operator_Services (Continued)

```

TABLE CUSTSTN
RESG200 AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE NCOS
RESG200 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG200 NXLA RXCMN200 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
TABLE IBNXLA: XLANAME RXCMN200
RXCMN200 6 AMBIG RXCFNXXX 2 RXCML200
NUMBER OF DIGITS GREATER THAN 2 RXCML200 TRANSLATOR ARE USED.
TABLE IBNXLA: XLANAME RXCML200
TUPLE NOT FOUND
Default from table XLANAME:
RXCML200
      (NET N N 0 N NDGT N Y GEN ( LATTR 200 613_P621_200 L613_NILLA_4)
      (EA ITT Y 0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
200 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_200 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_200 FR01 613 P621 TSPS Y RESG200 0 0 $
TABLE RATEAREA
L613_NILLA_4 L613 NIL LATA1 $
TABLE PXLAMAP
. OSAPPUB P621 ( XLA AIN) ( PREFIX )$
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 06136211411
TABLE STDPRTCT
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 06 07 N OA 1 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT

```


Figure 39 TRAVER example of a response output for trigger Operator_Services (Continued)

```

613 Y 999 1 ( 315) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 613 613 HNP A 0
. 621 621 DN 613 621
TABLE TOFCNAME
613 621 $
TABLE DNINV
613 621 1411 L HOST 00 0 18 25
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNP A results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. 613 613
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. 621 623
TABLE PFXTREAT
OPTL OA Y OA UNDT
TABLE CLSVSCRC
613 FR01 OA 2 N NONE ( 1)
. SUBTABLE CLSVSCR
TABLE IBNFEAT
HOST 00 0 07 19 0 PIC PIC GTE Y
TABLE LATAXLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
Checking AIN OPERSERV Trigger Items as OPERSERV is compatible with current
call
. . TABLE TRIGITM
. . 4 OPERSERV OPERSERV $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTYPE
. . . AINPOP ANSI7 15 $
. . . TABLE C7GTT
. . . AINPOP 6136211411 6136211411 PCSSN (SIMTOOL RTESET SIMTOOL3 0) $
SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

```

Figure 39 TRAVER example of a response output for trigger Operator_Services (Continued)

```

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++
    
```

Figure 40 provides a sample TRAVER that illustrates a response output for parameter Pre x.

Figure 40 TRAVER example of a response output for parameter Pre x

```

>traver l 6136211311 n cdn na 6136211411 ainres r02 ar prefix b
Warning: Routing characteristics are present.
      Originator must be able to send in
      characteristics specified.
TABLE RTECHAR
. CDNPUB (CDN NA $) (CDN IN $) ( BC 3_1KHZ (CDNNA)$) ( BC 3_1KHZ (CDN
IN)$)$
TABLE IBNLINES
HOST 00 0 07 19 0 DT STN RES 6211311 200 613_P621_200 L613_NILLA_4 613 $
TABLE LINEATTR
200 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_200 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_200 FR01 613 P621 TSPS Y RESG200 0 0 $
TABLE RATEAREA
L613_NILLA_4 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 00 0 07 19 0 AIN AIN TIID (4 ONEPLUS ON) $
TABLE CUSTSTN
RESG200 AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE NCOS
RESG200 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG200 NXLA RXCMN200 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
TABLE IBNXLA: XLANAME RXCMN200
RXCMN200 6 AMBIG RXCFNXXX 2 RXCML200
NUMBER OF DIGITS GREATER THAN 2 RXCML200 TRANSLATOR ARE USED.
    
```

Figure 40 TRAVER example of a response output for parameter Pre x (Contin ued)

```

TABLE IBNXLA: XLANAME RXCML200
TUPLE NOT FOUND
Default from table XLANAME:
RXCML200
      (NET N N 0 N NDGT N Y GEN ( LATTR 200 613_P621_200 L613_NILLA_4)
      (EA ITT Y 0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
200 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_200 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_200 FR01 613 P621 TSPS Y RESG200 0 0 $
TABLE RATEAREA
L613_NILLA_4 L613 NIL LATA1 $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 6136211411
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS:   N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:   NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 315) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 613 613 HNPA 0
. 621 621 DN 613 621
TABLE TOFCNAME
613 621 $
TABLE DNINV
613 621 1411 L HOST 00 0 18 25
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.

```

Figure 40 TRAVER example of a response output for parameter Pre x (Contin ued)

```
LNP Info: HNP A results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. 613 613
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. 621 623
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
Checking AIN ONEPLUS Trigger Items as ONEPLUS is compatible with current
call
. . TABLE TRIGITM
. . 4 ONEPLUS ONEPLUS $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTYPE
. . . AINPOP ANSI7 15 $
. . . TABLE C7GTT
. . . AINPOP 6136211411 6136211411 PCSSN (SIMTOOL RTESET SIMTOOL3 0) $
SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++
```

3.18 TRAVER example 1

Table 16 illustrates a sample TRAVER output.

Table 16 Example TRAVER output

```

traver 1 6255000 2545000 b
TABLE IBNLINES
HOST 02 0 05 03 0 DT STN RES 6255000 200 $
TABLE LINEATTR
200 1FR NONE NT FR01 0 613 P621 L613 TSPS 10 NIL NILSFC LATA1 0 NIL NIL 00
Y RESG200 0 0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
RESG200 AIN AIN CDPCODE
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIG
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG200 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG200 NXLA RXCMN200 RESGSTAR 0 RES
TABLE DIGCOL
RES specified: RES digit collection
NCOS PRELIM XLA name is NIL. Go to next XLA name.
CUST PRELIM XLA name is NIL. Go to next XLA name.
TABLE IBNXLA: XLANAME RXCMN200
TUPLE NOT FOUND
Default from table XLANAME:
RXCMN200
(NET N N 0 N NDGT N Y GEN ( LATTR 262) (EA NILC Y 0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually

```

Table 16 Example TRAVER output (Continued)

```
TABLE LINEATTR
262 1FR NONE NT FR01 0 613 EAP1 L613 TOPS 0 NIL NILSFC LATA1 0 NIL NIL 00
Y RESG200 0 0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE STDPRTCT
EAP1 ( 1) (65021) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 2 4 N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HNPACONT
613 Y 932 2 ( 424) ( 1) ( 84) ( 0) 2
. SUBTABLE HNPACODE
. . 254 255 LRTE 719
AIN Info Collected TDP: no subscribed trigger
TABLE TRIGGRP
CDPCODE INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
. CDPCODE ( DG CDPTRAF)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
TABLE TRIGGRP
OFCTRIG INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. . TABLE TRIGDIG
. . . PODPDIG PODP 6132545000 PODP EVENT TCAP R01 SS7 AINJAZZ DFLT $
. . . TABLE C7GTTYPE
. . . AINJAZZ ANSI7 3 $
. . . TABLE C7GTT
. . . AINJAZZ 6132545000 6132545000 SSNONLY (AINTEST) $
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG Option to save the query to a file for use in TstQuery
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++
```

3.19 TRAVER example 2

Figure 41 shows output when AIN Service Enablers is IDLE, AIN Call Management is ON, for a data lled R02 SDS trigger .

Figure 41 TRAVER example: data lled R02 SDS trig ger

```

>traver l 6218034 2132545200 b
TABLE LINEATTR
0 1FR NONE NT FR01 0 613 P621 L613 TSPS 10 NIL NILSFC LATA1 0 NIL
NIL 00 N $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
.
.
<stuff deleted>
.
.
TABLE TRIGGRP
OFCTRIG INFOANAL
. N11 ( DG N11DIG)$ NIL
AIN N11 trigger is applicable to office.
. PODP ( DG PODPDIG)$ NIL
AIN PODP trigger is applicable to office.
. . TABLE TRIGDIG
. . PODPDIG PODP 2132545200 PODP EVENT TCAP R02 SS7 AINJAZZ DFLT
$
. . AIN PODP trigger: AIN 0.2 trigger bypassed as AIN00210 SOC
Option is IDLE.
AIN Info Analyzed TDP: trigger criteria not met.
.
<stuff deleted>
.
+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES
.
.<stuff deleted>
.
TREATMENT ROUTES. TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

>

```

3.20 TRAVER example 3

Figure 42 on page 142 shows the displayed output when AIN Service Enablers is IDLE, AIN Call Management is ON, for a data lled R0.2 SDS and R0.1 triggers. The R0.2 PODP trigger has precedence over the R0.1 trigger as the digits criteria for the R0.2 PODP trigger is a more speci c match.

Figure 42 TRAVER example: data lled R0.2 SDS and R0.1 trig gers

```

>traver l 6218034 2132545200 b
TABLE LINEATTR
0 1FR NONE NT FR01 0 613 P621 L613 TSPS 10 NIL NILSFC LATA1 0 NIL
NIL 00 N $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
.
<stuff deleted>
.
TABLE TRIGGRP
OFCTRIG INFOANAL
. N11 ( DG N11DIG)$ NIL
AIN N11 trigger is applicable to office.
. PODP ( DG PODPDIG)$ NIL
AIN PODP trigger is applicable to office.
. . TABLE TRIGDIG
. . PODPDIG PODP 2132545200 PODP EVENT TCAP R02 SS7 AINJAZZ DFLT
$
      AIN PODP trigger: AIN 0.2 trigger bypassed as AIN00210
SOC Option is IDLE.
. TABLE TRIGDIG
. PODPDIG PODP 21325452 PODP EVENT TCAP R01 SS7 AINJAZZ DFLT $
. . TABLE C7GTTYPE
. . AINJAZZ ANSI7 3 $
. . TABLE C7GTT
. . AINJAZZ 21325452 21325452 SSNONLY (AINTEST) $
AIN Info Analyzed TDP: trigger criteria met, querying the
database. Use the AINRES option for further information

+++ TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met, querying the
database.

Use the AINRES option for further information

+++ TRAVER: SUCCESSFUL CALL TRACE +++
>

```

3.21 TRAVER example 4

Figure 43 on page 143 shows the displayed output when AIN Service Enablers is ON, AIN Call Management is ON, for a data lled R0.2 SDS trigger .

Figure 43 TRAVER example: AIN Service Enablers is ON, data lled R0.2 SDS trigger

```
>traver l 6218034 2132545200 b
TABLE LINEATTR
0 1FR NONE NT FR01 0 613 P621 L613 TSPS 10 NIL NILSFC LATA1 0 NIL
NIL 00 N $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
.
.
<stuff deleted>
.
.
TABLE TRIGGRP
OFCTRIG INFOANAL
. N11 ( DG N11DIG)$ NIL
AIN N11 trigger is applicable to office.
. PODP ( DG PODPDIG)$ NIL
AIN PODP trigger is applicable to office.
. . TABLE TRIGDIG
. . PODPDIG PODP 2132545200 PODP EVENT TCAP R02 SS7 AINJAZZ DFLT
$
. . . TABLE C7GTTYPE
. . . AINJAZZ ANSI7 3 $
. . . TABLE C7GTT
. . . AINJAZZ 2132545200 2132545200 SSNONLY (AINTTEST) $
AIN Info Analyzed TDP: trigger criteria met, querying the
database.
Use the AINRES option for further information

+++ TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met, querying the
database.
Use the AINRES option for further information

+++ TRAVER: SUCCESSFUL CALL TRACE +++

>
```

3.22 TRAVER for Dynamically controlled routing with AIN

The AIN NA013 product release enhances TRAVER for the dynamically controlled routing (DCR) feature. When the SSP removes the DCR handicap and the call acts like a new DCR call, the output for AIN response translations provides:

- DCR direct routes
- recommended tandem routes (when applicable)
- exception routes (whether SLER is ON or OFF)
- automatic e xible routing (AFR) interworking with DCR

When a DCR call traverses through DCR routes and the call encounters an AFR pattern, TRAVER displays this traverse in both the TRACE and NOTRACE portion.

Figure 512 shows the displayed output for AIN response translations with DCR handicap removal.

Figure 44 TRAVER example: AIN response translations with DCR handicap removal

```

>traver tr NET1_4to6_2w n cdn na 9465004 ainres r02 ar b
Warning: Routing characteristics are present.
    Originator must be able to send in
    characteristics specified.
TABLE RTECHAR
. LECNA (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE TRKGRP
NET1_4TO6_2W T2 0 ELO NCRT NIL MIDL 0 N P621 NSCR 613 LCL N N $
Warning: Routing characteristics in TRAVER command
line will override any bearer capability datafilled
in table TRKGRP.
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIG
TABLE PXLAMAP
. LECNA P621 ( XLA P621)$
TABLE STDPRTCT
P621 ( 1) ( 0) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 94 96 N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 985 2 ( 40) ( 1) ( 84) ( 0) 2 $
. SUBTABLE HNPACODE
. 9465 9465 LRTE 965
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 965 DCRT DCRNET1 NODE5SEENBY6 5
. N D NET1_6TO5_2W 4 6211 N
. NODE DCRNET1 NODE5SEENBY6 5 <NODE selector is used for New DCR calls>
> . TABLE DESTNODE (ACCESSED IF DCR IS ACTIVATED IN OFFICE)
. . NORMAL ROUTING RESUMES IF NODE TUPLE IS SKIPPED
. . DCR NETWORK: DCRNET1
. . . NODE5SEENBY6 NODE7SEENBY6 5 T OFR4 865 T OFR2 865
. . . NODE7SEENBY6 NODE5SEENBY6 5 T OFR4 967 T OFR2 865
. . . . TABLE OFRTMA4
. . . . . Tuple not found. Default to old index.
. . . . TABLE OFR4
. . . . 967 N D NET1_6TO7_2W 3 947 N
. . . . TABLE OFRTMA4
. . . . . Tuple not found. Default to old index.

```

Figure 45 TRAVER example: AIN response translations with DCR handicap removal (Continued)

```

. . . . EXIT TABLE OFR4
. . . . NODE5SEENBY6 NODE7SEENBY6 5 T OFR4 865 T OFR2 865
. . . . TABLE OFRTMA2
. . . . . Tuple not found. Default to old index.
. . . . TABLE OFR2
. . . . . 865 N D EXC_6TO5_2W 4 6211 N
. . . . TABLE OFRTMA2
. . . . . Tuple not found. Default to old index.
. . . . EXIT TABLE OFR2
. . . . EXIT TABLE DESTNODE
. . . . N D NET1_6TO4_2W 3 944 N
. . . . N D NET1_6TO7_2W 3 947 N
. . . . T OFR2 865
. . . . TABLE OFRTMA2
. . . . . Tuple not found. Default to old index.
. . . . TABLE OFR2
. . . . . 865 N D EXC_6TO5_2W 4 6211 N
. . . . EXIT TABLE OFR2
. . . . EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNPA results are used.
TABLE FNPA7DIG
TUPLE NOT FOUND
TABLE TRIGGRP
OFCTRIG INFOANAL
<Traver output Skipped since it is not relevant>

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 NET1_6TO5_2W      6211004      ST <Direct Route>
2 NET1_6TO7_2W      9475004      ST <Tandem Route>
3 EXC_6TO5_2W      6211004      ST <Exception Route>

TREATMENT ROUTES. TREATMENT IS: GNCT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

The figure that follows shows the displayed output for AFR interworking with DCR.

Figure 46 TRAVER example: AFR Interworking with DCR

```

>traver l 6211002 9465004 b
TABLE LINEATTR
407 1FR NONE NT 10 NILSFC 0 NIL NIL 00 $

<Traver output Skipped - Non-Relevant>

. SUBTABLE RTEREF
. 965 DCRT DCRNET1 NODE5SEENBY6 5
.   N D NET1_6TO5_2W 4 6211 N
.   NODE DCRNET1 NODE5SEENBY6 5
. . TABLE DESTNODE (ACCESSED IF DCR IS ACTIVATED IN OFFICE)
. . NORMAL ROUTING RESUMES IF NODE TUPLE IS SKIPPED
. . DCR NETWORK: DCRNET1
. . . NODE5SEENBY6 NODE7SEENBY6 5 T OFR4 865 T OFR2 865
. . . NODE7SEENBY6 NODE5SEENBY6 5 T OFR4 967 T OFR2 865
. . . . TABLE OFR4
. . . . 967 N D NET1_6TO7_2W 3 947 N
. . . . EXIT TABLE OFR4
. . . NODE5SEENBY6 NODE7SEENBY6 5 T OFR4 865 T OFR2 865
. . . . TABLE OFR2
. . . . 865 N D EXC_6TO5_2W 4 6211 N
. . . . AFR TCPINFO
TABLE TRIGGRP
OFCTRIG NETBUSY
. AFR $ NIL
Trigger AIN AFR is applicable to office.
. . TABLE TRIGINFO
. . TCPINFO EVENT TCAP R01 TCPIP 0 $
AIN Network Busy TDP: trigger criteria met.
Querying the database will occur if network is busy.
Use the AINMQG option to save the query to a file for use in TstQuery.
. . . . EXIT TABLE OFR2
. . EXIT TABLE DESTNODE
.   N D NET1_6TO4_2W 3 944 N
.   N D NET1_6TO7_2W 3 947 N
.   T OFR2 865
. . TABLE OFR2
. . 865 N D EXC_6TO5_2W 4 6211 N
. . AFR TCPINFO
TABLE TRIGGRP
OFCTRIG NETBUSY
. AFR $ NIL

```

Figure 47 TRAVER example: AFR Interworking with DCR (Continued)

```
Trigger AIN AFR is applicable to office.
. . TABLE TRIGINFO
. . TCPINFO EVENT TCAP R01 TCPIP 0 $
AIN Network Busy TDP: trigger criteria met.
Querying the database will occur if network is busy.
Use the AINMQG option to save the query to a file for use in TstQuery.
. . EXIT TABLE OFR2
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT

<Traver output Skipped - Non-Relevant>

+++ TRAVER: SUCCESSFUL CALL TRACE +++

AIN Network Busy TDP: trigger criteria met.
Querying the database will occur if network is busy.
Use the AINMQG option to save the query to a file for use in TstQuery.

DIGIT TRANSLATION ROUTES

1 NET1_6TO5_2W      6211004      ST
2 NET1_6TO7_2W      9475004      ST
3 EXC_6TO5_2W      6211004      ST

TREATMENT ROUTES. TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

4. Translation verification tool for LRN-LNP

ATTENTION

LNP is based on AIN Essentials. You must be familiar with AIN before using this document. For a list of relevant AIN documents, please see “About this document”.

The Translation Verification tool (TRAVER) is a low level diagnostic tool that simulates a call from a user-specified origination to a user-specified destination, allowing a customer to perform translation verification. TRAVER displays the AIN specific translation, routing, and trigger subscription information. It also indicates whether or not trigger criteria has been met. TRAVER is enhanced to show when an LNP trigger is encountered. Since TRAVER only simulates a call, a query message is not sent to the LNP SCP.

Any changes that are required by the AIN application for LNP are mirrored in AIN TRAVER code. This includes all Query and Response processing, and SOC changes. Translation verification tool TRAVER is modified to reflect the functionality of LNP translation.

The encountering of the LNP trigger is displayed in the trace portion of TRAVER in the same manner as any other trigger encountered at the Info_Analyzed TDP.

If the LNP trigger is encountered and criteria are met, TRAVER stops tracing and states that a query would be launched to the database.

TRAVER is enhanced to accept an extra DN parameter. This new parameter permits simulation of LNP SCP response processing, by allowing the user to specify the Original_dialed DN as well as the CalledPartyID on the command line.

4.1 New parameters for LNP TRAVER

TRAVER command allows customer to perform translation verification. For the purpose of LNP translation, a number of new parameters are added to the TRAVER command.

4.1.1 TCNI: Translated Called Number Indicator.

This parameter indicates that the Translated Called Number Indicator (bit M) in the FCI parameter of the ISUP IAM is set to Number Translated. It indicates that an LNP query has been performed on a previous switch.

When a call originated from an ISUP trunk and Number Translated is set in the IAM, then TCNI should be used in the TRAVER. If a GAP is present in the IAM, then TCNI should have the 10_digit GAP as its parameter, otherwise 'n' is used. Please refer to Figure 48 on page 151 for a TRAVER example with TCNI parameter.

4.1.2 LNPAR: LNP Analyze Route

This is a new Response Type of the option AINRES. This response type is used to signify that the TRAVER being performed is for an Analyze_Route response resulting from an LNP data base query. This sub-option requires one parameter - Original_Called_DN.

When verifying the LNP response translation, LNPAR should be used. Please refer to Figure 49 on page 151 for a TRAVER example with LNPAR parameter.

4.1.3 Number Pooling Enhancements

TRAVER has been modified for Number Pooling subscribers. TRAVER now allows for LNP and MBG information to be entered on the command line.

4.2 TRAVER enhancement

TRAVER enhancements are covered under the following topics:

- command syntax
- summary of new parameters
- foreign LRN enhancement
- TRAVER examples

4.2.1 Command syntax

The called number in the following TRAVER examples can be a 7 or 10 digit number. This applies to trunk TRAVERs only. Figure 48 on page 151 provides a TRAVER command example for incoming ISUP LNP calls with FCI bit M (Translated Called Number indicator) set to Number Translated. Figure 49 on page 151 provides a TRAVER command example for AIN LNP trigger responses.

Figure 48 TRAVER command—incoming ISUP LNP calls with FCI bit M set

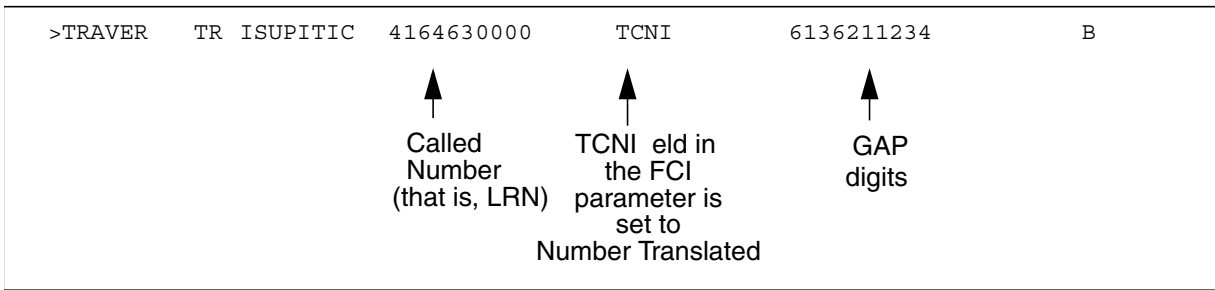
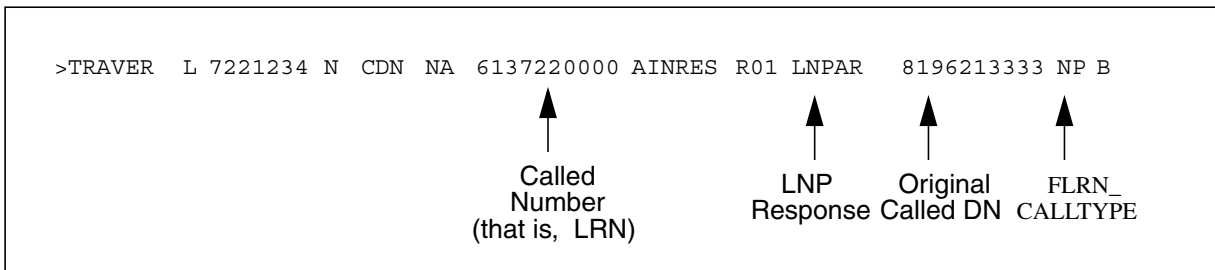


Figure 49 TRAVER command example for AIN LNP trigger responses



4.2.2 Summary of new parameters

There are some new parameters are introduced for the purpose of LNP translation. They are: TCNI, LNPAR, LRN and GAP. The following table gives a summary of these parameters.

Table 1 New Parameter Definition

Parameter	Value	Definition
TCNI	None	For ISUP-originating calls, this parameter indicates that the Translated Called Number Indicator (bit M) in the FCI parameter of the ISUP IAM is set to Number Translated. It indicates that an LNP query has been performed on a previous switch. This option has an optional parameter GAP_DIGITS. See description for GAP_DIGIT below.
LNPAR	None	This is a new Response Type of the option AINRES. This response type is used to signify that the TRAVER being performed is for an Analyze_Route response resulting from an LNP data base query. This sub-option requires one parameter-Original_Called_DN. See description of 'ORIG_CALLED_DN', below.

Table 1 New Parameter Definition (continued)

Parameter	Value	Definition
GAP_DIGITS	10-digit DN or N	This is an optional parameter of the Traver option TCNI. This 10-digit represents the GAP, as contained in the incoming ISUP message. If "N" is entered, it indicates no GAP is present.
ORIG_CALLED_DN	N or a 10-digit DN	This is the required parameter for the suboption LNPAR of AINRES. A value of "N" indicates that the ORIG_CALLED_DN is the same as the Called DN returned from the SCP (a parameter of TRAVER CDN). The TRAVER output in this case is changed in NA008 and NA009.
FLRN_CALLTYPE	NONE NP DD	No calltype specified - default calltype of NP used in FLRN translations No Prefix calltype used for FLRN translations No Prefix calltype used for FLRN translations

4.2.3 Foreign LRN enhancement

With this activity, Call Processing stores pre-LNP trigger call classification parameter values in order to use them during post-LNP trigger Call Processing. Pre-LNP trigger and post-LNP trigger TRAVERS are two separate TRAVERS, so, unfortunately, pre-LNP trigger data cannot easily be stored for use in a post-LNP trigger TRAVER. A solution for this problem is to add a new command line option to TRAVER. This new option allows a craft person to enter a desired pre-LNP trigger call type on the CI command line, when using TRAVER to verify FLRN translations.

The following two call types can be specified: NP (No Prefix) for local calls or DD (Direct Dialed) for toll calls. The user specified call type overrides call type determined based on the translation tables data ll.

To warn a craft person that the NP call type is used, and not DD call type determined by translations, the following message is output to the TRAVER trace:

```
LNP Info: Call Type set to NP for FLRN translation,
```

In the opposite case the following message is output:

```
LNP Info: Call Type set to DD for FLRN translation
```

At the beginning of the TRAVER trace, the above warning message is always displayed to indicate that NP or DD call type is imposed. Since call type may

not be specified at the CI command line, TRAVER assumes that a default NP call type is used during FLRN translation.

Additional changes have been made to the way TRAVER performs LCA screening during FLRN translations. It is performed on Called Party DN. If the LCABILL option is data lled, TRAVER gets the pre-LNP trigger values by performing LCA screening on the Called Party DN entered on the command line. In this case, a message is displayed at the TRAVER trace in order to provide a warning:

LNP Info: LCABILL on - Billing done on basis of pre-query LCA screening.

4.2.4 TRAVER examples

The TRAVER examples in this section demonstrate LNP triggering and translations. Table 2 lists the examples and their corresponding figures.

Note: In all the LNP response TRAVER examples in this section the Response Translation Simplification Feature has been used.

Table 2 List of TRAVER examples

TRAVER example	Figure number
Call routed to a resident DN (same NPA)	Figure 50 on page 156
Call routed to a resident DN ported from another switch; no special routing info provided in table LNPCODE	Figure 51 on page 158
Call routed to a resident DN ported from another switch; special routing info provided in table LNPCODE	Figure 52 on page 160
Call to a ported DN, call triggers	Figure 53 on page 162
Call to a resident ported DN, LNPI trigger is escaped	Figure 54 on page 164
Line origination, Foreign LRN returned from SCP	Figure 55 on page 166
MF Trk org, Foreign LRN returned from SCP	Figure 56 on page 168
Call originating from an ISUP trunk with TCNI field set to Number Translated and Home LRN as the CdPN; no special routing info provided in LNPCODE	Figure 57 on page 169
Call originating from an ISUP trunk with TCNI field set to Number Translated and Home LRN as the CdPN; special routing info provided in LNPCODE	Figure 58 on page 170
ISUP trunk origination, terminating to MF trunk	Figure 59 on page 171

Table 2 List of TRAVER examples (continued)

TRAVER example	Figure number
Line origination, Home LRN returned from SCP; no special routing info provided in LNPCODE	Figure 60 on page 172
Line origination, Home LRN returned from SCP; special routing info provided in LNPCODE	Figure 61 on page 174
Line origination, Dialed DN returned from SCP, dialed DN resident on querying switch	Figure 62 on page 175
Trunk origination, dialed DN returned from SCP, dialed DN has PORT option	Figure 63 on page 175
Trunk origination, terminating to ISUP trunk, SPN set	Figure 64 on page 177
Line origination, terminating to ISUP trunk, SPN set	Figure 65 on page 178
TRAVER examples for TCNI N digits	Figure 66 on page 180
TRAVER for calls to PBX lines ported from another switch	Figure 67 on page 181
Trunk origination, Home LRN received but the GAP is not resident	Figure 68 on page 182
Trunk Origination, Home LRN Received, GAP not resident, but NPDIGMAP indicated new mapping for Called DN	Figure 69 on page 183
Line origination, Home LRN returned from SCP	Figure 70 on page 184
LNP RTE allows triggering after routing out of STDPRTCT with T selector	Figure 71 on page 186
LNP RTE allows triggering after routing out of CLSVSCRC	Figure 72 on page 188
NP and DD pre-query calltype examples; NP specified	Figure 73 on page 191
NP and DD pre-query calltype examples; DD specified	Figure 74 on page 193
NP and DD pre-query calltype examples; LCABILL option on	Figure 75 on page 196
TRAVER example—error response 1	Figure 76 on page 201
TRAVER example—error response 2	Figure 77 on page 201

Table 2 List of TRAVER examples (continued)

TRAVER example	Figure number
TRAVER example—error response 3	Figure 78 on page 201
TRAVER example—error response 4	Figure 79 on page 201
TRAVER example—error response 5	Figure 80 on page 201
64k Data call using information elements	Figure 81 on page 203
64k Data call without information elements (normal dialing)	Figure 82 on page 208

Figure 50 Call routed to a resident DN (same NPA)

```
traver l 4164671001 4671002 b
TABLE LINEATTR
400 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416_PUB_400 L416_LATA1_400 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416_PUB_400 NSCR 416 PUB TSPS N $
TABLE RATEAREA
L416_LATA1_400 L416 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE STDPRTCT
PUB ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS: N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
416 Y 772 1 ( 90) ( 1) ( 4) ( 0) 0 $
. SUBTABLE HNPACODE
. 467 467 DN 416 467
TABLE TOFCNAME
416 467 $
TABLE DNINV
416 467 1002 L HOST 02 0 04 16
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
```

Figure 50 Call routed to a resident DN (same NPA) (Continued)

```
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNPAs results are used.
TABLE LCASCRCN
416 L416 ( 27) OPTL N N
. SUBTABLE LCASCR
. 467 467
TABLE PFXTREAT
OPTL NP Y NP UNDT
AIN Info Collected TDP: no subscribed trigger.
TABLE FNPA7DIG
TUPLE NOT FOUND
Checking AIN SDS Trigger Items as SDS is compatible with current call
Checking AIN N11 Trigger Items as N11 is compatible with current call
Checking AIN LNP Trigger Items as LNP is compatible with current call
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                4164671002          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

Figure 51 Call to a resident DN ported from another switch; no special routing in LNPCODE

```

traver l 4164671001 6637001 b
TABLE LINEATTR
400 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416_PUB_400 L416_LATA1_400 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416_PUB_400 NSCR 416 PUB TSPS N $
TABLE RATEAREA
L416_LATA1_400 L416 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE STDPRTCT
PUB ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS:   N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:   NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
416 Y 772 1 ( 90) ( 1) ( 4) ( 0) 0 $
. SUBTABLE HNPACODE
. 6637001 663709 LRTE 730
. SUBTABLE RTEREF
. 730 T OFRT 730
. . TABLE OFRT
. . 730 S D C1C0_ISUPITOG
. . EXIT TABLE OFRT
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is resident.
LNP Info: Called DN has non-native NPANXX.

```


Figure 51 Call to a resident DN ported from another switch; no special routing in LNPCODE (Continued)

```

LNP Info: HNP results not used.
TABLE LNPCODE
TUPLE NOT FOUND
LNP Info: Ported DN termination in effect.
TABLE TOFCNAME
613 663 (NONNATIVE ) $
TABLE DNINV
613 663 7001 L REM1 01 0 02 09
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LCASCRCN
416 L416 ( 27) OPTL N N
. SUBTABLE LCASCR
. 663 663
TABLE PFXTREAT
OPTL NP Y NP UNDT
AIN Info Collected TDP: no subscribed trigger.
TABLE FNPA7DIG
416 663 663 613
Checking AIN SDS Trigger Items as SDS is compatible with current call
Checking AIN N11 Trigger Items as N11 is compatible with current call
Checking AIN LNP Trigger Items as LNP is compatible with current call
. . TABLE OFCTIID
. . 4 L613663 ON
. . TABLE TRIGITM
. . 4 L613663 LNP (DG 613663) (ESCEA ) (ESCOPE ) (ESCDN ) $ ULK EVENT
R01 SS7 AINPOP
. . $
Not triggering due to criteria: ESCDN
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                6136637001          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

Figure 52 Call to a resident DN ported from another switch; special routing in LNPCODE

```

traver l 4164671001 6637001 b
TABLE LINEATTR
400 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416_PUB_400 L416_LATA1_400 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416_PUB_400 NSCR 416 PUB TSPS N $
TABLE RATEAREA
L416_LATA1_400 L416 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE STDPRTCT
PUB ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS: N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
416 Y 772 1 ( 90) ( 1) ( 4) ( 0) 0 $
. SUBTABLE HNPACODE
. 6637001 663709 LRTE 730
. SUBTABLE RTEREF
. 730 T OFRT 730
. . TABLE OFRT
. . 730 S D C1C0_ISUPITOG
. . EXIT TABLE OFRT
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is resident.
LNP Info: Called DN has non-native NPANXX.
LNP Info: HNPA results not used.
TABLE LNPCODE
416 613663700 6136637043 T IBNRTE 855

```

Figure 52 Call to a resident DN ported from another switch; special routing in LNPCODE (Continued)

```

. TABLE IBNRTE
. 855 VFG N N N AIN613 613
LNP INFO: VFG digit manipulation on LNP information not permitted
LNP INFO: IF LNP query occurs and the called DN is non-ported,
LNP INFO: send the call to RODR

. . TABLE DIGMAN
. . 613
. . EXIT TABLE DIGMAN
.
. EXIT TABLE IBNRTE
EXIT TABLE LNPCODE
LNP Info: Routing based on LNPCODE result.
TABLE LCASCRCN
416 L416 ( 27) OPTL N N
. SUBTABLE LCASCR
. 663 663
TABLE PFXTREAT
OPTL NP Y NP UNDT
AIN Info Collected TDP: no subscribed trigger.
TABLE FNPA7DIG
416 663 663 613
Checking AIN SDS Trigger Items as SDS is compatible with current call
Checking AIN N11 Trigger Items as N11 is compatible with current call
Checking AIN LNP Trigger Items as LNP is compatible with current call
. . TABLE OFCTIID
. . 4 L613663 ON
. . TABLE TRIGITM
. . 4 L613663 LNP (DG 613663) (ESCEA ) (ESCOP ) (ESCDN ) $ ULK EVENT
R01 SS7 AINPOP
. . $
Not triggering due to criteria: ESCDN
AIN Info Analyzed TDP: trigger criteria not met.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 VFG: AIN613          6637001          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

Figure 53 Call to a ported DN, call triggers

```
traver l 4164671001 4638003 b
TABLE LINEATTR
400 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416_PUB_400 L416_LATA1_400 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416_PUB_400 NSCR 416 PUB TSPS N $
TABLE RATEAREA
L416_LATA1_400 L416 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE STDPRTCT
PUB ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS: N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
416 Y 772 1 ( 90) ( 1) ( 4) ( 0) 0 $
. SUBTABLE HNPACODE
. 463 463 DN 416 463
TABLE TOFCNAME
416 463 $
TABLE DNINV
416 463 8003 D BLDN
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE TMTCNTL
LNT ( 46)
. SUBTABLE TREAT
```

Figure 53 Call to a ported DN, call triggers (Continued)

```

. BLDN Y T OFRT 50
. TABLE OFRT
.   50 S D VDN
.     S D *OFLO
.     S D LKOUT
. EXIT TABLE OFRT
LNP Info: Called DN is not resident.
LNP Info: HNPA results are used.
TABLE LCASCRCN
416 L416 ( 27) OPTL N N
. SUBTABLE LCASCR
. 463 463
TABLE PFXTREAT
OPTL NP Y NP UNDT
AIN Info Collected TDP: no subscribed trigger.
TABLE FNPA7DIG
TUPLE NOT FOUND
Checking AIN SDS Trigger Items as SDS is compatible with current call
Checking AIN N11 Trigger Items as N11 is compatible with current call
Checking AIN LNP Trigger Items as LNP is compatible with current call
. . TABLE OFCTIID
. . 4 L416463 ON
. . TABLE TRIGITM
. . 4 L416463 LNP (DG 416463) (ESCEA ) (ESCOPE ) (ESCDN ) $ ULK EVENT
R01 SS7 AINPOP
. . $
. . . TABLE C7GTTTYPE
. . . AINPOP ANSI7 6 $
. . . TABLE C7GTT
. . . AINPOP 4164638003 4164638003 PCSSN (SIMTOOL_RTESET SIMTOOL3 0)
$ SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database.
LNP Info: Displaying pre-query translations result.
LNP Info: It is used if the database indicates the called DN is
non-ported

TREATMENT ROUTES.  TREATMENT IS: BLDN
1 VDN
2 *OFLO
3 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

Figure 54 Call to a resident ported DN, LNP trigger is escaped

```
traver l 4164671001 9637004 b
TABLE LINEATTR
400 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416_PUB_400 L416_LATA1_400 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416_PUB_400 NSCR 416 PUB TSPS N $
TABLE RATEAREA
L416_LATA1_400 L416 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE STDPRTCT
PUB ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS: N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
416 Y 772 1 ( 90) ( 1) ( 4) ( 0) 0 $
. SUBTABLE HNPACODE
. 9637004 963709 LRTE 747
. SUBTABLE RTEREF
. 747 T OFRT 747
. . TABLE OFRT
. . 747 S D C1S1_ISUPITOG
. . EXIT TABLE OFRT
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is resident.
LNP Info: Called DN has non-native NPANXX.
LNP Info: HNPA results not used.
TABLE LNPCODE
TUPLE NOT FOUND
LNP Info: Ported DN termination in effect.
```

Figure 54 Call to a resident ported DN, LNP trigger is escaped (Continued)

```

TABLE TOFCNAME
905 963 (NONNATIVE ) $
TABLE DNINV
905 963 7004 L HOST 05 1 06 02
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LCASCRCN
416 L416 ( 27) OPTL N N
. SUBTABLE LCASCR
. 963 963
TABLE PFXTREAT
OPTL NP Y NP UNDT
AIN Info Collected TDP: no subscribed trigger.
TABLE FNPA7DIG
416 963 963 905
Checking AIN SDS Trigger Items as SDS is compatible with current call
Checking AIN N11 Trigger Items as N11 is compatible with current call
Checking AIN LNP Trigger Items as LNP is compatible with current call
. . TABLE OFCTIID
. . 4 L905963 ON
. . TABLE TRIGITM
. . 4 L905963 LNP (DG 905963) (ESCEA ) (ESCOPE ) (ESCDN ) $ ULK EVENT
R01 SS7 AINPOP
. . $
Not triggering due to criteria: ESCDN
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                9059637004          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

Figure 55 Line origination, Foreign LRN returned from SCP

```
traver l 4164671001 n cdn na 6136631088 ainres r01 lnpar 4164638003 b
Warning: Routing characteristics are present.
Originator must be able to send in
characteristics specified.
LNP Info: Call Type set to NP for FLRN translations
TABLE RTECHAR
. LECNA (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE LINEATTR
400 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416_PUB_400 L416_LATA1_400 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416_PUB_400 NSCR 416 PUB TSPTS N $
TABLE RATEAREA
L416_LATA1_400 L416 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
. Resulting digits are: 16136631088
TABLE STDPRTCT
PUB ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 16 19 N DD 1 NA
LNP Info: Call Type set to NP for FLRN translations
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
416 Y 772 1 ( 90) ( 1) ( 4) ( 0) 0 $
. SUBTABLE HNPACODE
. 613663108 6136631098 FRTE 730
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 730 T OFRT 730
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
```


Figure 55 Line origination, Foreign LRN returned from SCP (Continued)

```
. . TABLE OFRT
. . 730 S D C1C0_ISUPITOG
. . EXIT TABLE OFRT
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: HNPA translation completed on Foreign LRN.
LNP Info: HNPA results are used.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 C1C0_ISUPITOG          6136631088          ST
   PORTED NUMBER GAP: 4164638003

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

Figure 56 MF Trunk origination, Foreign LRN returned from SCP

```
traver tr cls1_mfitic n cdn na 6136631088 aines r01 lnpar 9059638003 b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
LNP Info: Call Type set to NP for FLRN translations
TABLE RTECHAR
. LECNA (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE TRKGRP
C1S1_MFITIC IT 63 ITTD NCTC IC NIL MIDL 613 PUB NSCR 613 000 N Y $
Warning: Routing characteristics in TRAVER command
line will override any bearer capability datafilled
in table TRKGRP.
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
. Resulting digits are: 6136631088
TABLE STDPRTCT
PUB ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS: N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 932 2 ( 422) ( 1) ( 84) ( 0) 2 $
. SUBTABLE HNPACODE
. 613663108 6136631098 FRTE 730
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 730 T OFRT 730
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 730 S D C1C0_ISUPITOG
. . EXIT TABLE OFRT
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: HNPACONT translation completed on Foreign LRN.
LNP Info: HNPACONT results are used.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 C1C0_ISUPITOG 6136631088 ST
PORTED NUMBER GAP: 9059638003
TREATMENT ROUTES. TREATMENT IS: GNCT
1 *OFLO
+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

Foreign LRN

Orig dialed DN

Figure 57 Call from ISUP trunk—TCNI eld set to Number T ranslated—Home LRN as the CdPN—no special routing in LNPCODE

```

traver tr sain_isupitic 4164631088 tcni 6136637001 b
TABLE TRKGRP
SAIN_ISUPITIC IT 63 ITTD NCRT IC NIL MIDL 613 P621 NSCR 613 000 N Y $
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
LNP Info: Home LRN received.
LNP Info: Bypassing STDPRTCT and HNPACONT translations.
LNP Info: Orig Called DN is resident.
TABLE LNPCODE
TUPLE NOT FOUND
LNP Info: Ported DN Termination in effect.
TABLE HOMELRN
416 463 $ (SITE (HOST)$)$
TABLE TOFCNAME
613 663 (NONNATIVE ) $
TABLE DNINV
613 663 7001 L REM1 01 0 02 09
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
AIN Info Collected TDP: no subscribed trigger.
Checking AIN SDS Trigger Items as SDS is compatible with current call
Checking AIN N11 Trigger Items as N11 is compatible with current call
Skipping AIN LNP Trigger Items as LNP is NOT compatible with current
call
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                6136637001          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

Figure 58 Call from ISUP trunk— TCNI eld set to Number T ranslated—Home LRN as the CdPN—special routing in LNPCODE

```
traver tr sain_isupitic 4164631088 tcni 6136637001 b
TABLE TRKGRP
SAIN_ISUPITIC IT 63 ITTD NCRT IC NIL MIDL 613 P621 NSCR 613 000 N Y $
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
LNP Info: Home LRN received.
LNP Info: Bypassing STDPRTCT and HNPACONT translations.
LNP Info: Orig Called DN is resident.
TABLE LNPCODE
613 613663700 613663700 T IBNRTE 855
. TABLE IBNRTE
. 855 VFG N N N AIN613 613
. . TABLE DIGMAN
. . 613
. . EXIT TABLE DIGMAN
.
. EXIT TABLE IBNRTE
EXIT TABLE LNPCODE
LNP Info: Routing based on LNPCODE result.
TABLE HOMELRN
416 463 $ (SITE (HOST)$)$
AIN Info Collected TDP: no subscribed trigger.
Checking AIN SDS Trigger Items as SDS is compatible with current call
Checking AIN N11 Trigger Items as N11 is compatible with current call
Skipping AIN LNP Trigger Items as LNP is NOT compatible with current
call
AIN Info Analyzed TDP: trigger criteria not met.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 VFG: AIN613          6136637001          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

Figure 59 ISUP Trunk origination, terminating to MF trunk (at intermediate switch)

```

traver tr sain_isupitic 9059632099 tcni 4164639021 b
TABLE TRKGRP
SAIN_ISUPITIC IT 63 ITTD NCRT IC NIL MIDL 613 P621 NSCR 613 000 N Y $
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE STDPRTCT
P621 ( 1) ( 0) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 90 910 N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HNPACONT
613 Y 932 2 ( 422) ( 1) ( 84) ( 0) 2 $
. SUBTABLE HNPACODE
. 905963209 905963209 FRTE 750
. SUBTABLE RTEREF
. 750 T OFRT 750
. . TABLE OFRT
. . 750 S D C1S1_MFITOG
. . EXIT TABLE OFRT
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: HNPACONT translation completed on Foreign LRN.
LNP Info: HNPACONT results are used.
AIN Info Collected TDP: no subscribed trigger.
Checking AIN SDS Trigger Items as SDS is compatible with current call
Checking AIN N11 Trigger Items as N11 is compatible with current call
Skipping AIN LNP Trigger Items as LNP is NOT compatible with current
call
AIN Info Analyzed TDP: trigger criteria not met.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 C1S1_MFITOG          4164639021          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

Figure 60 Line origination—Home LRN returned from SCP—no special routing in LNPCODE

```
traver l 4164671001 n cdn na 4164631077 ainres r01 lnpar 6136637001 b
Warning: Routing characteristics are present.
      Originator must be able to send in
      characteristics specified.
TABLE RTECHAR
. LECNA (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE LINEATTR
400 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416_PUB_400 L416_LATA1_400 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416_PUB_400 NSCR 416 PUB TSPS N $
TABLE RATEAREA
L416_LATA1_400 L416 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
LNP Info: Home LRN received.
LNP Info: Bypassing STDPRTCT and HNPACONT translations.
LNP Info: Orig Called DN is resident.
TABLE LNPCODE
TUPLE NOT FOUND
LNP Info: Ported DN Termination in effect.
TABLE HOMELRN
416 463 $ (SITE (HOST)$)$
TABLE TOFCNAME
613 663 (NONNATIVE ) $
TABLE DNINV
613 663 7001 L REM1 01 0 02 09
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
```

**Figure 60 Line origination—Home LRN returned from SCP—no special routing in LNPCODE
(Continued)**

```
TABLE DNGRPS
TUPLE NOT FOUND
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                6136637001          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

Figure 61 Line origination—Home LRN returned from SCP—special routing in LNPCODE

```

traver l 4164671001 n cdn na 4164631077 ainres r01 lnpar 6136637001 b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. LECNA (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE LINEATTR
400 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416_PUB_400 L416_LATA1_400 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416_PUB_400 NSCR 416 PUB TSPS N $
TABLE RATEAREA
L416_LATA1_400 L416 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN OFFICE TRIGGRP TIID
LNP Info: Home LRN received.
LNP Info: Bypassing STDPRTCT and HNPACONT translations.
LNP Info: Orig Called DN is resident.
TABLE LNPCODE
416 613663700 6136637043 T IBNRTE 855
. TABLE IBNMAP
. . Tuple not found. Default to old index.
. TABLE IBNRTE
. 855 VFG N N N AIN613 613
. . TABLE DIGMAN
. . 613
. . EXIT TABLE DIGMAN
.
. EXIT TABLE IBNRTE
EXIT TABLE LNPCODE
LNP Info: Routing based on LNPCODE result.
TABLE HOMELRN
416 463 $ (SITE (HOST)$)$

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 VFG: AIN613                6136637001                ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```


Figure 62 Line Origination, Dialed DN returned from SCP, dialed DN is resident

```
traver l 4164671001 n cdn na 4164631021 ainres r01 lnpar n b
LNP Info: Call processing will use pre-query translations
LNP Info: result to route this call.
```

Whenever an LNP agent dials a portable number and an LNP query is launched, and LNP response processing determines that the dialed DN (terminator) is not ported, then AIN response translations are avoided. The prequery translations result is still valid and is used.

AIN 0.1 Response Translations (re-translations) are avoided only when the terminator status is found to be not ported. This is determined when the dialed digits are identical to the CalledPartyID parameter in the Analyze_Route response.

In cases where the PORT option is assigned to the called DN and an LNP query is launched, LNP response processing invokes AIN Essentials response translations and retranslates the call. The prequery translations result is not used.

Figure 63 Trunk origination, dialed DN returned from SCP, dialed DN has PORT option

```
traver tr clc0_isupitic n cdn na 4164631021 ainres r01 lnpar n b
LNP Info: Port option has been assigned to the called DN.
LNP Info: Using response translations result to route call.
Warning: Routing characteristics are present.
         Originator must be able to send in
         characteristics specified.
TABLE RTECHAR
. LECNA (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE TRKGRP
CLC0_ISUPITIC IT 63 ITTD NCRT IC NIL MIDL 613 PUB NSCR 613 000 N Y $
Warning: Routing characteristics in TRAVER command
line will override any bearer capability datafilled
in table TRKGRP.
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
. Resulting digits are: 4164631021
```

**Figure 63 Trunk origination, dialed DN returned from SCP, dialed DN has PORT option
(Continued)**

```
TABLE STDPRTCT
PUB ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS: N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 932 2 ( 422) ( 1) ( 84) ( 0) 2 $
. SUBTABLE HNPACODE
. 416 416 HNPA 0
. 463 463 DN 416 463
TABLE TOFCNAME
416 463 $
TABLE DNINV
416 463 1021 L HOST 02 0 05 25
TABLE DNFEAT
416 463 1021 (PORT ) $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: HNPA translation completed on Called DN.
LNP Info: HNPA results are used.
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                4164631021          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

Figure 64 Trunk origination, terminating to ISUP trunk, SPN set (at intermediate switch)

```

traver tr slc0_isupitic 9059631099 tcni 4164739351 b
TABLE TRKGRP
Slc0_ISUPITIC IT 63 ITTD NCRT IC NIL MIDL 613 PUB NSCR 613 000 N Y $
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
LNP Info: Home LRN received.
LNP Info: Bypassing STDPRTCT and HNPACONT translations.
LNP Info: Orig Called DN is resident.
TABLE LNPCODE
TUPLE NOT FOUND
LNP Info: Ported DN Termination in effect.
TABLE HOMELRN
905 963 $ (SITE (HOST)$)$
TABLE TOFCNAME
416 473 (NONNATIVE ) $
TABLE DNINV
416 473 9351 L HOST 01 1 02 05
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
AIN Info Collected TDP: no subscribed trigger.
Checking AIN SDS Trigger Items as SDS is compatible with current call
Checking AIN N11 Trigger Items as N11 is compatible with current call
Skipping AIN LNP Trigger Items as LNP is NOT compatible with current
call
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                4164739351          ST

TREATMENT ROUTES.   TREATMENT IS: GNCT
1 T120

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

Figure 65 Line origination, terminating to ISUP, SPN set

```
traver l 9059671001 n cdn na 4164631077 ainres r01 lnpar 9059637621
np b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
LNP Info: Call Type set to NP for FLRN translations
TABLE RTECHAR
. LECNA (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE LINEATTR
402 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 905_PUB_326 L905_LATA1_402 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
905_PUB_326 NSCR 905 PUB TSPS N $
TABLE RATEAREA
L905_LATA1_402 L905 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
. Resulting digits are: 4164631077
TABLE STDPRTCT
PUB ( 1) ( 0) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS: N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATN
TUPLE NOT FOUND
TABLE HNPACONT
905 Y 772 1 ( 91) ( 1) ( 0) ( 0) 3 $
. SUBTABLE HNPACODE
. 416463107 4164631087 FRTE 747
. SUBTABLE RTEMAP
. Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 747 T OFRT 747
```

Figure 65 Line origination, terminating to ISUP, SPN set (Continued)

```
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 747 S D S1C1_ISUPITOG
. . EXIT TABLE OFRT
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: HNP A translation completed on Foreign LRN.
LNP Info: HNP A results are used.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 S1C1_ISUPITOG          9059637621          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

Figure 66 TRAVER example for TCNI N digits (at intermediate switch)

```
traver tr slc1_isupitic 9059631001 tcni n b
TABLE TRKGRP
SlC1_ISUPITIC IT 63 ITTD NCRT IC NIL MIDL 613 PUB NSCR 613 000 N Y $
TABLE OFCVAR
AIN_OFFICE TRIGGRP TIID
TABLE STDPRTCT
PUB ( 1) ( 0) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS: N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HNPACONT
613 Y 930 20 ( 122) ( 1) ( 0) ( 0) 0 $
. SUBTABLE HNPACODE
. 905 905 HNP A 0
. 963 963 DN 905 963
TABLE TOFCNAME
905 963 $
TABLE DNINV
905 963 1001 L HOST 01 1 12 04
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: HNP A translation completed on Called DN.
LNP Info: HNP A results are used.
AIN Info Collected TDP: no subscribed trigger.
Checking AIN SDS Trigger Items as SDS is compatible with current call
Checking AIN N11 Trigger Items as N11 is compatible with current call
Skipping AIN LNP Trigger Items as LNP is NOT compatible with current
call
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.
+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES
1 LINE          9059631001          ST

TREATMENT ROUTES. TREATMENT IS: GNCT
1 T120

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

Figure 67 TRAVER for calls to PBX lines ported from another switch

```

.traver tr slc0_isupitic 9059631099 tcni 4164638651 b
TABLE TRKGRP
S1C0_ISUPITIC IT 63 ITTD NCRT IC NIL MIDL 613 PUB NSCR 613 000 N Y $
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
LNP Info: Home LRN received.
LNP Info: Bypassing STDPRTCT and HNPACONT translations.
LNP Info: Orig Called DN is resident.
TABLE LNPCODE
TUPLE NOT FOUND
LNP Info: Ported DN Termination in effect.
TABLE HOMELRN
905 963 $ (SITE (HOST)$)$
TABLE TOFCNAME
416 463 (NONNATIVE ) $
TABLE DNINV
416 463 8651 T OFRT 58
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
. TABLE OFRT
. 58 ISA N N N S1C1_PRI_2WAY PVT 0 PVT 100
. . TABLE TRKGRP
. . S1C1_PRI_2WAY PRA 0 PRAC NCRT ASEQ N (ISDN 661) $ $
. . TABLE LTCALLS
. . ISDN 661 PVT XLAIBN 600 613_PUB_325 L613_NILLA_101 COMKODAK 0 0$
. . TABLE DIGMAN
. . 100 (DTO 5)
. . EXIT TABLE DIGMAN
. EXIT TABLE OFRT
AIN Info Collected TDP: no subscribed trigger.
Checking AIN SDS Trigger Items as SDS is compatible with current call
Checking AIN N11 Trigger Items as N11 is compatible with current call
Skipping AIN LNP Trigger Items as LNP is NOT compatible with current
call
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES
1 S1C1_PRI_2WAY          NCDN PVT L 38651 PRVT 0 BC SPEECH

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 T120
+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

Figure 68 Trunk Origination, Home LRN received but the GAP is not resident

```
traver tr slc0_isupitic 9059630000 tcni 4164638877 b
TABLE TRKGRP
S1C0_ISUPITIC IT 63 ITTD NCRT IC NIL MIDL 613 PUB NSCR 613 000 N Y $
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
LNP Info: Home LRN received.
LNP Info: Bypassing STDPRTCT and HNPACONT translations.
TABLE NPDIGMAP
TUPLE NOT FOUND
LNP WARNING: Misrouted call. Orig Called DN is not resident.
                Call sent to treatment.
TABLE TMTCNTL
ITTRKGRP ( 110)
. SUBTABLE TREAT
. LNPM Y T OFRT 50
. TABLE OFRT
.   50 S D VDN
.     S D *OFLO
.     S D LKOUT
. EXIT TABLE OFRT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

TREATMENT ROUTES.  TREATMENT IS: LNPM
1 VDN
2 *OFLO
3 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```


Figure 69 Trunk Origination, Home LRN Received, GAP not resident, but NPDIGMAP indicated new mapping for Called DN

```

traver tr slc0_isupitic 9059630000 tcni 8194639001 b
TABLE TRKGRP
S1C0_ISUPITIC IT 63 ITTD NCRT IC NIL MIDL 613 PUB NSCR 613 000 N Y $
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
LNP Info: Home LRN received.
LNP Info: Bypassing STDPRTCT and HNPACONT translations.
LNP Info: Original GAP non-resident
LNP Info: Changing GAP digits based on NPDIGMAP results
TABLE NPDIGMAP
819463 416 463
LNP Info: Orig Called DN is resident.
TABLE LNPCODE
TUPLE NOT FOUND
LNP Info: Ported DN Termination in effect.
TABLE HOMELRN
905 963 $ (SITE (HOST)$)$
TABLE TOFCNAME
416 463 (NONNATIVE ) $
TABLE DNINV
416 463 9001 L HOST 00 1 06 00
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
AIN Info Collected TDP: no subscribed trigger.
Checking AIN SDS Trigger Items as SDS is compatible with current call
Checking AIN N11 Trigger Items as N11 is compatible with current call
Skipping AIN LNP Trigger Items as LNP is NOT compatible with current call
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                4164639001          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 T120

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

Figure 70 illustrates the scenario in which the SCP returns the Home LRN in response to an LNP query. Normally, if the number dialed has not been ported, the SCP should return the original dialed number in the response. However, as the example illustrates, if the HLRN is returned, the call is still terminated on the Dialed DN.

Figure 70 Line origination, Home LRN returned from SCP

```

traver l 9059631021 n cdn na 9059630000 ainres r01 lnpar 4164639001 b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. LECNA (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE IBNLINES
HOST 01 0 02 07 0 DT STN RES 9631021 405 905_PUB_405 L905_LATA1_402
905 $
TABLE LINEATTR
405 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 905_PUB_405 L905_LATA1_402 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
905_PUB_405 NSCR 905 PUB TSPS Y RESG905 0 0 $
TABLE RATEAREA
L905_LATA1_402 L905 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
RESG905 AIN AIN CDPCODE
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE NCOS
RESG905 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND
DIGCOL
RESG905 NXLA RX905 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
TABLE IBNXLA: XLANAME RX905
TUPLE NOT FOUND
Default from table XLANAME:
RX905
        (NET N N 0 N NDGT N Y GEN ( LATTR 415 905_EAP1_415
L905_LATA1_402)
        (EA NILC Y 0) $ $)$ 9

```

Figure 70 Line origination, Home LRN returned from SCP (Continued)

```

TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
415 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 905_EAP1_415 L905_LATA1_402
$
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
905_EAP1_415 NSCR 905 EAP1 TSPS Y RESG905 0 0 $
TABLE RATEAREA
L905_LATA1_402 L905 NIL LATA1 $
LNP Info: Home LRN received.
LNP Info: Bypassing STDPRTCT and HNPACONT translations.
LNP Info: Orig Called DN is resident.
TABLE LNPCODE
TUPLE NOT FOUND
LNP Info: Ported DN Termination in effect.
TABLE HOMELRN
905 963 $ (SITE (HOST)$)$
TABLE TOFCNAME
416 463 (NONNATIVE ) $
TABLE DNINV
416 463 9001 L HOST 00 1 06 00
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LATA1A
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                4164639001          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

Figure 71 LNP RTE allows triggering after routing out of STDPRTCT with T selector

```

>traver l 9059631001 4164638621 b
TABLE LINEATTR
402 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 905_PUB_326 L905_LATA1_402 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
905_PUB_326 NSCR 905 PUB TSPS N $
TABLE RATEAREA
L905_LATA1_402 L905 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE STDPRTCT
PUB ( 1) ( 0) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 4164638621 4164638621 T NP 0 OFRT 58 3 11 NONE
. . TABLE OFRT
. . . 58 ISA N N N S1C1_PRI_2WAY PVT 0 PVT 100
. . . TABLE TRKGRP
. . . S1C1_PRI_2WAY PRA 0 PRAC NCRT ASEQ N (ISDN 661) $ $
. . . TABLE LTCALLS
. . . ISDN 661 PVT XLAIBN 600 613_PUB_325 L613_NILLA_101 COMKODAK 0
0 $
. . . TABLE DIGMAN
. . . 100 (DTO 5)
. . . EXIT TABLE DIGMAN
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
AIN Info Collected TDP: no subscribed trigger.
Checking AIN SDS Trigger Items as SDS is compatible with current call
Checking AIN N11 Trigger Items as N11 is compatible with current call
LNP Info: Table LNP RTE enables trigger criteria checking out of
STDPRTCT.
LNP Info: ESCDN criteria will not affect triggering.
Checking AIN LNP Trigger Items as LNP is compatible with current call

```

Figure 71 LNP RTE allows triggering after routing out of STDPRTCT with T selector (Continued)

```

. . TABLE OFCTIID
. . 4 L416463 ON
. . TABLE TRIGITM
. . 4 L416463 LNP (DG 416463) (ESCEA ) (ESCOPE ) (ESCDN ) $ ULK EVENT
R01 SS7 AINPOP
. . (DFLTRT DN 4164637023) $
. . . TABLE C7GTTTYPE
. . . AINPOP ANSI7 6 $
. . . TABLE C7GTT
. . . AINPOP 4164638621 4164638621 PCSSN (SIMTOOL_RTESET SIMTOOL3 0) $
SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

LNP Info: Table LNP RTE enables trigger criteria checking out of STDPRTCT.
LNP Info: ESCDN criteria will not affect triggering.

AIN Info Analyzed TDP: trigger criteria met.
Querying the database.
LNP Info: Displaying pre-query translations result.
LNP Info: It is used if the database indicates the called DN is
non-ported

DIGIT TRANSLATION ROUTES

1 S1C1_PRI_2WAY          N CDN PVT L 38621 PRVT 0 BC SPEECH

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

Figure 72 LNP RTE allows triggering after routing out of CLSVSCRC

```

traver l 9059631021 6136639077 b
TABLE IBNLINES
HOST 01 0 02 07 0 DT STN RES 9631021 405 905_PUB_405 L905_LATA1_402 905
$
TABLE LINEATTR
405 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 905_PUB_405 L905_LATA1_402 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
905_PUB_405 NSCR 905 PUB TSPS Y RESG905 0 0 $
TABLE RATEAREA
L905_LATA1_402 L905 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
RESG905 AIN AIN CDPCODE
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG905 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND
DIGCOL
RESG905 NXLA RX905 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
TABLE IBNXLA: XLANAME RX905
TUPLE NOT FOUND
Default from table XLANAME:
RX905
      (NET N N 0 N NDGT N Y GEN ( LATTR 415 905_EAP1_415 L905_LATA1_402)
      (EA NILC Y 0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
415 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 905_EAP1_415 L905_LATA1_402 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
905_EAP1_415 FR01 905 EAP1 TSPS Y RESG905 0 0 $
TABLE RATEAREA
L905_LATA1_402 L905 NIL LATA1 $

```

Figure 72 LNP RTE allows triggering after routing out of CLSVSCRC (Continued)

```

TABLE STDPRTCT
EAP1 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS:  N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
905 Y 772 1 ( 91) ( 1) ( 0) ( 0) 3 $
. SUBTABLE HNPACODE
. 613663907 613663909 FRTE 730
. SUBTABLE RTEREF
. 730 T OFRT 730
. . TABLE OFRT
. . 730 S D S1C0_ISUPITOG
. . EXIT TABLE OFRT
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNPA results are used.
TABLE LCASCRCN
905 L905 ( 26) OPTL N N
. SUBTABLE LCASCR
. 613 613
TABLE LCASCRCN
613 L905 ( 1) OPTL N N
. SUBTABLE LCASCR
. 663 663
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
905 FR01 NP 2 N NONE ( 1)
. SUBTABLE CLSVSCR
. 6136639 6136639 T OFRT 750
TABLE OFRT
750 S D S1C1_MFITOG
EXIT TABLE OFRT
AIN Info Collected TDP: no subscribed trigger.

```

Figure 72 LNP RTE allows triggering after routing out of CLSVSCRC (Continued)

```
TABLE TRIGGRP
CDPCODE INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
Checking AIN SDS Trigger Items as SDS is compatible with current call
Checking AIN N11 Trigger Items as N11 is compatible with current call
LNP Info: Table LNP RTE enables trigger criteria checking out of CLSVSCRC.
Checking AIN LNP Trigger Items as LNP is compatible with current call
. . TABLE OFCTIID
. . 4 L613663 ON
. . TABLE TRIGITM
. . 4 L613663 LNP (DG 613663) (ESCEA ) (ESCOPE ) (ESCDN ) $ ULK EVENT
R01 SS7 AINPOP
. . $
. . . TABLE C7GTTTYPE
. . . AINPOP ANSI7 6 $
. . . TABLE C7GTT
. . . AINPOP 6136639077 6136639077 PCSSN (SIMTOOL RTESET SIMTOOL3 0) $
SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

LNP Info: Table LNP RTE enables trigger criteria checking out of CLSVSCRC.

AIN Info Analyzed TDP: trigger criteria met.
Querying the database.
LNP Info: Displaying pre-query translations result.
LNP Info: It is used if the database indicates the called DN is
non-ported

DIGIT TRANSLATION ROUTES

1 S1C1_MFITOG          6136639077          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```


Figure 73 NP and DD pre-query calltype examples; NP speci ed

```

traver l 9059631021 n cdn na 6136631088 ainres r01 lnpar 9059638899 np b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
LNP Info: Call Type set to NP for FLRN translations
TABLE RTECHAR
        . LECNA (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE IBNLINES
HOST 01 0 02 07 0 DT STN RES 9631021 405 905_PUB_405 L905_LATA1_402 905 $
TABLE LINEATTR
405 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 905_PUB_405 L905_LATA1_402 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
905_PUB_405 NSCR 905 PUB TSPS Y RESG905 0 0 $
TABLE RATEAREA
L905_LATA1_402 L905 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
RESG905 AIN AIN CDPCODE
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE NCOS
RESG905 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND
DIGCOL
RESG905 NXLA RX905 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
TABLE XLAMAP
        . Tuple not found. Default is use original XLANAME.
TABLE IBNXLA: XLANAME RX905
TUPLE NOT FOUND
Default from table XLANAME:
RX905
        (NET N N 0 N NDGT N Y GEN ( LATTR 415 905_EAP1_415 L905_LATA1_402)
        (EA NILC Y 0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
415 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 905_EAP1_415 L905_LATA1_402 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
905_EAP1_415 FR01 905 EAP1 TSPS Y RESG905 0 0 $
TABLE RATEAREA
L905_LATA1_402 L905 NIL LATA1 $
TABLE PXLAMAP
        . LECNA EAP1 ( XLA DDNA)$
TABLE STDPRTCT
        . Tuple not found. Default to old pretranslator name.

```

Figure 73 NP and DD pre-query calltype examples; NP speci ed (Contin ued)

```
TABLE STDPRTCT
EAP1 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS: N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
905 Y 772 1 ( 91) ( 1) ( 0) ( 0) 3 $
. SUBTABLE HNPACODE
. 613663108 613663109 FRTE 730
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 730 T OFRT 730
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 730 S D S1C0_ISUPITOG
. . EXIT TABLE OFRT
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: HNPA translation completed on Foreign LRN.
LNP Info: HNPA results are used.
TABLE CLSVSCRC
905 FR01 NP 2 N NONE ( 1)
. SUBTABLE CLSVSCR

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 S1C0_ISUPITOG 6136631088 ST
PORTED NUMBER GAP: 9059638899

TREATMENT ROUTES. TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

Figure 74 NP and DD pre-query calltype examples; DD speci ed

```

traver l 9059631021 n cdn na 4164631077 ainres r01 lnpar 6136631001 dd b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
LNP Info: Call Type set to DD for FLRN translations
TABLE RTECHAR
. LECNA (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE IBNLINES
HOST 01 0 02 07 0 DT STN RES 9631021 405 905_PUB_405 L905_LATA1_402 905 $
TABLE LINEATTR
405 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 905_PUB_405 L905_LATA1_402 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
905_PUB_405 NSCR 905 PUB TSPS Y RESG905 0 0 $
TABLE RATEAREA
L905_LATA1_402 L905 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
RESG905 AIN AIN CDPCODE
TABLE OFCVAR
AIN_OFFICE TRIGGRP TIID
TABLE NCOS
RESG905 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG905 NXLA RX905 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
TABLE IBNXLA: XLANAME RX905
TUPLE NOT FOUND
Default from table XLANAME:
RX905
        (NET N N 0 N NDGT N Y GEN ( LATTR 415 905_EAP1_415 L905_LATA1_402)
        (EA NILC Y 0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
415 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 905_EAP1_415 L905_LATA1_402 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
905_EAP1_415 FR01 905 EAP1 TSPS Y RESG905 0 0 $
TABLE RATEAREA
L905_LATA1_402 L905 NIL LATA1 $
TABLE PXLAMAP
. LECNA EAP1 ( XLA DDNA)$
TABLE STDPRTCT
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
EAP1 ( 1) ( 0) 3

```

Figure 74 NP and DD pre-query calltype examples; DD speci ed (Contin ued)

```

. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS: N NP 0 NA
LNP Info: Call Type set to DD for FLRN translations
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
905 Y 772 1 ( 91) ( 1) ( 0) ( 0) 3 $
. SUBTABLE HNPACODE
. 416463107 4164631087 FRTE 747
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 747 T OFRT 747
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 747 S D S1C1 ISUPITOG
. . EXIT TABLE OFRT
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: HNPACONT translation completed on Foreign LRN.
LNP Info: HNPACONT results are used.
TABLE CLSVSCRC
TABLE IBNFEAT
HOST 01 0 02 07 0 LPIC LPIC VAPN N
TABLE LATAXLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
TABLE OCCINFO
VAPN 0566 EAP Y Y Y Y N N N Y Y Y Y LONG 0 FGRPD N N Y N N N N N Y N N N N Y
TABLE EASAC
TUPLE NOT FOUND
OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP DEFINED
TABLE PXLAMAP
. LECNA EAP1 ( XLA DDNA)$
TABLE STDPRTCT
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
EAP1 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10566 10566 EA DD 5 P PEAP VAPN Y OFRT 900 6 20 N
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 900 CND EA INTNL SK 2

```

Figure 74 NP and DD pre-query calltype examples; DD speci ed (Contin ued)

```

. .      N D ISUPOGITT 0 N N
. .      CND ALWAYS SK 1
. .      N D ISUPOGITT 0 D179 N
. .      EXIT TABLE OFRT
TABLE PXLAMAP
. .      Tuple not found. Default to old pretranslator name.
. TABLE STDPRTCT
. PEAL ( 1) ( 0) 2
. .      SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. .      4 9 EA DD 0 T NA ITT N
TABLE HPCPATTN
TUPLE NOT FOUND

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 ISUPOGITT          4164631077          ST
   PORTED NUMBER GAP: 6136631001

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

Figure 75 NP and DD pre-query calltype examples; LCABILL option on

```

traver l 9059631021 n cdn na 4164631077 ainres r01 lnpar 6136631001 dd b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
LNP Info: Call Type set to DD for FLRN translations
TABLE RTECHAR
. LECNA (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE IBNLINES
HOST 01 0 02 07 0 DT STN RES 9631021 405 905_PUB_405 L905_LATA1_402 905 $
TABLE LINEATTR
405 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 905_PUB_405 L905_LATA1_402 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
905_PUB_405 NSCR 905_PUB TSPS Y RESG905 0 0 $
TABLE RATEAREA
L905_LATA1_402 L905 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
RESG905 AIN AIN CDPCODE
TABLE OFCVAR
AIN OFFICE_TRIGGRP TIID
TABLE NCOS
RESG905 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG905 NXLA RX905 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
TABLE IBNXLA: XLANAME RX905
TUPLE NOT FOUND
Default from table XLANAME:
RX905
        (NET N N 0 N NDGT N Y GEN ( LATTR 415 905_EAP1_415 L905_LATA1_402)
        (EA NILC Y 0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
415 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 905_EAP1_415 L905_LATA1_402 (
LCABILL )$
LCABILL ON - BILLING DONE ON BASIS OF PRE QUERY LCA SCREENING
TABLE XLAPLAN
905_EAP1_415 FR01 905 EAP1 TSPS Y RESG905 0 0 $
TABLE RATEAREA
L905_LATA1_402 L905 NIL LATA1 $
TABLE PXLAMAP
. LECNA EAP1 ( XLA DDNA)$

```

Figure 75 NP and DD pre-query calltype examples; LCABILL option on (Continued)

```

TABLE STDPRTCT
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
EAP1 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS:   N NP 0 NA
LNP Info: Call Type set to DD for FLRN translations
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:   NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
905 Y 772 1 ( 91) ( 1) ( 0) ( 0) 3 $
. SUBTABLE HNPACODE
. 416463107 4164631087 FRTE 747
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 747 T OFRT 747
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 747 S D S1C1 ISUPITOG
. . EXIT TABLE OFRT
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: HNPACONT translation completed on Foreign LRN.
LNP Info: HNPACONT results are used.
TABLE CLSVSCRC
TABLE LATA XLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
TABLE OCCINFO
VAPN 0566 EAP Y Y Y Y N N N Y Y Y Y LONG 0 FGRPD N N Y N N N N N Y N N N N Y
TABLE EASAC
TUPLE NOT FOUND
OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP DEFINED
TABLE PXLAMAP
. LECNA EAP1 ( XLA DDNA)$
TABLE PXLAMAP
. LECNA EAP1 ( XLA DDNA)$
TABLE STDPRTCT
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
EAP1 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10566 10566 EA DD 5 P PEA1 VAPN Y OFRT 900 6 20 N
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:   NONE OVRNONE  N

```

Figure 75 NP and DD pre-query calltype examples; LCABILL option on (Continued)

```

. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . . 900 CND EA INTNL SK 2
. . . . N D ISUPOGITT 0 N N
. . . . CND ALWAYS SK 1
. . . . N D ISUPOGITT 0 D179 N
. . . EXIT TABLE OFRT
TABLE PXLAMAP
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. . Tuple not found. Default to old pretranslator name.
. TABLE STDPRTCT
. PEA1 ( 1 ) ( 0 ) 2
. . SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. . 4 9 EA DD 0 T NA ITT N
TABLE HPCPATTN
TUPLE NOT FOUND

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 S1C1_ISUPITOG          4164631077          ST
   PORTED NUMBER GAP: 6136631001

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

4.2.5 TRIGITM TRAVER examples

The following TRAVER examples demonstrate LNP triggering and translations using the LNP trigger item (TRIGITM) data model:

- Call to a ported DN, call triggers (Figure 53 on page 162)
- Call to a resident ported DN, LNP trigger is escaped (Figure 54 on page 164)

4.2.6 Responses of TRAVER command

This section contains a brief description of the possible error outcomes of TRAVER.

- Response 1

ERROR: OPTION TCNI ONLY VALID FOR ISUP ORIGINATORS

Explanation: The TRAVER originator must be an ISUP trunk.

System action: The TRAVER command is rejected.

User action: None.

- Response 2

ERROR: OPTION TCNI INCOMPATIBLE WITH AINRES LNPAR

Explanation: (the error message is self-explanatory)

System action: The TRAVER command is rejected.

User action: None.

- Response 3

ERROR: TCNI DIGITS MUST BE N OR 10 DIGITS

Explanation: (the error message is self-explanatory)

System action: The TRAVER command is rejected.

User action: None.

- Response 4

ERROR: TCNI DIGITS MUST BE BETWEEN 0 TO 9

Explanation: (the error message is self-explanatory)

System action: The TRAVER command is rejected.

User action: None.

- Response 5

ERROR: RECEIVED LRN MUST BE 10-DIGIT LONG

Explanation: (the error message is self-explanatory)

System action: The TRAVER command is rejected.

User action: None.

- Response 8

ERROR: AINRES LNPAR DIGITS MUST BE N OR 10 DIGITS

Explanation: (the error message is self-explanatory)

System action: The TRAVER command is rejected.

User action: None.

- Response 9

ERROR: AINRES LNPAR DIGITS MUST BE 0 TO 9

Explanation: (the error message is self-explanatory)

System action: The TRAVER command is rejected.

User action: None.

- Response 10

WARNING: COLLISION BETWEEN TNS AND AINRES LNPAR AINRES LNPAR IS IGNORED'

Explanation: (the error message is self-explanatory)

System action: The TRAVER command is executed as if AINRES LNPAR were not specified.

User action: None.

- Response 11

ERROR: CDN DIGITS MUST BE PRESENT AND HAVE 10 DIGITS

Explanation: (the error message is self-explanatory)

System action: The TRAVER command is rejected.

User action: None.

- Response 12

CALL IS BLOCKED - NO LRN-BASED AIN 0.0 QUERY PERMITTED

Explanation: There was an attempt to launch AIN 0.0 query basing on LRN.

System action: TRAVER is terminated with the fore-mentioned error message

User action: User is required to redo the TRAVER again making sure that LRN is not provisioned as an AIN 0.0 number in the intermediate switch.

- Response 13

USE PRE-QUERY TRANSLATIONS RESULTS FOR NON-PORTED CALLED NUMBER

Explanation: If an LNP query is made, and the terminator is not ported, the pre-query route is used to route the call. In that case, response translations are not invoked.

System action: TRAVER exits normally.

User action: Use pre-query translations result.

4.2.7 TRAVER error scenarios

LNP cannot be hit again on a subsequent switch, as the TRAVER in Figure 76 indicates.

Figure 76 TRAVER example—error response 1

```
traver tr isupitic n cdn na 6136631088 ainres r01 lnpar 4164631077 tcni
9059731081 b
**** ERROR: OPTION TCNI INCOMPATIBLE WITH AINRES LNPAR
```

LNP info cannot be sent over an MF trunk, as the TRAVERS in Figure 77 and Figure 78 indicate.

Figure 77 TRAVER example—error response 2

```
traver tr t2mf 4164631099 tcni 9059737061 b
**** ERROR: OPTION TCNI ONLY VALID FOR ISUP ORIGINATORS
```

Figure 78 TRAVER example—error response 3

```
traver tr t2mf 4164631099 rai b
**** ERROR: OPTION RAI ONLY VALID FOR ISUP ORIGINATORS
```

TRAVER enforces 10 digits for the GAP, as the TRAVER in Figure 80 indicates.

Figure 79 TRAVER example—error response 4

```
traver tr isupitog 6136681088 tcni 9731081 b
**** ERROR: TCNI DIGITS MUST BE N OR 10 DIGITS
```

Figure 80 TRAVER example—error response 5

```
traver l 9059631001 n cdn na 6136630000 tns na cic 488 ainres r01 lnpar
9059638621 b
**** WARNING: COLLISION BETWEEN TNS AND AINRES LNPAR
**** AINRES LNPAR IS IGNORED
```

4.2.8 TRAVER 64k Data calls

The following figures detail the results of running TRAVER on 64k datacall using information elements and 64k data calls without information elements (normal dialing).

Figure 81 TRAVER example—64k data call using information elements

```
>traver l 6771074 n cdn na 4164631301 bc 64kdata b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. LECNA (CDN NA $) ( BC 3_1KHZ (CDN NA)$) ( BC 64KDATA (CDN NA)$)$
TABLE KSETLINE
ISDN 33 1 DN Y 6771074 COMKODAK 0 0 613 (MSB) (SFC) $ BRI UNDEF N $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE KSETFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
COMKODAK AIN AIN CDPCODE
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
COMKODAK 0 0 0 KDK0 ( OHQ 0 TONE_OHQ) ( CBQ 0 3 N 2)$
. .
```

Figure 81 TRAVER example—64k data call using information elements (Continued)

```

TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND
DIGCOL
COMKODAK PXDK CXDK CUSTFEAT 0 KDK
TABLE DIGCOL
KDK 4 COL L 2
TABLE XLAMAP
. LECNA PXDK ( XLA AINLEC)$
TABLE IBNXLA: XLANAME AINLEC
TUPLE NOT FOUND
DEFAULT FROM TABLE XLANAME:
AINLEC
      (NET N N 0 N NDGT N Y GEN ( LATTR 200 613_P621_200 L613_LATA1_0)
      (EA NILC Y 0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
200 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_200 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_200 FR01 613 P621 TSPS Y RESG200 0 0 $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE PXLAMAP
. LECNA P621 ( XLA PBXNOCAR) ( PREFIX )$
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 14164631301
. .

```

Figure 81 TRAVER example—64k data call using information elements (Continued)

```

> TABLE STDPRTCT
PBXNOCAR ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 14 179776 N DD 1 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 932 2 ( 436) ( 1) ( 84) ( 0) 2 $
. SUBTABLE HNPACODE
. 4164631301 4164631398 FRTE 732
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 732 T OFRT 732
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 732 S D C0C1_PRI_2WAY
. . EXIT TABLE OFRT
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 44) OPTL N N
. SUBTABLE LCASCR
. 416 416
TABLE LCASCRCN
KEY NOT FOUND
LCASCRCN TUPLE MISSING
TABLE CLSVSCRC
TABLE LATAXLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
AIN Info Collected TDP: no subscribed trigger.
TABLE TRIGGRP
CDPCODE INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
. CDPCODE ( DG CDPTRAF)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
Checking AIN SDS Trigger Items as SDS is compatible with current call

```

Figure 81 TRAVER example—64k data call using information elements (Continued)

```

Checking AIN N11 Trigger Items as N11 is compatible with current call
Checking AIN LNP Trigger Items as LNP is compatible with current call
. . TABLE OFCTIID
. . 4 L416463 ON
. . TABLE TRIGITM
. . 4 L416463 LNP (DG 416463) (ESCEA ) (ESCOPE ) (ESCDN ) $ ULK EVENT
R01 SS7 AINPOP
. . . TABLE C7GTTYPE
. . . AINPOP ANSI7 6 $
. . . TABLE C7GTT
. . . AINPOP 4164631301 4164631301 PCSSN (SIMTOOL RTESET SIMTOOL3 0)
$ SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database.
LNP Info: Displaying pre-query translations result.
LNP Info: It is used if the database indicates the called DN is
non-ported

DIGIT TRANSLATION ROUTES

1 C0C1_PRI_2WAY          N CDN  E164  NA  4164631301 NIL_NSF  BC
64KDATA

```

Figure 82 TRAVER example—64k data call without information elements (normal call)

```

>traver l 6771074 94164631301 bc 64kdata b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.

TABLE RTECHAR
. 64KDATA ( BC 64KDATA $)$
TABLE KSETLINE
ISDN 33 1 DN Y 6771074 COMKODAK 0 0 613 (MSB) (SFC) $ BRI UNDEF N $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE KSETFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
COMKODAK AIN AIN CDPCODE
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
COMKODAK 0 0 0 KDK0 ( OHQ 0 TONE_OHQ) ( CBQ 0 3 N 2)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND
DIGCOL
COMKODAK PXDK CXDK CUSTFEAT 0 KDK
TABLE DIGCOL
KDK 9 RPT
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
TABLE IBNXLA: XLANAME PXDK
TUPLE NOT FOUND
Default is to go to next XLA name.
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
TABLE IBNXLA: XLANAME CXDK
CXDK 9 NET N Y 1 Y POTS Y N GEN ( LATTR 80 613_P621_80 L613_LATA1_0) (
EA NILC Y 0)$ $
TABLE DIGCOL
POTS specified: POTS digit collection
TABLE LINEATTR
80 IBN NONE NT 0 0 NILSFC 0 NIL NIL 00 613_P621_80 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_80 ATGO 613 P621 TSPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.

```


Figure 82 TRAVER example—64k data call without information elements (Continued)

```

94164631301 bc 64kdata b
Warning: Routing characteristics
TABLE STDPRTCT
P621 ( 1) ( 0) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 416 420 N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 932 2 ( 436) ( 1) ( 84) ( 0) 2 $
. SUBTABLE HNPACODE
. 4164631301 4164631398 FRTE 732
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 732 T OFRT 732
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 732 S D COC1_PRI_2WAY
. . EXIT TABLE OFRT
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNPACONT results are used.
TABLE LCASCRCN
613 L613 ( 44) OPTL N N
. SUBTABLE LCASCR
. 416 416 TABLE LCASCRCN
KEY NOT FOUND
LCASCRCN TUPLE MISSING
TABLE CLSVSCRC
AIN Info Collected TDP: no subscribed trigger.
TABLE TRIGGRP
CDPCODE INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
. CDPCODE ( DG CDPTRAF)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
Checking AIN SDS Trigger Items as SDS is compatible with current call
Checking AIN N11 Trigger Items as N11 is compatible with current call
Checking AIN LNP Trigger Items as LNP is compatible with current call

```

**Figure 82 TRAVER example—64k data call without information elements (normal call)
(Continued)**

```
. . TABLE OFCTIID
. . TABLE TRIGITM
. . 4 L416463 LNP (DG 416463) (ESCEA ) (ESCOPE ) (ESCDN ) $ ULK EVENT
R01 SS7 AINPOP
. . . TABLE C7GTTTYPE
. . . AINPOP ANSI7 6 $
. . . TABLE C7GTT
. . . AINPOP 4164631301 4164631301 PCSSN (SIMTOOL RTESET SIMTOOL3 0)
$ SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database.
LNP Info: Displaying pre-query translations result.
LNP Info: It is used if the database indicates the called DN is
non-ported

DIGIT TRANSLATION ROUTES

1 C0C1_PRI_2WAY          N CDN  E164  NA  4164631301 NIL_NSF  BC
64KDATA

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

5. TSTQuery tool

**CAUTION****Possible loss of service**

Avoid using the TSTQuery tool during peak traffic periods because of the low central processing unit (CPU) priority of command interpreter (CI) commands, and the consequent impact on the T1 timer. Exercising this tool does not affect switch traffic.

TSTQuery is a menu-driven utility that enables operating company personnel to send AIN test queries to an SCP and display the incoming responses from the SCP.

TSTQuery provides the following capabilities:

- populate the parameters of an AIN query message
- read query message information from a file
- save query message information to a file
- send the query message
- allow responses to conversation messages
- generate a log of the outgoing and incoming messages
- overwrite the T1 timer for a given test query
- support of CCS7 and Ethernet transport protocol
- on-line help

Note: No billing records are generated from TSTQuery.

TSTQuery is a multi-user tool. The number of users is limited only by the number of MAPCI sessions that can be active at the same time. TSTQuery can have only one test transaction active at a time. After a test query is sent, the

transaction must be closed by a response or some other sequence before another initial test query can be sent.

5.1 Limitations

The TSTQuery tool has the following limitations and restrictions:

- Messages that originate from TSTQuery increment messaging OMs and the SOC counters that count event usage.
- The introduction of underscores into the message names means that TSTQuery files saved prior to NA009 cannot be loaded into versions of TSTQuery available as part of NA009 or later.
- Update_Data message is no longer valid as of NA009. Any TSTQuery files containing an Update_Data message cannot be loaded into versions of TSTQuery available as part of NA009 or later.
- The next event list (NEL) transmitted in the EDP-Request and EDP-Notification message parameters of the Request_Report_BCM_Event (RRBCME) message is not sanity checked or enforced. When any RRBCME message is received, all of the event request and notification messages are available for the user to send. It is up to the user to comply with the NEL sent in the RRBCME message.
- The number of bytes that can populate the IPReturnBlock parameter is limited by the DMS-100 switch command interface that restricts the number of characters that can be entered on a line. Since a byte can take up one, two or three characters, the actual number of bytes that can be entered depends on the size of the individual bytes entered.
- The SCP can attempt to cancel a non user interruptible announcement when zero digits are collected by sending a Cancel_Resource_Event operation in a Conversation Package (GR-1298-CORE).

5.2 Supported messages and parameters

TSTQuery supports both AIN Essentials and AIN Service Enablers messages and parameters, depending on the selected values (either R01 and R02). Table 17 on page 211, Table 18 on page 214 and Table 19 on page 217 list the messages and parameters supported by TSTQuery for AIN Essentials and AIN Service Enablers (R01 and R02 application values). Note that

Note: TSTQuery uses the AIN Service Enablers' (R02) implementation of parameters for R01 parameters that have been updated in GR1299.

Table 17 AIN Service Enablers messages reported by TSTQuery (Sheet 1 of 4)

Type	Message
SSP call-related messages	Call_Info_From_Resource
	Close
	CTR_Clear
	Failure_Outcome
	Info_Analyzed
	Info_Collected
	Network_Busy
	O_Abandon
	O_Answer
	O_Called_Party_Busy
	O_Disconnect
	O_Mid_Call
	O_No_Answer
	O_Suspected
	O_Term_Seized
	Origination_Attempt
	Resource_Clear
	Success_Outcome
	T_Answer
	T_Busy
	T_Disconnect
	T_Mid_Call
	T_No_Answer
	Termination_Attempt
	Term_Resource_Available
	Timeout

Table 17 AIN Service Enablers messages reported by TSTQuery (Continued)

Type	Message
SCP or adjunct call-related messages	Acknowledge
	Analyze_Route
	Authorize_Termination
	Call_Info_To_Resource
	Cancel_Resource_Event
	Close
	Collect_Information
	Connect_To_Resource
	Continue
	Create_Call
	Disconnect
	Disconnect_Leg
	Forward_Call
	Merge_Call
	Move_Leg
	Offer_Call
	Originate_Call
	Reconnect
	Send_To_Resource
	Split_Leg

Table 17 AIN Service Enablers messages reported by TSTQuery (Continued)

Type	Message
non-call-related messages	ACG
	ACG_Global_Ctrl_Restore
	ACG_Global_Ctrl_Restore_Success
	ACG_Overflow
	Control_Request
	Echo_Reply
	Echo_Request
	Furnish_AMA_Information
	Monitor_For_Change
	Monitor_Success
	NCA_Data
	NCA_Request
	NCA_Response
	Query_Request
	Query_Response
	Request_Report_BCM_Event
	Send_Notification
	Status_Reported
	Termination_Notification
	Update
	Update_Data
	Update_Request
	Update_Success
abnormal	Application_Error
	Report_Error
	Failure_Report
Note: Messages in shaded areas are not supported for this release.	

The following is the key to Table 18 on page 214 and Table 19 on page 217:

- B — both AIN Essentials and AIN Service Enablers support the parameter
- SE — only AIN Service Enablers supports the parameter
- a dash (-) — GR-1299 does not define the parameter
- X — GR-1299 defines the parameter, but TSTQuery does not support the parameter

Table 18 Outgoing messages and parameters supported by TSTQuery

Parameters	SSP call-related messages															non-call-related messages	abnormal
	Call_Info_From_Resource	Close	Info_Analyzed (TDP-R)	Info_Collected (TDP-R)	Network_Busy (TDP-R and EDP-R)	O_Answer (EDP-R)	O_Called_Party_Busy (TDP-R and EDP-R)	O_No_Answer (TDP-R and EDP-R)	Origination_Attempt (TDP-R, EDP-R and EDP-N)	Resource_Clear	T_Answer (EDP-N)	T_Busy (TDP-R and EDP-R)	Termination_Attempt (TDP_R)	T_No_Answer (TDP-R and EDP-R)	Termination_Notification	Error	
AccessCode	-	-	B	B	-	-	-	-	-	-	-	-	-	-	-	-	
ACGEncountered	-	-	B	B	B	-	SE	SE	B	-	-	SE	B	SE	-	-	
AMAMeasurement	-	-	-	-	-	-	-	-	-	SE	-	-	-	-	-	-	
AMASequence Number	-	-	X	X	X	-	X	X	X	-	-	X	X	X	-	-	
Amp1	X	SE	B	B	B	X	SE	SE	B	B	X	X	B	X	SE	-	
Amp2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	
ApplicationError String	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B	
BearerCapability	-	SE	B	B	B	SE	SE	SE	B	-	SE	SE	B	SE	-	-	
BusyCause	-	-	-	-	-	-	SE	-	-	-	-	SE	-	-	B	-	
BusyType	-	-	-	-	-	-	-	-	-	-	-	SE	-	-	-	-	
CalledPartyID	-	-	B	-	B	-	SE	SE	-	-	-	SE	B	SE	-	-	
CalledPartyStation Type	-	-	-	-	-	-	-	-	-	-	-	X	B	X	-	-	
CallingPartyBGID	-	-	B	-	-	-	-	-	-	-	-	-	-	-	-	-	
CallingPartyID	-	-	B	B	B	-	SE	SE	B	-	-	SE	B	SE	-	-	

Table 18 Outgoing messages and parameters supported by TSTQuery (Continued)

Parameters	SSP call-related messages															non-call-related messages	abnormal
	Call_Info_From_Resource	Close	Info_Analyzed (TDP-R)	Info_Collected (TDP-R)	Network_Busy (TDP-R and EDP-R)	O_Answer (EDP-R)	O_Called_Party_Busy (TDP-R and EDP-R)	O_No_Answer (TDP-R and EDP-R)	Orrigation_Attempt (TDP-R, EDP-R and EDP-N)	Resource_Clear	T_Answer (EDP-N)	T_Busy (TDP-R and EDP-R)	Termination_Attempt (TDP_R)	T_No_Answer (TDP-R and EDP-R)	Termination_Notification		
Carrier	-	-	B	B	B	-	SE	SE	B	B	-	-	-	-	-	-	-
ChargeNumber	-	-	B	B	B	-	SE	SE	B	-	-	SE	B	SE	-	-	-
ChargeParty StationType	-	-	B	B	B	-	SE	SE	B	-	-	SE	B	SE	-	-	-
ClearCause	-	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-	-
ClearCauseData	-	-	-	-	-	-	-	-	-	SE	-	-	-	-	-	-	-
CloseCause	-	SE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CollectedAddress Info	-	-	B	B	-	-	-	-	-	B	-	-	-	-	-	-	-
CollectedDigits	-	-	B	B	-	-	-	-	-	B	-	-	-	-	-	-	-
ConnectTime	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B	-
CTRConnection	-	-	X	-	-	-	X	X	-	-	-	X	X	-	-	-	-
EchoData	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B	-
Extension Parameter	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
FailureCause	-	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-	-
GenericAddress List	-	-	SE	SE	-	-	-	-	-	-	-	-	-	-	-	-	-
GenericName	-	-	-	-	-	-	-	-	-	-	-	SE	B	SE	-	-	-
IPReturnBlock	SE	-	-	-	-	-	-	-	-	SE	-	-	-	-	-	-	-
Lata	-	-	B	B	B	-	SE	SE	B	-	-	SE	B	SE	-	-	-
NetworkSpecific Facilities	-	-	SE	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Notification Indicator	-	-	-	-	SE	SE	SE	SE	X	-	SE	SE	-	SE	-	-	-

Table 18 Outgoing messages and parameters supported by TSTQuery (Continued)

Parameters	SSP call-related messages														non-call-related messages	abnormal
	Call_Info_From_Resource	Close	Info_Analyzed (TDP-R)	Info_Collected (TDP-R)	Network_Busy (TDP-R and EDP-R)	O_Answer (EDP-R)	O_Called_Party_Busy (TDP-R and EDP-R)	O_No_Answer (TDP-R and EDP-R)	Orrigation_Attempt (TDP-R, EDP-R and EDP-N)	Resource_Clear	T_Answer (EDP-N)	T_Busy (TDP-R and EDP-R)	Termination_Attempt (TDP_R)	T_No_Answer (TDP-R and EDP-R)		
OriginalCalledPartyID	-	-	B	B	B	-	SE	SE	-	-	-	SE	B	SE	-	-
Pre x (see note)	-	-	SE	SE	SE	-	SE	SE	-	-	-	-	-	-	-	-
RedirectingPartyID	-	-	B	B	B	-	SE	SE	-	-	-	SE	B	SE	-	-
Redirection Information	-	-	B	B	B	-	SE	SE	-	-	-	SE	B	SE	-	-
RTPService Indicator	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-
Sap	-	-	X	X	X	-	X	X	X	-	-	X	X	X	-	-
STRConnection	-	-	X	-	-	-	X	X	-	-	-	X	X	X	-	-
TCM	-	-	B	B	B	-	-	-	-	-	-	-	B	-	-	-
Termination Indicator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B	-
TriggerCriteriaType	-	-	B	B	B	-	SE	SE	B	-	-	SE	B	SE	-	-
UserID	-	SE	B	B	B	SE	SE	SE	B	-	SE	SE	B	SE	-	-
VerticalService Code	-	-	B	B	-	-	-	-	-	-	-	-	-	-	-	-
Note: Parameter Prefix is not supported for NELs at the Network_Busy TDP-R/EDP-R.																

Table 19 Incoming messages and parameters supported by TSTQuery

Parameters	SCP or adjunct call-related messages											non-call-related messages		abnormal	
	Analyze_Route	Authorize_Termination	Call_Info_To_Resource	Cancel_Resource_Event	Close	Collect_Information	Continue	Disconnect	Forward_Call	Offer_Call	Send_To_Resource	ACG	Request_Report_BCM_Event		Send_Notification
AlternateBillingIndicator	B	-	-	-	-	SE	-	-	B	-	-	-	-	-	-
AlternateCarrier	B	-	-	-	-	-	-	-	B	-	-	-	-	-	-
AlternateDialingPlanInd	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
AlternateTrunkGroup	B	-	-	-	-	-	-	-	B	-	-	-	-	-	-
AMAAAlternateBilling Number	B	B	-	-	-	SE	B	B	B	SE	B	-	-	-	-
AMABusinessCustomerID	B	B	-	-	-	-	B	B	B	SE	B	-	-	-	-
AMADigitsDialedWC	B	B	-	-	-	SE	B	B	B	SE	B	-	-	-	-
AMALineNumber	B	B	-	-	-	SE	B	B	B	SE	B	-	-	-	-
AMAMeasure	-	-	-	-	-	-	-	-	-	-	SE	-	-	-	-
AMASequenceNumber	X	X	-	-	-	X	X	X	X	X	X	-	-	-	-
AMAServiceProviderID	X	X	-	-	-	X	X	X	X	X	X	-	-	-	-
AMASlpID	B	B	-	-	-	SE	B	B	B	SE	B	-	-	-	-
Amp1	B	B	B	SE	B	X	B	B	B	SE	B	-	-	-	-
Amp2	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
AnswerIndicator	-	-	-	-	-	-	-	-	-	-	B	-	-	-	-
ApplicationErrorString	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B
BearerCapability	-	-	-	-	B	-	-	-	-	-	-	-	-	-	-
CalledPartyID	B	-	-	-	-	SE	-	-	B	-	-	-	-	-	-
CallingPartyBGID	SE	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CallingPartyID	B	B	-	-	-	-	-	-	B	SE	-	-	-	-	-
Carrier	B	-	-	-	-	-	-	-	B	-	-	-	-	-	-
CarrierUsage	SE	-	-	-	-	-	-	-	SE	-	-	-	-	-	-
ChargeNumber	B	-	-	-	-	-	-	-	B	-	-	-	-	-	-

Table 19 Incoming messages and parameters supported by TSTQuery (Continued)

Parameters	SCP or adjunct call-related messages											non-call-related messages		abnormal	
	Analyze_Route	Authorize_Termination	Call_Info_To_Resource	Cancel_Resource_Event	Close	Collect_Information	Continue	Disconnect	Forward_Call	Offer_Call	Send_To_Resource	ACG	Request_Report_BCM_Event		Send_Notification
ChargePartyStationType	B	-	-	-	-	-	-	-	B	-	-	-	-	-	-
CloseCause	-	-	-	-	B	-	-	-	-	-	-	-	-	-	-
CollectedDigits	-	-	-	-	-	SE	-	-	-	-	-	-	-	-	-
ControlCauseIndicator	-	-	-	-	-	-	-	-	-	-	-	B	-	-	-
ControlEncountered	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ControllingLegTreatment	-	B	-	-	-	-	-	-	-	SE	-	-	-	-	-
DestinationAddress	-	-	-	-	-	-	-	-	-	-	SE	-	-	-	-
DisconnectFlag	-	-	-	-	-	-	-	-	-	-	B	-	-	-	-
DisplayText	-	B	-	-	-	-	-	-	-	SE	-	-	-	-	-
DPCConverter	-	-	-	-	-	X	-	-	-	-	X	-	-	-	-
EchoData	-	-	-	-	-	-	-	-	-	-	-	-	-	B	-
EDPNotification	-	-	-	-	-	-	-	-	-	-	-	-	SE	-	-
EDPRequest	-	-	-	-	-	-	-	-	-	-	-	-	SE	-	-
ExtensionParameter	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ExtendedRinging	X	X	X	X	X	X	X	X	X	X	B	X	X	X	X
ForwardCallIndicator	SE	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GapDuration	-	-	-	-	-	-	-	-	-	-	-	B	-	-	-
GapInterval	-	-	-	-	-	-	-	-	-	-	-	B	-	-	-
GenericAddressList	SE	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GlobalTitleAddress	-	-	-	-	-	-	-	-	-	-	-	B	-	-	-
NetworkSpecificFacilities	SE	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ONoAnswerTimer	-	-	-	-	-	-	-	-	-	-	-	-	SE	-	-
OutpulseNumber	B	-	-	-	-	-	-	-	B	-	-	-	-	-	-

Table 19 Incoming messages and parameters supported by TSTQuery (Continued)

Parameters	SCP or adjunct call-related messages												non-call-related messages		abnormal
	Analyze_Route	Authorize_Termination	Call_Info_To_Resource	Cancel_Resource_Event	Close	Collect_Information	Continue	Disconnect	Forward_Call	Offer_Call	Send_To_Resource	ACG	Request_Report_BCM_Event	Send_Notification	
Over o wBillingIndicator	B	-	-	-	-	SE	-	-	B	-	-	-	-	-	-
PassiveLegTreatment	B	-	-	-	-	-	-	-	B	-	-	-	-	-	-
Pre x	B	-	-	-	-	-	-	-	SE	-	-	-	-	-	-
PrimaryBillingIndicator	B	B	-	-	-	SE	B	B	B	SE	B	-	-	-	-
PrimaryTrunkGroup	B	-	-	-	-	-	-	-	B	-	-	-	-	-	-
RedirectingPartyID	B	-	-	-	-	-	-	-	SE	-	-	-	-	-	-
RedirectionInformation	SE	-	-	-	-	-	-	-	SE	-	-	-	-	-	-
ResourceType	-	-	SE	-	-	-	-	-	-	-	B	-	-	-	-
RTPReroutingNumber	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-
SecondAlternateBilling Indicator	B	-	-	-	-	SE	-	-	B	-	-	-	-	-	-
SecondAlternateCarrier	B	-	-	-	-	-	-	-	B	-	-	-	-	-	-
SecondAlternateTrunk Group	B	-	-	-	-	-	-	-	B	-	-	-	-	-	-
ServiceContext	X	X	X	X	-	X	X	X	X	X	X	-	-	-	-
ServiceProviderID	X	X	X	X	-	X	X	X	X	X	X	-	-	-	-
StrParameterBlock	-	-	SE	-	-	-	-	-	-	-	B	-	-	-	-
TCM	B	B	-	-	-	-	-	-	B	-	-	-	-	-	-
TNoAnswerTimer	-	-	-	-	-	-	-	-	-	-	-	-	SE	-	-
TranslationType	-	-	-	-	-	-	-	-	-	-	-	B	-	-	-
TriggerCriteriaFlag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
UserID	-	-	-	-	B	-	-	-	-	-	-	-	-	-	-

Note: Parameter Prefix is not supported for next event list (NEL) EDPs.

5.3 Using TSTQuery

Before a test query can be sent, various pieces of information must be specified:

- application—R01 (maps to B in the tables) or R02 (= SE = B)
- transport—value is SS7 (for CCS7) or TCPIP (for Ethernet)
- T1 Timer Value—range is 1–99 seconds; default is 3 seconds
- message—must be one of the AIN SSP query message types
- message parameters—the message parameters supplied depend on the query message type

This information can be specified by the user by loading a file using the READ_ menu option or by manually entering the information using the CI commands provided by the TSTQuery. All the message settings are displayed on-screen except for the message parameters that can be viewed using the See_Parm menu option. To launch a query, the application, transport and query message type must be specified. When AIN software is not present in the office, no AIN information is displayed.

To run the TSTQuery utility, enter the TESTTOOL menu in the MAPCI utility and select the TSTQUERY option from the menu. The TSTQuery menu is displayed in Figure 83 on page 221.

Figure 83 TSTQuery main menu

```

Application: Outgoing Message:
Transport:Tl_Timer(sec) :
Session ID:

TSTQUERY
0 Quit
2
3 Read_
4 Save_
5
6 SetAppl_
7 SeTrnsp_
8 SeTl_
9 SetMsg_
10
11 ClrParm_
12 ListParm
13 SeeParm_
14
15 Send
16
17
18 Help_
CMAP5
Time 17:01 >

```

Alternatively, access TSTQuery from the CI level of the MAP terminal by typing

>MAPCI;TESTTOOL;TSTQUERY

then press the enter key.

A query is sent using the SEND menu option. When an automatic code gapping control exists for the global title address included in the query, the encountered parameter ACG is automatically added to the query (ACG does not gap test queries).

When the SEND option is used, the user can save the message information in a file. While TSTQuery waits for a response, no further commands can be executed.

After a query is sent, one of the following events can occur:

- A response message is received before the timer expires—the message is displayed on the screen and, when previously specified, dumps to a file.
- A conversation message is received before the timer expires—the conversation message is displayed. The user can generate a message to respond to the conversation message received. When the user does not

respond with the correct information or does not respond within a specified period of time, an error message is displayed.

- Response time-out—the message is not received within the time specified by the T1 timer. An error message is displayed.

Help can be obtained by entering HELP at the command prompt.

5.3.1 TSTQuery menu commands

When a TSTQuery session is initiated, a menu appears on the MAP terminal display. Each menu option is described in the following paragraphs.

It is possible to use abbreviated parameter names with commands ClrParm, ListParm, and SeeParm. The abbreviated parameter names display on the screen when commands SetMsg or ListParm are invoked.

5.3.1.1 QUIT command

Command QUIT terminates the current TSTQuery session. Information is lost unless the Save command is used to store the information in a file. When the Quit command is invoked in the middle of a transaction, the transaction and all parameter values are lost.

5.3.1.2 READ command

Command READ reads the file from a previously saved query. It prompts for the name of the file that contains the query information. Command READ reuses the existing READ CI command, so rules for using the CI READ command apply to the TSTQuery READ command. For more information on the syntax of an input file, see Section 5.3.2 “Input from a file” on page 223.

5.3.1.3 SAVE command

Command SAVE permits the saving of the contents of a query to a file. The user is prompted for the device name and file name. File access occurs using the READ command for future queries. SAVE overwrites existing files with the same name.

5.3.1.4 SetAppl command

Command SetAppl allows the user to select the AIN application to be tested, such as R01 or R02. When a value for this command is not specified, the screen displays all possible values.

For AIN, the menu option SetAppl accepts R02 as a valid application message set. This value displays in the application field of the MAP CI display.

5.3.1.5 SeTrnsp command

Command SeTrnsp permits the user to select the transport medium. The DMS-100 switch supports signaling system 7 (SS7) for AIN. The user specifies the GTTname and GTTsource.

5.3.1.6 SeT1 command

Command SeT1 permits the user to overwrite the value of the T1 timer for a given test query. The T1 timer times the response. When a response is not received from the SCP within the time-out period, a time-out error occurs and the TSTQuery tool informs AIN generic message handler of this event by sending a T1 error message. When a T1 timer value is not specified, command SeT1 uses a default value of 3 seconds.

5.3.1.7 SetMsg command

Command SetMsg permits the user to specify an AIN message for the current query. When entered with a valid AIN message, this command displays the allowed parameters for the message. Each parameter has a command that permits the user to set its value. When a value is not specified following command SetMsg, acceptable values for the message display on the screen.

5.3.1.8 ClrParm command

Command ClrParm permits the user to clear the value of a parameter. When Clrparm ALL is entered, the system clears the values of all specified parameters. Clearing the value of a parameter indicates that the parameter is not sent.

5.3.1.9 ListParm command

Command ListParm lists all the parameters that are valid for the message specified for the current query .

5.3.1.10 SeeParm command

Command SeeParm permits the user to see the current values of parameters, either one parameter at a time or for all the specified parameters. It permits the user to view the specified application, transport, or message. The valid options for this command are ALL, application, transport, message, and the name of a parameter.

5.3.1.11 Send command

Command Send permits the user to send an AIN message to the SCP, depending on the application chosen by SetApp1. The response can be saved by specifying a valid file and device name.

5.3.2 Input from a file

All information required to send a query from a file can be input. A user can load this file using the READ command from the TSTQUERY menu. The following syntax rules apply to files that are used for TSTQuery commands:

- the file contains only TSTQuery commands
- each file line contains only one command

- a plus sign (+) at the end of a line indicates that the command continues on the next line
- the order of commands must be SetAppl and SetMsg

An example of a CI TSTQuery file:

```
>SetAppl R01
>SetT1 2
>SetMsg InfoAnalyzed
>ChargeNumber 5 5 2 2 1234
>BearerCapability SPEECH
>SeTrnsp SS7 AINGTT Charge
```

5.3.3 Interactions with ACG

When ACG controls are active, the system enters parameter ACGEncountered from the ACG database. A user cannot enter parameter ACGEncountered manually.

5.3.4 Response delay

When no error occurs during the transaction and the SCP sends a response within the period specified by the T1 timer, then the MAP display displays a response message. When the SCP response is directed to a named file at the time the query is sent, the system saves the SCP response in a file while it is being displayed.

5.3.5 Error message

The TSTQuery tool displays an error message on the screen when any of the following events occur:

- The system does not receive an answer from the SCP within the period specified by the T1 timer.
- The system receives an erroneous query.
- The SCP sends a corrupted response.
- There is no reply to a conversation request message from the SCP within the time-out period governed by the AIN generic message handler.

5.4 TSTQuery processing of messages

The SEND command causes TSTQuery to send the composed message. When a response is expected, TSTQuery waits for the components of the SCP's response. This section explains how TSTQuery processes those components.

The most common query and response scenario is as follows:

1. The user composes the query message and invokes the SEND command.
2. TSTQuery sends the message through the transport previously specified with setTransp.
3. TSTQuery waits the number of seconds specified by the T1 timer .
4. When a message is received before the T1 timer expires, then it and any other messages sent in the same package are dumped to the screen display, a log is generated, and the messages are saved to a file, when specified.
5. When a message is not received before the T1 timer expires, then TSTQuery sends the appropriate error message to the SCP and the appropriate output devices.
6. Control returns to the user.

Other messages, such as conversation messages, are sent the same way with the following differences:

- TSTQuery can wait for a response, or not
- the response is processed differently

The user should not quit TSTQuery while any of the following activities are pending:

- outstanding Send_Notifications or Termination_Notifications requests
- open STR conversation transactions
- open NEL transaction

When the user does quit TSTQuery while a transaction is open, an automatic audit process closes the open transaction. Similarly, the user can use the disp_trid command to manually close the open transaction(s).

In general, once the message is sent, TSTQuery determines, based on the message, whether to wait for a response from the SCP or not. For example, the SCP is not expected to respond to notification messages, such as Termination_Notification. However, queries, such as the Info_Analyzed message, and messages that TSTQuery has sent as part of a conversation require, do require a response. TSTQuery supports more elaborate message exchanges with the SCP such as Send_Notification, ACG as described in the “DMS-100 Family AIN Service Enablers Product Specification, Release NA009”. The following points are common to all response message processing:

- TSTQuery supports the display of incoming multi-component packages. ACG can arrive as part of these packages and are dumped to the screen display or to a file. The NCR application processes these messages according to GR-1298 and TSTQuery cannot respond to them. TSTQuery

receives the components of any response package in the same way as the DMS-100 SSP applications; one component at a time. TSTQuery waits after each message is sent for either an incoming component or the T1 timer to expire. When a component is received before the timer expires, TSTQuery dumps the message and then resets the timer to wait for any further components from the same message or further TCAP packages. Each component is processed as a message when it is received by TSTQuery. When TSTQuery's T1 timer expires before a new component appears, control is returned to the MAP display so the user can react to the incoming messages.

- Part of TSTQuery's response processing updates the messages that are legal to send, given the transactions the SCP has open. For AIN Essentials and AIN Service Enablers, when TSTQuery is started or is outside of an ongoing conversation, it allows the user to send the following basic SSP AIN query messages:
 - Origination_Attempt
 - Info_Collected
 - Info_Analyzed
 - Termination_Attempt
 - Network_Busy
 - O_Called_Party_Busy (applicable to AIN Service Enablers only)
 - O_No_Answer (applicable to AIN Service Enablers only)
 - T_Busy (applicable to AIN Service Enablers only)
 - T_No_Answer (applicable to AIN Service Enablers only)

After most conversations, the Error message can also be sent, but not immediately after another error message.

See Section 5.4.1 "Send_Notification" on page 226 to Section 5.4.4 "ACG" on page 228 for a description of the messages that can be sent.

5.4.1 Send_Notification

The information in this section applies to AIN Essentials and AIN Service Enablers.

When the SCP has sent a Send_Notification message, it is expecting a Termination_Notification message from the SSP (when the associated call has completed). TSTQuery tracks whether or not a Send_Notification has arrived and allows the user to build the corresponding Termination_Notification only when one has arrived.

Note: It is the user's responsibility to ensure that the mandatory EchoData parameter contains the same six bytes that were in the original Send_Notification message.

5.4.2 Send_To_Resource

The information in this section applies to AIN Essentials and AIN Service Enablers.

When the SCP responds to a query with a Send_To_Resource message then TSTQuery restricts you to send only the messages that are legal in the context of the STR's persistent transaction: Resource_Clear and Error. TSTQuery also handles the special case of the SCP sending a Cancel_Resource_Event while the transaction is still open.

TSTQuery transparently handles the management of the persistent transaction. The user does not need to track or enter the transaction to create Resource_Clear messages for the conversation.

5.4.3 Request_Report_BCM_Event

The information in this section applies AIN Service Enablers only.

This incoming message extends the set of legal messages the TSTQuery user can compose. Once the message has been received, the user is allowed to compose and send any of the following event notification and request messages:

- Network_Busy
- O_Called_Party_Busy
- O_No_Answer
- T_Busy
- T_No_Answer
- T_Answer
- O_Answer

The Close message is also available to close the transaction without using an event message.

The RRBCME message specifies the events that are to be armed in parameters EDP-Request and EDP-Notification. TSTQuery does not enforce this by restricting the messages you can compose, the user should compose the messages that the call scenario requires. This includes ensuring the messages are properly tagged as notifications or requests using parameter NotificationIndicator .

TSTQuery transparently tracks the transaction through the event notification or request transaction id of the RRBCME and ensures that the correct transaction ID is used for the EDP messages.

5.4.4 ACG

The information in this section applies to AIN Essentials and AIN Service Enablers.

The SCP can choose to send an ACG message in the same package as a response. TSTQuery displays this message and the non call-related application also receives this message.

6. Other CI commands for AIN

CI (command interpreter) commands allow operating company personnel to perform various administration and maintenance tasks on the DMS-100 SSP. For the AIN SSP, this includes the following commands and tools:

- query commands such as QLEN, QLENWRK, QDN, QDNWRK, QLT, QIT, QCUST and QGRP (MDN option)
- MAKEAMA command
- AMADUMP and CALLDUMP commands
- AINTCPCI command set
- AINMKRES tool
- AINCI directory of commands
- CALLTRAK tool
- DISPCALL tool
- ACGRESTORE tool
- XPMIST tool

6.1 Query commands

The query commands display AIN SSP information for DN, LENs and logical terminals that have subscribed to AIN. When the agent subscribes to AIN SSP, “AIN” or “AINDN” is listed as an option. The output also displays the AIN SSP group name (AINGRP) from table TRIGGRP that defines the triggers subscribed by the agent.

Each of these tools displays individual (line based) AIN trigger group subscriptions of the queried line. Each tool (except QCUST) displays the AIN trigger groups that are subscribed to the following:

- the of ce
- a customer group, when the line is a member of such a customer group:

This data is formatted and displayed on the MAP terminal display as part of the line query command output.

Note 1: The of ce wide and customer group wide AIN subscriptions are not displayed when the queried line is not supported for originating triggers.

Note 2: As there is no call context information available to the line query tools, they only indicate potential for AIN involvement in calls. The display of an AIN subscription in the line query tool output does not guarantee AIN involvement in calls on the line. To verify AIN involvement in a call, the user can make a more speci c check using the TRA VER tools.

Figure 83 shows an example query of DN 7225027 that subscribes to AIN SSP. The group of triggers it subscribes to is speci ed by AINGRP1. In this case, AINGRP1 and its associated triggers would be data lled in table TRIGGRP .

Figure 83 QDN query command example

```

>QDN 6216061
-----
DN:          6216061
TYPE: SINGLE PARTY LINE
SNPA: 613   SIG: DT   LNATTIDX: 200
LINE EQUIPMENT NUMBER:      HOST 00 1 05 18
LINE CLASS CODE:           1FR
IBN TYPE: STATION
CUSTGRP:      RESG200      SUBGRP: 0  NCOS: 0
LINE TREATMENT GROUP:      0
CARDCODE: 6X17AC   GND: N   PADGRP: STDLN  BNV: NL MNO: N
PM NODE NUMBER      :      74
PM TERMINAL NUMBER :      179
OPTIONS:
DGT
RES OPTIONS:
AIN LINETRIG1
CUSTOMER GROUP OPTIONS:
AIN CUSTTRIG
OFFICE OPTIONS:
U3WC
-----
>
    
```

6.2 Display of of ce wide AIN trig ger group subscription

This function displays the prompt “OFFICE OPTIONS:” and a list of the of ce options found in the tuple AIN_OFFICE_TRIGGRP of the DMS table OFCVAR. When a trigger group is present then the text “AIN” is displayed in the list of Of ce Options followed by the trigger group name. A sample of the of ce options display capability is sho wn in Figure 84 on page 231.

Figure 84 Of ce option display capability example

```

PM TERMINAL NUMBER :    179
OPTIONS:
DGT
RES OPTIONS:
AIN LINETRIG1
OFFICE OPTIONS:
U3WC AIN OFFICETRIG
-----
>

```

6.3 Display of customer group AIN trigger group subscription

This function displays the title “CUSTOMER GROUP OPTIONS:” and a list of the AIN customer group options found. Only AIN customer group options are displayed (even when other customer group options exist).

The customer group option display capability checks whether the queried line is a member of a customer group. When the line is a member of a customer group then the table CUSTSTN is checked for the presence of the AIN option tuple for that customer group. When such a tuple is found, the text “AIN” is displayed in the Customer Group options list followed by the subscribed trigger group name. A sample of the customer group option display capability is shown in Figure 85 on page 232.

Note 1: For MDC lines the customer group options displayed under the QLEN and QLENWRK commands are those of the customer group of key 1. The customer group options displayed under the QDN and QDNWRK commands are those of the customer group of the key corresponding to the queried directory number. This is consistent with the customer group displayed by each command.

Note 2: For ISDN lines, the customer group options displayed under the QLT and QIT commands are those of the customer group of key 1. The customer group options displayed under the QDN and QDNWRK commands are those of the customer group of the key corresponding to the queried directory number. This is consistent with the customer group displayed by each command.

Figure 85 Customer group option display capability example

```

PM TERMINAL NUMBER :    179
OPTIONS:
DGT
RES OPTIONS:
AIN LINETRIG1
CUSTOMER GROUP OPTIONS:
AIN CUSTTRIG
OFFICE OPTIONS:
U3WC AIN OFFICETRIG
-----
>

```

6.4 Samples of queries

This section shows a number of figures illustrating the output of the QLEN, QLENWRK, QDN, QDNWRK, and QGRP commands.

Figure 86 shows output for a RES line. In this example, an AIN trigger group was subscribed for this line's customer group and is shown in bold.

Figure 86 QLEN output example for a RES line

```

>QLEN HOST 00 1 05 18
-----
LEN:      HOST 00 1 05 18
TYPE: SINGLE PARTY LINE
SNPA: 613
DIRECTORY NUMBER:      6216061
LINE CLASS CODE:      1FR
IBN TYPE: STATION
CUSTGRP:      RESG200      SUBGRP: 0  NCOS: 0
SIGNALLING TYPE: DIGITONE
LINE ATTRIBUTE INDEX:      200
CARDCODE: 6X17AC      GND: N  PADGRP: STDLN  BNV: NL MNO: N
PM NODE NUMBER      :      74
PM TERMINAL NUMBER :      179
OPTIONS:
DGT
RES OPTIONS:
AIN LINETRIG1
CUSTOMER GROUP OPTIONS:
AIN CUSTTRIG
OFFICE OPTIONS:
U3WC
-----
>

```

Figure 87 on page 233 provides a sample output for a QLENWRK command. In this example, the trigger group OFFICETRIG is provisioned as the of ce wide trigger group.

The second line (REM4 00 0 01 23) is a meridian digital centrex (MDC) line and a member of the customer group COMKODAK. In this example, the AIN trigger group CUSTTRIG is subscribed for the customer group and is displayed, in addition to the of ce wide subscription.

Figure 87 QLENWRK output example for RES and MDC lines

```

REPORT ON WORKING LINE EQUIPMENT NUMBERS
FROM REM4 00 0 TO REM4 00 0 1
LCC ALL OPTION ALL
-----
LEN: REM4 00 0 01 12
TYPE: SINGLE PARTY LINE
DN 6216227 LCC RES SIG DT LNATTIDX 200
IBN TYPE: STATION
CUSTGRP: RESG200 SUBGRP: 0 NCOS: 0
CARDCODE: 6X17AC GND: N PADGRP: STDLN BNV: NL MNO: N
PM NODE NUMBER : 74
PM TERMINAL NUMBER : 179
OPTIONS:
DGT AIN LINETRIG1
OFFICE OPTIONS:
AIN OFFICETRIG
-----

LEN: REM4 00 0 01 23
TYPE: SINGLE PARTY LINE
DN 7221231 LCC M5312 SET SIG N/A LNATTIDX N/A
CUSTGRP: COMKODAK SUBGRP: 0 NCOS: 0 RING: Y
CARDCODE: 6X21AC GND: N PADGRP: PPHON BNV: NL MNO: Y
PM NODE NUMBER : 81
PM TERMINAL NUMBER : 56
OPTIONS:
3WC RAG LNR NAME PUBLIC DANDELION AUTODISP Y $ AIN LINETRIG1 $ DRING Y 8 Y
5 ALL 5 Y 5 Y 5 Y 5 Y 5 Y 5 Y 5 CFU N $ I $ CFB P $ I $ IECFB $ I $ I CFD P
$ I $ IECFD $ I $ I INSPECT EMW CLASSP 1 PF USER ADMIN LANG ENGLISH CWT Y Y
N $ SCS
CUSTOMER GROUP OPTIONS:
AIN CUSTTRIG
OFFICE OPTIONS:
AIN OFFICETRIG
-----

TOTAL: 2

```

Figure 88 on page 234 provides an output for a QDN command on a line with a MDC set. In this example, an AIN trigger group is subscribed for the of ce.

Note: For MDC lines the customer group options displayed under the QLEN and QLENWRK commands are those of the customer group of key 1. The customer group options displayed under the QDN and QDNWRK commands are those of the customer group of the key corresponding to the queried directory number. This is consistent with the customer group displayed by each command.

Figure 88 QDN output example for an MDC line

```
>QDN 7225032
-----
DN:          7225032
TYPE: SINGLE PARTY LINE
SNPA: 613   SIG: N/A   LNATTIDX: N/A
LINE EQUIPMENT NUMBER:      REM4  00 0 00 24
LINE CLASS CODE:  M5312 SET
KEY: 1
CUSTGRP:          COMKODAK  SUBGRP: 0  NCOS: 0  RING: Y
CARDCODE:  6X21AC   GND: N  PADGRP: PPHON  BNV: NL MNO: Y
PM NODE NUMBER      :      81
PM TERMINAL NUMBER :      25
OPTIONS:
MCH EBO
AIN LINETRIG1 $
FTRGRP OPTIONS: PFGROUP1
AAB INSPECT MSB $ PRK RAG 3WC CFB P $ I $ CBI CFD P $ I $ CDI CFU N $ I $
PF USER GENERAL LANG ENGLISH SCS
OFFICE OPTIONS:
AIN OFFICETRIG
-----
>
```

Figure 89 on page 235 provides an output for a QDNWRK command. In this example, no AIN trigger group is subscribed for the lines' customer group (COMKODAK), therefore, no customer group options are displayed. The trigger group OFFICETRIG is subscribed as the of ce wide AIN trigger group.

Figure 89 QDNWRK output example for MDC lines

```

REPORT ON WORKING DIRECTORY NUMBERS
FROM      6137225031 TO      6137225032
  LCC ALL                OPTION ALL
-----
DN:      7225031
TYPE: SINGLE PARTY LINE
SNPA: 613  SIG: N/A  LNATTIDX: N/A
LINE EQUIPMENT NUMBER:  HOST 00 1 02 08
LINE CLASS CODE:  M5112 SET
KEY: 1
CUSTGRP:      COMKODAK SUBGRP: 0  NCOS: 0  RING: Y
CARDCODE: 6X21AC  GND: N  PADGRP: PPHON  BNV: NL  MNO: Y
PM NODE NUMBER      :      74
PM TERMINAL NUMBER :      73
OPTIONS:
3WC MCH RAG PRK EBO
DND 1 CFU N $ I $ CFB N 25032 A $ CBI CFD N 25032 A $ CDI SCS AAB
OFFICE OPTIONS:
AIN OFFICETRIG
-----
DN:      7225032
TYPE: SINGLE PARTY LINE
SNPA: 613  SIG: N/A  LNATTIDX: N/A
LINE EQUIPMENT NUMBER:  REM4 00 0 00 24
LINE CLASS CODE:  M5312 SET
KEY: 1
CUSTGRP:      COMKODAK SUBGRP: 0  NCOS: 0  RING: Y
CARDCODE: 6X21AC  GND: N  PADGRP: PPHON  BNV: NL  MNO: Y
PM NODE NUMBER      :      81
PM TERMINAL NUMBER :      25
OPTIONS:
MCH EBO
DND 1
FTRGRP OPTIONS: PFGROUP1
AAB INSPECT MSB $ PRK RAG 3WC CFB P $ I $ CBI CFD P $ I $ CDI CFU N $ I $
PF USER GENERAL LANG ENGLISH SCS
OFFICE OPTIONS:
AIN OFFICETRIG
-----
TOTAL COUNT OF WORKING DN FROM      6137225031 TO      6137225032:      2
>

```

Figure 90 on page 236 provides an output of the QGRP command using the MDN option. Note the output. In this case, the trigger group CUSTTRIG is provisioned for the customer group COMKODAK and the trigger group OFFICETRIG is provisioned as the of ce wide trigger group.

Figure 90 QGRP output example using the MDN option

```
>qgrp mdn 7227050

MDN GROUP
-----

PRIMARY:   ISDN      104      KEY 3
           ISDN      102      KEY 4
           ISDN      101      KEY 3
           ISDN      111      KEY 4
           ISDN      120      KEY 4
           ISDN      130      KEY 4
           ISDN      150      KEY 4
           ISDN      160      KEY 4
           ISDN      170      KEY 4
           ISDN      180      KEY 4
           REM1    00 0 00 24 KEY 2
           REM1    00 0 09 31 KEY 2

The Primary member has the following options :
RAG PRK SFC EBO NAME PUBLIC TWEETY BIRD PRIVATE SYLVESTER
LVM SCS CFU N $ I $ FC 6 HLD XFER CTALL DROP SCL 0 L30
CUSTOMER GROUP OPTIONS:
AIN CUSTTRIG
OFFICE OPTIONS:
SDS AIN OFFICETRIG

The number of members in the SCA MDN GROUP is 12.

>
```

6.5 Line query tool support for the DMS trigger item interface

The following line query tools support the DMS-100 trigger item interface:

- QLEN and QLENWRK
- QDN and QDNWRK
- QLT
- QIT
- QGRP

The output of the line query tools includes line, customer group and of ce-wide AIN subscription data.

When the AIN_OFFICE_TRIGGRP of ce parameter is set to "TIID", the of ce option portion of the line query output appears as "AIN TIID", indicating that one or more subscriptions to of ce wide trigger items are in use.

See Figure 91 and Figure 92 on page 238 for sample outputs.

Figure 91 Sample QLEN output

```
>QLEN HOST 00 0 10 26
-----
LEN:      HOST 00 0 10 26
TYPE: SINGLE PARTY LINE
SNPA: 613
DIRECTORY NUMBER:      6213112
LINE CLASS CODE:      1FR
IBN TYPE: STATION
CUSTGRP:      RESG200      SUBGRP: 0  NCOS: 0
SIGNALLING TYPE: DIGITONE
LINE TREATMENT GROUP:      0
LINE ATTRIBUTE INDEX:      400
CARDCODE: 6X17AC      GND: N  PADGRP: STDLN  BNV: NL MNO: N
PM NODE NUMBER      :      169
PM TERMINAL NUMBER :      347
OPTIONS:
DGT
RES OPTIONS:
AIN INDIVTRIG
CND NOAMA
CUSTOMER GROUP OPTIONS:
AIN CUSTTRIG
OFFICE OPTIONS:
U3WC  AIN TIID
-----
```

Figure 92 Sample QDN output

```
>qdn 6215110
-----
DN:          6215110          (NON-UNIQUE)
TYPE: SINGLE PARTY LINE
SNPA: 613   SIG: DT   LNATTIDX: 167
LINE EQUIPMENT NUMBER:      HOST 00 0 00 23
LINE CLASS CODE:           PBX
CARDCODE: 6X17AC   GND: N   PADGRP: STDLN   BNV: NL MNO: N
PM NODE NUMBER      :      76
PM TERMINAL NUMBER :      24
OPTIONS:
HOT DGT
OFFICE OPTIONS:
AIN TIID
-----
```

6.5.1 Query commands

When the customer group subscription is set to trigger items, the line query output appears as “AIN TIID”, indicating that one or more subscriptions to trigger items are in use by the customer group. The actual subscriptions are shown in table CUSTIID.

When the agent subscribes to AIN trigger items, “AIN” or “AINDN” is listed as an option, followed by the keyword “TIID” and the list of trigger item assignments. Each trigger item assignment will be displayed as a TDP, TINAME, and assignment state (ON or OFF). Figure 93 illustrates customer group and individual subscription to AIN using the trigger item provisioning interface.

Figure 93 QLEN Output example

```

>qlen REM1 01 0 08 10
-----
LEN:      REM1 01 0 08 10
TYPE: SINGLE PARTY LINE
SNPA: 613
DIRECTORY NUMBER:      6136214 77
LINE CLASS CODE:      1FR
IBN TYPE: STATION
CUSTGRP:      RESG200      SUBGRP: 0  NCOS: 0
SIGNALLING TYPE: DIGITONE
LINE ATTRIBUTE INDEX:      200
CARDCODE: 6X17AA GND: N  PADGRP: STDLN  BNV: NL MNO: N
PM NODE NUMBER      :      45
PM TERMINAL NUMBER :      267
OPTIONS:
DGT
RES OPTIONS:
AIN TIID 01 OFFIMM ON 17 AFR OFF
CUSTOMER GROUP OPTIONS:
AIN TIID
OFFICE OPTIONS:
U3WC AIN TIID
-----

```

6.6 MAKEAMA command

The MAKEAMA CI command is used by operating company personnel to generate AMA records for testing purposes. MAKEAMA is enhanced by AIN SSP to generate new AIN SSP AMA Structures 220 and 221 and support the Call Type code 047. The syntax for the MAKEAMA command is as follows:

```
>MAKEAMA <call code> [<quantity>] [<structure code>]
```

For example, to generate an AMA record for a Call Type 047 in Structure 220, the command is as follows:

```
>MAKEAMA 047 1 220
```

6.7 AMADUMP and CALLDUMP commands

The AMADUMP and CALLDUMP CI commands have been modified to support the structures 220 and 221 as well as the Call Type code 047.

6.8 AINTCPCI commands

AINTCPCI is a set of CI commands introduced for the ethernet AIN SSP. The commands in this set are used to add, delete and display mapping of the remote TCP/IP socket on the off-board processor to the AIN SSP application on the SSP.

Before the TCP/IP socket can be mapped, the AIN SSP subsystem on the adjunct must be defined in table C7LOCSSN.

To enter the AINPCI directory and define the remote TCP/IP socket, the set of commands are:

```
>AINTCPCI
>ADDAPPL <application_name> <application_instance>
        <IP_address> <TCP_port_number>
```

where:

- application_name is the AIN SSP application on the SSP
- application_instance identifies the off-board processor
- IP_address is the IP address of the off-board processor
- TCP_port_number is the port number for the AIN SSP application at the off-board processor

For example, to define the TCP/IP socket for application instance 2 at IP address “41 208 0 159” and TCP port number “217” for AIN SSP the command is

```
>ADDAPPL AINR01 2 41 208 0 159 217
```

To change the TCP/IP socket for an application instance, the old value must first be deleted using the delete command and the new value assigned using the ADD command. The syntax for the delete command is as follows:

```
>DELAPPL <application_name> <application_instance>
```

Values assigned to an application instance can be displayed using the following query command:

```
>DISPAPPL <application_name> <application_instance>
```

6.9 AINMKRES tool

The AINMKRES tool creates a CI command environment, under which the user can convert the existing AIN POTS lines to the compatible RES lines.

To enter the AINMKRES directory, type the following:

```
>AINMKRES
```

To convert all the eligible AIN POTS lines to RES, type the following:

```
>ALL
```

To convert all the AIN POTS lines within a given range of line equipment numbers (LEN), type the following:

```
>RANGE START <LEN> STOP <LEN>
```

6.10 AINCI command interpreter directory

AINCI is the name of a directory of CI commands. This directory is intended to contain all AIN CI commands that have been created since NA005B. Currently, the CI commands in this directory can be grouped in the following categories:

- *Trigger activation state administration for the trigger group provisioning interface*—Two CI commands are used to display and modify the activation states for a given AIN subscriber to Off-Hook Immediate, Off-Hook Delay, or Termination Attempt triggers.
- *Automatic code gapping commands*—Three CI commands are used to display the control lists and delete specified control items from the control lists.

To enter the AINCI directory, type the following:

```
>AINCI
```

The following sections describe the CI commands that can be used from within the AINCI directory.

6.10.1 Trigger activation-state administration for the trigger group provisioning interface

The following CI commands help you display and modify the activation states for triggers provisioned with the trigger group provisioning interface:

- SHOWSTATE
- CHANGESTATE

6.10.1.1 Displaying the trigger activation states

To display the trigger activation states for a given line, trunk, or DN subscribed AIN agent, use the SHOWSTATE CI command. The syntax of the SHOWSTATE command is shown in Table 20.

Table 20 SHOWSTATE command

>SHOWSTATE	<agent>	{DN <directory number>
		CLLI <trunk group name>
		ADNUM <administrative number> }
	<trigger>	{OFFHKIMM, OFFHKDEL, TERMATT}
	[<BearerCapability>]	{SPEECH, 3_1KHZ, 56KDATA, 64KDATA}

where:

- <agent> is either a DN, a CLLI, or an Administrative Number that designates an AIN subscribed agent. <directory number> should be a 7- or 10-digit DN that corresponds to a line or DN subscribed agent. <trunk group name> should be a CLLI identifier that corresponds to a trunk subscribed agent. <administrative number> should be an Administrative Number (in the range from 0 to 8191) that corresponds to a trunk subscribed agent.
- <trigger> is the trigger type for which the corresponding activation states will be displayed.
- <bearer_capability> is the AIN bearer capability for which the corresponding activation states will be displayed. When this parameter is omitted, then the SHOWSTATE command will be executed for all applicable bearer capabilities.

The bearer capabilities that apply for a particular AIN-subscribed agent depend on the trigger group to which the agent is subscribed. When the agent is subscribed to an AIN trigger group that contains, say, an Off-Hook Immediate trigger subscribed on a particular call type criterion, then the applicable bearer capabilities are those that are compatible with the call type criterion. When no call type criterion is specified in the trigger group, then all bearer capabilities are applicable. Table 21 shows how the call type criteria

(from the subscribed AIN agent's trigger group) is mapped to the corresponding bearer capabilities.

Table 21 Corresponding bearer capabilities for the call type criteria

Call type	Bearer capability
VBINFO	SPEECH
	3_1KHZ
CMDATA	56KDATA
	64KDATA

The following examples demonstrate the use of command SHOWSTATE. An agent, specified by the DN, CLLI, or Administrative number, and a trigger with bearer capability are entered by the user. The output of command SHOWSTATE is shown in Figure 94 on page 244.

Figure 94 Examples of outputs from the SHOWSTATE command

```
>AINCI
AINCI:
>SHOWSTATE DN 6211091 OFFHKIMM SPEECH
AGENT:          DN 6136211091
TRIGGER:        OFFHKIMM
BEARER CAPABILITY: SPEECH
TRIGGER STATE:  OFF

>SHOWSTATE CLLI TRKGRP1 OFFHKDEL 56KDATA
AGENT:          CLLI TRKGRP1
TRIGGER:        OFFHKDEL
BEARER CAPABILITY: 56KDATA
TRIGGER STATE:  ON

>SHOWSTATE ADNUM 203 OFFHKDEL
AGENT:          ADNUM 203
TRIGGER:        OFFHKDEL
BEARER CAPABILITY: SPEECH
TRIGGER STATE:  OFF
BEARER CAPABILITY: 3_1KHZ
TRIGGER STATE:  OFF
BEARER CAPABILITY: 56KDATA
TRIGGER STATE:  ON
BEARER CAPABILITY: 64KDATA
TRIGGER STATE:  ON

>SHOWSTATE DN 6137221234 TERMATT 64KDATA
AGENT:          DN 6137221234
TRIGGER:        TERMATT
BEARER CAPABILITY: 64KDATA
TRIGGER STATE:  ON

>SHOWSTATE DN 6211111 OFFHKDEL
TRIGGER IS NOT SUBSCRIBED FOR BEARER CAPABILITY SPEECH
TRIGGER IS NOT SUBSCRIBED FOR BEARER CAPABILITY 3_1KHZ
AGENT:          DN 6136211111
TRIGGER:        OFFHKDEL
BEARER CAPABILITY: 56KDATA
TRIGGER STATE:  OFF
BEARER CAPABILITY: 64KDATA
TRIGGER STATE:  ON
```

6.10.1.2 Modifying the trigger activation state

To modify the trigger activation states for a given line, trunk, or DN-subscribed AIN agent, use the CHANGESTATE CI command. The syntax for command CHANGESTATE is shown in Table 22.

Table 22 CHANGESTATE command

>CHANGESTATE	<agent> <trigger> [<bearer_capability>] <state>]	{DN <directory number> CLLI <trunk group name> ADNUM <administrative number> } {OFFHKIMM, OFFHKDEL, TERMATT} {SPEECH, 3_1KHZ, 56KDATA, 64KDATA} {ON, OFF}
--------------	---	--

where:

- <agent> is either a DN, a CLLI, or an Administrative Number that designates an AIN subscribed agent. <directory number> should be a 7- or 10-digit DN that corresponds to a line or DN subscribed agent. <trunk group name> should be a CLLI identifier that corresponds to a trunk subscribed agent. <administrative number> should be an Administrative Number (in the range from 0 to 8191) that corresponds to a trunk subscribed agent.
- <trigger> is the trigger type for which the corresponding activation states will be modified.
- <bearer_capability> is the AIN bearer capability for which the corresponding activation states will be modified. When this parameter is omitted, then the CHANGESTATE command will be executed for all applicable bearer capabilities.
- <state> is the value to which the trigger activation states will be set.

In the case where the <bearer_capability> parameter is omitted, the applicable bearer capabilities are determined in the same manner as for the SHOWSTATE command.

Figure 95 on page 246 demonstrates the use of command CHANGESTATE.

Figure 95 Examples of the CHANGESTATE command

```
>AINCI
AINCI:
>CHANGESTATE DN 6211091 OFFHKIMM SPEECH ON
AGENT:          DN 6136211091
TRIGGER:        OFFHKIMM
BEARER CAPABILITY: SPEECH
TRIGGER STATE:  OFF

ARE YOU SURE YOU WANT TO CHANGE THE TRIGGER STATE(S) TO ON?
Please confirm ("YES", "Y", "NO", or "N"):
>Y
ACTIVATION STATE CHANGED

>CHANGESTATE CLLI TRKGRP1 OFFHKDEL 56KDATA OFF
AGENT:          CLLI TRKGRP1
TRIGGER:        OFFHKDEL
BEARER CAPABILITY: 56KDATA
TRIGGER STATE:  OFF

ARE YOU SURE YOU WANT TO CHANGE THE TRIGGER STATE(S) TO OFF?
Please confirm ("YES", "Y", "NO", or "N"):
>Y
ACTIVATION STATE CHANGED

>CHANGESTATE ADNUM 203 OFFHKDEL OFF
TRIGGER IS NOT SUBSCRIBED FOR BEARER CAPABILITY SPEECH
TRIGGER IS NOT SUBSCRIBED FOR BEARER CAPABILITY 3_1KHZ
AGENT:          ADNUM 203
TRIGGER:        OFFHKDEL
BEARER CAPABILITY: 56KDATA
TRIGGER STATE:  ON
BEARER CAPABILITY: 64KDATA
TRIGGER STATE:  OFF

ARE YOU SURE YOU WANT TO CHANGE THE TRIGGER STATE(S) TO OFF?
Please confirm ("YES", "Y", "NO", or "N"):
>Y
ACTIVATION STATE CHANGED

>CHANGESTATE DN 6137221234 TERMATT 64KDATA ON
AGENT:          DN 6137221234
TRIGGER:        TERMATT
BEARER CAPABILITY: 64KDATA
TRIGGER STATE:  OFF

ARE YOU SURE YOU WANT TO CHANGE THE TRIGGER STATE(S) TO ON?
Please confirm ("YES", "Y", "NO", or "N"):
>N
CHANGESTATE COMMAND ABORTED
```


6.10.2 Automatic Code Gapping commands

The following CI commands are used to display the ACG control lists and delete specified controls from the control lists:

- **ACGDISPLAY**—This CI command is used to display the control lists. There are two control lists: an SCP list and an SMS list.
- The syntax of the ACGDISPLAY command is as follows:

```
>ACGDISPLAY [<list_type>] [<gap_type>]
```
- where:
 - <list_type> is either SCP_LIST, SMS_LIST, or ALL
 - This parameter is optional. When list_type is omitted the default is to print all lists.
 - <gap_type> is either ZERO_GAP or NON_ZERO_GAP.

Note: This parameter is optional and can only be included when a list_type of SMS_LIST has been entered. When list_type is SMS_LIST and the gap_type parameter is omitted, then both ZERO_GAP and NON_ZERO_GAP controls are displayed.

- **ACGDELETE**—This CI command is used to delete a specified control from an ACG control list. Only one control is deleted by this command.
- The syntax of the ACGDELETE command is as follows:

```
>ACGDELETE <list_type> <tt_name> <gta>
```
- where:
 - <list_type> is either SCP_LIST or SMS_LIST
 - <tt_name> is the GTT name as detailed in table C7GTTTYPE
 - <gta> is the Global Title Address (digits)
- For example, to delete the GTA/TT combination of 613621/AINJAZZ from the SCP control list, type:

```
>ACGDELETE SCP_LIST AINJAZZ 613621
```
- **ACGRESTORE**—This CI command is used to restore entire control lists with one request; that is, delete all controls from either the SMS or SCP, or both control lists as specified.
- Deleting controls from a control list may impact the stability of the CCS7 network. The severity of this impact is dependent on the current network traffic load. The ACGRESTORE command should be used with caution.
- The syntax of the ACGRESTORE command is as follows:

```
>ACGRESTORE <list_type> <gap_type>
```

- where:
 - <list_type> is either SCP_LIST, SMS_LIST, or ALL
 - <gap_type> is either ALL or EXCLUDE_ZERO_GAPS
- The parameter <list_type> is mandatory. The parameter <gap_type> is only required when <list_type> is set to SMS_LIST.

6.11 CALLTRAK tool

The CALLTRAK tool traces individual calls in the DMS-100 switch. The call can originate on a line or a trunk.

CALLTRAK contains these tools to collect and display data:

- PGMTRACE traces procedure and method calls for the call process CALLP
- MSGTRACE monitors incoming, outgoing, and internal messages for a traced call
- TIMECALL provides a list of call events with their real-time costs and the total cost of the call.

Note: PGMTRACE is based on the tool CALLCT. MSGTRACE is based on the tool PMIST.

6.11.1 When to use CALLTRAK

Use CALLTRAK to collect data for call processing applications. Use CALLTRAK to

- trace the program execution of the call processing transactions for a call
- monitor incoming and outgoing call processing messages and transactions for call agents
- determine the execution timing for call events and the length of an entire call

6.11.2 CALLTRAK commands

CALLTRAK is integral to several subsystems, each of which contains one or more modules. When subsystems or modules are missing, some CALLTRAK commands or tools do not function. The following table lists the CALLTRAK subsystems and modules.

6.11.3 Restrictions and limitations

This section describes the following restrictions and limitations on the use of CALLTRAK:

- real-time impact
- interaction with external calls

- interaction with other tools
- number of sessions

6.11.3.1 Real-time impact

Do not use CALLTRAK during peak hours because there is a substantial real-time impact on call processing in the following manner:

- PGMTRACE slows call process by 200 times.
- MSGTRACE slows call process by 100%.
- TIMECALL slows call process by 25 to 50%.

6.11.3.2 Interaction with external calls

Normally, an external call can interrupt external actions. When an external call interferes with a CALLTRAK trace, you cannot trace the correct type of call. For example, when the terminal is called from a different site just before the trace begins, the call terminates as planned, and the CALLTRAK call terminates in a busy signal. In this case, you are tracing a line-to-tone call instead of the planned line-to-line call.

For interaction with other tools, CALLTRAK uses the same software modules as CALLCT and PROTRACE. As a result, running either of these tools at the same time as CALLTRAK can result in invalid CALLTRAK data. For this reason, run CALLTRAK separately.

Only one measuring tool can use `rmw are timing` at any given time. The tools ACTIVITY, ANALYSIS, HOGCT, and CALLCT use `rmw are timing`. When you start CALLTRAK with either PGMTRACE or TIMECALL turned on, CALLTRAK checks for another tool that is using `rmw are timing`. When another tool is using `rmw are timing`, CALLTRAK does not start and displays a warning message.

6.11.3.3 Number of sessions

Fifteen CALLTRAK sessions can be run simultaneously.

6.12 DISPCALL tool

DISPCALL is a diagnostic tool that monitors data entered from a dropped calls or calls held for analysis.

You can set DISPCALL to invoke automatically on the dropped call or you can use DISPCALL to capture information about a call in progress.

For a cross-threaded call, DISPCALL shows the originating and terminating ports of the call, and the software and hardware resources that the system uses on the call. For the originator or receiver of a call, DISPCALL displays call processing data areas: call condense blocks (CCB), call data blocks (CDB), message buffers, extension blocks, and protected and unprotected data.

You can display DISPCALL data in either formatted (English text) or hexadecimal form.

6.12.1 When to use DISPCALL

Use DISPCALL to investigate trouble conditions that cause dropped calls. In the cross-threaded environment, use DISPCALL to analyze AUDIT log reports as well.

6.12.2 Commands

The commands available at the DISPCALL level are as follows:

- clear
- death
- disptid
- free
- help
- query
- quit
- savelen
- savetid
- set
- show

6.12.2.1 Clear command

Use the clear command to clear all the data buffers. The clear command has no parameters or variables. There are no responses to the clear command.

6.12.2.2 Death command

Use the death command to enable or disable data collection for dropped calls.

6.12.2.3 Disptid command

Use the disptid command to convert the terminal identifier (TID) number of an agent to a call process identifier (CPID) designation (the LEN and DN).

6.12.2.4 Free command

Use the free command to de-allocate all buffers. The free command has no parameters or variables. There is no message response to the free command.

6.12.2.5 Help command

Use the help command to access on-line information on DISPCALL commands.

6.12.2.6 Query command

Use the query command to display the

- number of allocated buffers
- number of buffers currently in use
- current settings of the parameters of the death command

6.12.2.7 Quit command

Use the quit command to exit from DISPCALL.

6.12.2.8 Savelen command

Use the savelen command to save data on a call on an active line when you know the LEN. The savelen command saves the CCB, whether protected or unprotected. Use the DISPTID command to determine the LEN.

6.12.2.9 Savetid command

Use the savetid command to save the call data on an active line when you know the call's TID. The savetid command saves the CCB, whether it is protected or unprotected.

6.12.2.10 Set command

Use the set command to allocate call data buffers.

6.12.2.11 Show command

Use the show command to display the call data buffers.

6.12.3 How to access DISPCALL

Access the DISPCALL level from the CI level of the MAP display by entering:

>DISPCALL

and pressing the Enter key.

Table 23 provides explanations for the responses to command DISPCALL.

Table 23 Responses for the DISPCALL command

MAP response	Meaning and action
CAN'T ALLOCATE COMMAND DIRECTORY	<p>Meaning: The system does not have enough resources to allocate a DISPCALL command directory.</p> <p>Action: Wait until the system is less busy and enter the command again. When the problem continues, contact your next level of support.</p>

Table 23 Responses for the DISPCALL command (Continued)

MAP response	Meaning and action
CAN'T EXTEND THE SYMBOL TABLE	<p>Meaning: system does not have enough resources to allocate a DISPCALL symbol table.</p> <p>Action: Wait until the system is less busy and try again. When the problem persists, contact your next level of support.</p>

6.12.4 Notes for the use of DISPCALL

There are different methods of using DISPCALL to collect and display call processing information. This section provides recommendations for operating DISPCALL and procedures that illustrate the methods of using the utility.

6.12.4.1 Operating DISPCALL

Follow these recommendations to obtain accurate and complete DISPCALL displays.

- Before using DISPCALL to analyze a dropped call, perform a TRAVER on the called number to verify that the translations information is complete.
- Use the set command to allocate 10 buffers for each buffer type. For example, to define 10 CCB buffers, enter
set ccb 10
Repeat this command for the CDB, EXT, PROT, UNPROT, and MBUFF buffers.
- To run DISPCALL continuously, set the death command on. While death is on, every dropped call causes DISPCALL to capture and display data, allowing you to analyze the data rapidly.
- To determine the number of buffers in use, use the query command periodically.
- Before you can use the savelen or savetid command, the call you want to analyze must be in progress.
- To obtain a hard copy of the DISPCALL data, use the show command to show all buffers in use. Using the show call command with the formatted option displays notification of a dropped call, including information such as calling and called numbers, route data, equal access data, and whether or not a feature is in use. Keep the hard copies for trouble analysis.
- To make room for more call data, clear the buffers periodically.

- When a network is running in simplex mode, loss of integrity can cause a call to drop. Analyzing a dropped call at the integrity analysis (NETINTEG) sublevel of the MAP display can help in troubleshooting.
- When more than one MAP sessions are running DISPCALL simultaneously, the buffer space is shared.
- When you quit DISPCALL, buffers do not automatically clear. Therefore, you can retrieve call information when you exit a session accidentally.

6.12.4.2 Collection of data when a call fails

To collect and display data when a call fails, perform the steps in the following procedure.

Procedure 1 Displaying and collecting data when a call fails

Step Action and response

- 1 Access DISPCALL.
The system returns the DISPCALL prompt.
- 2 Use the query command to make sure sufficient buffers are available to hold the call information.

The resulting display shows:

BUFFER	ALLOCATED	IN USE
CCB	10	0
CDB	10	0
EXT	10	0
PROT	10	0
UNPROT	10	0
MBUFF	10	0

When 0 appears in the ALLOCATED column, use the set command to set the number of buffers to 10.

- 3 To enable data collection, turn the death command on. DISPCALL responds by saving all the data buffers for any call that drops.
- 4 While the death command is on, do the following steps:
 - a Periodically determine how many buffers are in use with the query command.
 - b Display all the information associated with the call by using the show call command with f for the formatting option.
 - c Obtain a hard copy of the data for each buffer in use by using the show type command with f for the formatting option. Keep the hard copies for trouble analysis.
 - d To make room for more data, periodically clear the buffers with the clear command.

- 5 To disable data collection, turn the death command off.
- 6 To exit from DISPCALL, use the quit command.

6.12.4.3 Collecting data for an active call

To collect and display the data associated with an active call, perform the steps in the following procedure.

Procedure 2 Displaying and collecting data for an active call

Step Action and response

- 1 Access DISPCALL.
The system returns the DISPCALL prompt.
- 2 Use the query command to make sure sufficient buffers are available to hold the call information. The resulting display shows:

BUFFER	ALLOCATED	IN USE
CCB	10	0
CDB	10	0
EXT	10	0
PROT	10	0
UNPROT	10	0
MBUFF	10	0

When 0 appears in the ALLOCATED column, set the number of buffers to 10 with the set command.

- 3 To save the data associated with the call, use the savetid command when the call's TID is known, or the savelen command when the call's LEN is known.

Note: DISPCALL does not save the CDB when you use the savetid or savelen command.
- 4 Display all the information associated with the call by using the show call command with f for the formatting option.
- 5 Display the information for each buffer in use with the show type command with f for the formatting option.
- 6 To exit from DISPCALL, use the quit command.

6.12.5 Restrictions and limitations

The DISPCALL tool does not function when CPU occupancy is too high.

6.13 ACGRESTORE

Use this command to do the following:

- restore entire control lists with a single request
- delete all controls from either the SMS or SCP, or both control lists as specified



CAUTION

Possible loss of service

Deleting controls from a control list can impact the stability of the CCS7 network. The severity of this impact depends on the current network traffic load. Use the ACGRESTORE command with extreme caution.

6.13.1 ACGRESTORE syntax

ACGRESTORE has the following syntax:

>ACGRESTORE <list_type> <gap_type>

where <list_type> is the control list from which you want to remove controls (mandatory) <gap_type> is only valid when you specify an SMS_LIST. When you specify an SMS_LIST, you must select a gap_type.

When the command starts, you have the following choices:

- enter Y to continue with the command; the system dumps all associated controls lists to the MAP display
- enter N to cancel the preview; the system continues processing to delete the controls from the control lists
- enter abort to cancel the command; no further processing of the ACGRESTORE request occurs

6.13.2 ACGRESTORE responses

The system displays the following:

- a message regarding the status of ACG
- a warning on the potential impact of using this command

These responses are shown in Figure 96 to Figure 99 on page 257.

Figure 96 ACGRESTORE response example 1

```
ACG is Currently Enabled.
WARNING: When Automatic Code Gapping (ACG) is enabled, then
deleting controls from the ACG control lists may impact the stability of
the CCS7 network. The severity of this impact depends on the current
network traffic load. This command should be used with extreme caution!
All AIN ACG controls in the SCP control list will be deleted.

Do you want to preview the controls to be deleted before continuing with
the restore?

Please confirm: Enter 'Y', 'N' or 'abort':
```

Figure 97 ACGRESTORE response example 2

```
ACG is Currently Enabled.
WARNING: When Automatic Code Gapping (ACG) is enabled, then
deleting controls from the ACG control lists may impact the stability of
the CCS7 network. The severity of this impact depends on the current
network traffic load. This command should be used with extreme caution!
All AIN ACG controls in the SMS control list will be deleted.

Do you want to preview the controls to be deleted before continuing with
the restore?

Please confirm: Enter 'Y', 'N' or 'abort':
```

Figure 98 ACGRESTORE response example 3

```
ACG is Currently Enabled.
WARNING: When Automatic Code Gapping (ACG) is enabled, then
deleting controls from the ACG control lists may impact the stability of
the CCS7 network. The severity of this impact depends on the current
network traffic load. This command should be used with extreme caution!
All AIN ACG controls in the SMS control list, except for those with a
zero-gap interval will be deleted.

Do you want to preview the controls to be deleted before continuing with
the restore?

Please confirm: Enter 'Y', 'N' or 'abort':
```

Figure 99 ACGRESTORE response example 4

```

ACG is Currently Enabled.
WARNING: When Automatic Code Gapping (ACG) is enabled, then
deleting controls from the ACG control lists may impact the stability of
the CCS7 network. The severity of this impact depends on the current
network traffic load. This command should be used with extreme caution!
All AIN ACG controls in the SMS and SCP control list will be deleted.

Do you want to preview the controls to be deleted before continuing with
the restore?

Please confirm: Enter 'Y', 'N' or 'abort':

```

Enter Y to continue with the restore request and to preview the controls prior to the delete operation. When you enter Y, the controls display on the terminal. You then have one last opportunity to cancel the request to restore the control lists. This display is shown in Figure 100.

Figure 100 ACGRESTORE MAP display dumps

```

The following controls will be deleted:

          A I N   S C P   C O N T R O L   C O D E S
TRANSLATION  GLOBAL TITLE  GAP_DUR  GAP_INT  GAP_DUR  GAP_INT
  TYPE       ADDRESS      (Secs)  (mSecs)  REMAINING  REMAINING
AINTRANS1   613621         16      3000      5          341
AINTRANS1   613722         64      8000      52         1854

DO YOU WANT TO CONTINUE WITH THE GLOBAL RESTORE?
Please confirm ('Yes', 'Y', 'No' or 'N'):

```

When you respond with Yes, the system removes all controls from the control lists specified in the command line and generates the AIN612 log. This display is shown in Figure 101.

Figure 101 ACGRESTORE display during processing

```

The ACGRESTORE request is being processed.

Please use the ACGDISPLAY command to verify that
the controls have been removed. An AIN612 log
will be generated when the controls have been
successfully deleted.

```

6.14 UPDCI increment

UPDCI is used to test and verify AIN Update 'Change status of MWI' messages on the SCP. This is a command interpreter (CI) increment to an existing CI tool message waiting queue (MWQ). MWQ is a existing generic tool on the switch that allows operating company to queue or remove from the queue, messages for message waiting feature subscribers.

AIN Update 'Change status of MWI' messages introduced in NA010 permit the SCP to activate and deactivate the message waiting indicator on a subscriber. UPDCI is introduced in NA12 as an increment of MWQ to simulate Update messages that request 'Change status of MWI'.

6.14.1 When to use UPDCI

UPDCI can be used to queue (or remove from the queue) messages on an Agent, thereby simulating an AIN Update message request to activate or deactivate MWI indication on an Agent.

6.14.2 Commands

The following commands are possible from UPDCI level:

- QUEUE
- DEQ (remove from the queue)
- STATUS

6.14.2.1 QUEUE

The QUEUE command is used to simulate an Update message request for activation of MWI Indication. Invoking the QUEUE command queues a new message for the Agent and activates the specified Indication.

The QUEUE command has the following syntax:

```
>QUEUE <agent> <msrid> <indication-type>
```

where the <agent> is a 7-digit DN (LCC supported by Update 'Change Status of MWI' functionality), the DN in the request. The <msrid> is the message service provider ID (valid MSRIDs are detailed in table MSR TAB). The <indication-type> a stuttered dial tone and lamp are currently supported (stuttered [S] or lamp [L]).

For example:

```
>QUEUE 6211001 1010101010 S
```

6.14.2.2 DEQ

The DEQ command is used to simulate an Update message request for de-activation of MWI Indication. Invoking this command removes from the

queue an existing message queued against the agent and deactivates the specified Indication.

The DEQ command has the following syntax:

>DEQ <agent> <msrid> <indication-type>

where the <agent> is a 7-digit DN (LCC supported by Update 'Change Status of MWI' functionality), the DN in the request. The <msrid> is the message service provider ID (valid MSRIDs are detailed in table MSR TAB). The <indication-type> a stuttered dial tone and lamp are currently supported (stuttered [S] or lamp [L]).

For example:

>DEQ 6211001 1010101010 S

6.14.2.3 STATUS

The STATUS command is used to find out whether any messages have been queued against an agent. Invoking this command lists the details of the messages queued against an Agent. Details include the MSRID and TYPE of MWI Indication that the activation requested.

The STATUS command has the following syntax:

>STATUS <agent>

For example:

>STATUS 6211001

6.14.2.4 How to access UPDCI

The UPDCI level can be accessed from the CI level by entering two commands. The following is an example that illustrates how to access the UPDCI level.

At the CI Level type MWQ, then type UPDCI.

For example:

```
>MWQ
MWQ>
MWQ> UPDCI
UPDCI>
```

6.14.2.5 Notes on UPDCI

The UPDCI level commands reuse the Update MWI functionality in the DMS-100 switch and the processing of these commands are consistent with processing of AIN Update 'Change status of MWI' messages from the SCP.

6.14.2.6 Restrictions and Limitations

No limitations are identified with UPDCI.

6.15 XPMIST

XPMIST allows operating company personnel to capture the messages that occur between the XPMs and the CM during call processing. For ISUP messages, this tool breaks down hex data into text.

7. Other CI commands for LRN-LNP

ATTENTION

LNP is based on AIN Essentials. You must be familiar with AIN before using this document. For a list of relevant AIN documents, please see “About this document”.

7.1 Query local routing number tool

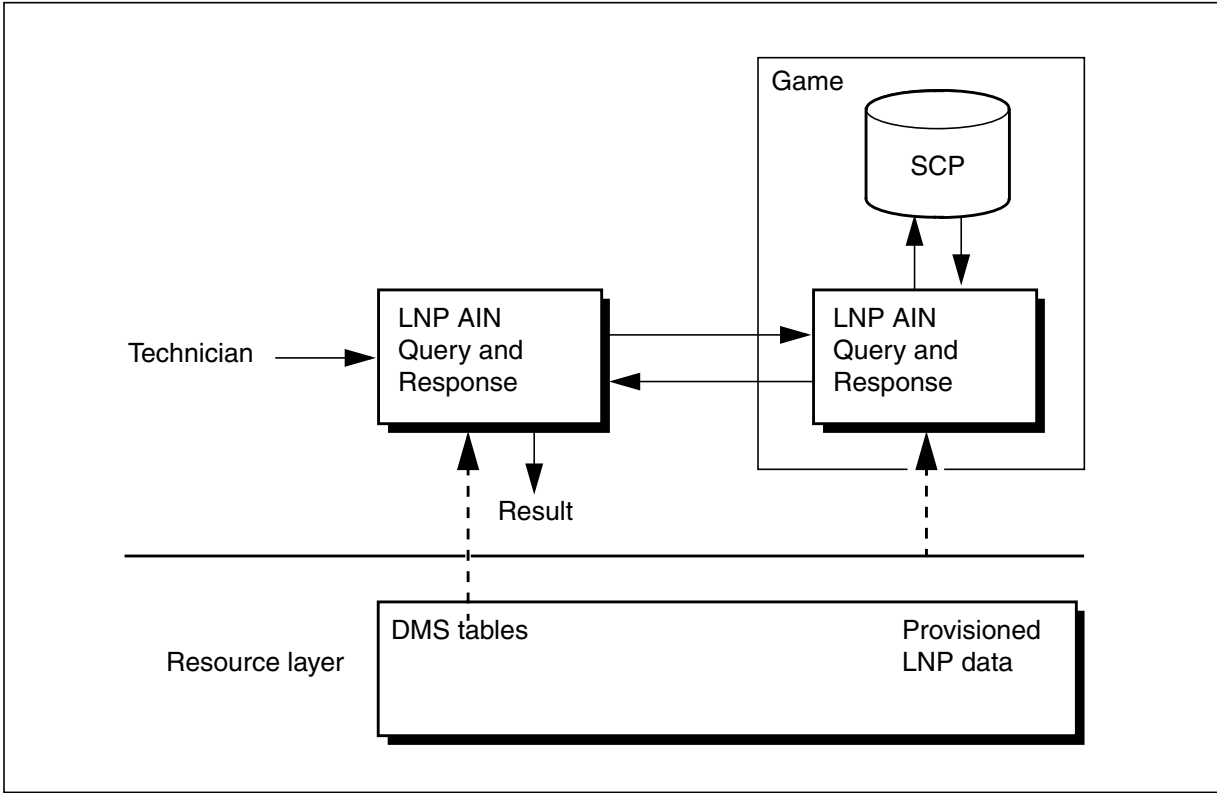
Query local routing number (QLRN) tool is a CI tool that provides the ability to enter a ten digit directory number and launch a query to the SCP as though it were a called number from the SSP. Upon receipt of the SCP response, the LRN routing information of the directory number in the query is presented.

QLRN is a tool for line maintenance. By using TSTQUERY functionality QLRN provides a well-defined interface for querying the SCP and viewing the results.

When Service Provider Portability becomes available there will be many additional reasons for a possible failure of call routing. Current switch-based tools are only valuable for providing information about a line on the switch. Once the network or SCP becomes involved, the provisioning scope is increased and therefore a method to check the data from the SSP is required of the SCP. QLRN allows the viewing of SCP data based on a given Called Party ID or DN.

On invocation of QLRN a query is populated with various parameters. If data is missing in a certain table, QLRN informs the user of the situation and exits. If all information is found, including the destination SCP, the originating switch then queries the SCP and awaits a response. During the interaction with GAME, some OM logs are written. Once the SCP response is received, it is displayed at the terminal. Figure 102 on page 262 shows the QLRN functionality and interactions with LNP.

Figure 102 QLRN Interaction between LNP functional components



7.1.1 Command syntax

QLRN queries the SCP to determine if a number has been ported, and returns the called party ID. Operating company personnel use the command at the CI level of the MAP display. The syntax for the command is

QLRN <called_party_DN> <calling_party_DN>

where

<called_party_DN> is a mandatory parameter representing the Called Party for which we are required to find the routing number in the SCP response

<calling_party_DN> is an optional parameter representing the Calling Party. This parameter replaces the default value taken for UserID from the Home LRN.

If the command encounters problems with either data II (that is, the DN is not in the tables) or SCP access, the system displays an on-screen error message.

Enter abort at any prompt to cancel the command.

QLRN exits automatically on termination.

Two or more users can issue this command simultaneously.

7.1.2 Command syntax examples

The following subsections provide syntax examples (command responses do not appear). For information on responses, see Section "7.1.3. Responses to QLRN" on page 266.

7.1.2.1 Entering QLRN with no parameters

In this example, the operating company personnel enters QLRN without any parameters. The command prompts for both the called and calling party DNs. The command does not make any assumptions about the parameters and prompts for input on both the called number and the calling number.

Figure 103 QLRN example with no parameters

```
CI:
>QLRN
TEN DIGIT CALLED PARTY:
>6135551212
The Home LRN will be used for the CALLING NUMBER, enter otherwise or press
RETURN.
>8192341234

Query sent: 1997/03/18 15:14:25.180 TUE.
...
CI:
>
```

7.1.2.2 Entering QLRN with the called party ID parameter

In this example, the operating company personnel enters QLRN with the called party DN parameter. Because the operating company personnel does not include the calling party DN, the command takes the default value from the master home LRN.

Figure 104 QLRN example with the called party ID parameter

```
CI:
>QLRN 6135551212

Query sent: 1997/03/18 15:14:25.180 TUE.
....
CI:
>
```

7.1.2.3 Entering QLRN with all parameters

In this example, the operating company personnel enters QLRN with both the called party DN and calling party DN parameters.

Figure 105 QLRN example with all parameters

```
CI:
>QLRN 6135551212 5551234567

Query sent: 1997/03/18 15:14:25.180 TUE.
...
CI:
```

7.1.2.4 Entering invalid QLRN parameters during run time

In this example, the operating company personnel enters QLRN with no parameters. During the command run, as the command prompts for called and calling numbers, the operating company personnel enters invalid input.

Figure 106 QLRN example with run time parameters

```

CI:
>QLRN
TEN DIGIT CALLED PARTY:
>$
*** ERROR ***
$
|
TYPE OF TEN DIGIT CALLED PARTY IS DIGIT_TABLE_10
TEN DIGIT CALLED PARTY:
>
TEN DIGIT CALLED PARTY:
>6135558901
The Home LRN will be used for the CALLING NUMBER, enter otherwise or press
RETURN.
TEN DIGIT CALLING NUMBER: 6132910000
>$
*** ERROR ***
$
|
TYPE OF TEN DIGIT CALLING NUMBER IS DIGIT_TABLE_10
TEN DIGIT CALLING NUMBER: 6132910000
>BCD1239090
*** ERROR ***
BCD1239090
|
TYPE OF TEN DIGIT CALLING NUMBER IS DIGIT_TABLE_10
TYPE IS DIGIT_TABLE_10 TABLE OF 10 {1,2,3,4,5,6,7,8,9,0}'S
TEN DIGIT CALLING NUMBER: 6132910000
>

Query sent: 1997/03/18 15:14:25.180 TUE.
...
CI:
>

```

7.1.2.5 Home LRN not found

In this example, the home LRN is not in data ll.

Figure 107 QLRN example with home LRN not found

```
CI:
>QLRN
TEN DIGIT CALLED PARTY:
>6135558901
The Calling Number must be provided since the Home LRN can not be
determined.
TEN DIGIT CALLING NUMBER:
>$
*** ERROR ***
$
|
TYPE OF TEN DIGIT CALLING NUMBER IS DIGIT_TABLE_10
TEN DIGIT CALLING NUMBER:
>6134446789

Query sent: 1997/03/18 15:14:25.180 TUE.
...
CI:
>QLRN 6135551234
The Calling Number must be provided since the Home LRN can not be
determined.
TEN DIGIT CALLING NUMBER:
>6134446789

Query sent: 1997/03/18 15:14:25.180 TUE.
...
CI:
>
```

7.1.3 Responses to QLRN

The system can provide one of many possible responses to QLRN, depending on error conditions, missing data ll, v alid response, an so on. The following subsections describe the responses with examples.

7.1.3.1 Base LNP data II not found in table TRIGGRP

QLRN cannot query because there is no LNP trigger criteria in table TRIGGRP.

System action: notify the user and quit.

User action: verify translations.

Example: Insufficient data II in table TRIGGRP to build a query.

Figure 108 QLRN response: base LNP data II not found in table TRIGGRP

```
CI :
>QLRN 6135551212

Base LNP datafill could not be found in table TRIGGRP.
>
```

7.1.3.2 LNP digit criteria match for <Called Party ID> not found in table TRIGDIG

QLRN cannot query because there is no matching digit criteria in table TRIGDIG.

Note: This message indicates that QLRN, as in CALLP, has searched through available LNP digit criteria in table TRIGGRP and has not found a digit match in table TRIGDIG. There may be matching digit patterns in table TRIGDIG but there are no tuples with digit criteria linked back to an LNP digit criteria record in table TRIGGRP.

System action: Notify the user and quit.

User action: verify translations.

Example: Insufficient data II in table TRIGDIG to build a query.

Figure 109 QLRN response: insufficient data II in table TRIGDIG

```
CI :
>QLRN 6135551212

LNP digit criteria match for 6135551212 could not be found
in table TRIGDIG.
>
```

7.1.3.3 SCP (ACG) traffic overload control is in effect

When ACG traffic overload controls are in effect, sending a query to the database may increase network congestion. However, for maintenance purposes, the system allows queries for testing for the SCP. In such cases, QLRN prompts the operating company personnel and continues with launching the query only upon receiving a positive response.

System action: Await user response.

User action: Input yes or no.

Example: Override ACG controls. When the user chooses “yes”, a response follows depending on the SCP.

Figure 110 QLRN response: override ACG controls

```
CI :
>QLRN 6135551212

*****
SCP (ACG) traffic overload control is in effect.
*****
Do you still want to continue? (Y/N)
>N
>
```

7.1.3.4 The SCP has returned a valid response

The only valid response for QLRN is an LNP Analyze Route response. Upon receipt of a valid response from the SCP, QLRN notifies the operating company personnel and displays the following information:

- routing number
- calling party DN
- of ce CLI
- date and start time
- elapsed time

System action: Display information and quit.

User action: none.

Example: Complete QLRN run with valid response and no optional Calling Party ID.

Figure 111 QLRN response: complete valid response with no optional Calling Party ID

```

>QLRN 6135551212
Query sent: 1997/03/18 15:14:25.180 TUE.
Valid QLRN response received.
Routing Number: 8191234567.
CALLING DN: 6135250000. Office: OFFICE_CLLI.
Elapsed Time (MM:SS:mS): 00:00:380.
>

```

Example: Complete QLRN run with valid response and the optional Calling Party ID.

Figure 112 QLRN response: complete valid response with optional Calling Party ID

```

CI:
>QLRN 6135551212 6138281234

Query sent: 1997/03/18 15:14:25.180 TUE.
Valid QLRN response received.
Routing Number: 8191234567.
CALLING DN: 6138281234. Office: OFFICE_CLLI.
Elapsed Time (MM:SS:mS): 00:00:380.
>

```

7.1.3.5 No response within switch default time-out period

No response has arrived from the SCP within the period that the switch specified (AIN 0.1 T1 timer has expired).

System action: notify the user and quit.

User action: escalate problem to next level of support.

Example: T1 timer expiry.

Figure 113 QLRN response: T1 timer expiry

```

CI:
>QLRN 6135551212

Query sent: 1997/03/18 15:14:25.180 TUE.
No response within switch default time-out period (AIN 0.1
T1 timer has expired).
>

```

7.1.3.6 QLRN has detected a digit criteria

Table TRIGDIG contains a tuple that satisfies the digit criteria for another trigger in addition to LNP. QLRN has detected a digit criteria that matches another trigger at the AIN Information Analyzed TDP.

System action: continue with LNP query.

User action: make sure the non-LNP trigger allows call processing to continue such that the LNP trigger is hit.

Example: Other matching digit criteria.

Figure 114 QLRN response: other matching digit criteria

```
CI:
>QLRN 6135551212

Call will hit AIN Trigger "PODP" prior to LNP.
Ignoring Non-LNP triggers and continuing with LNP trigger
information.

Query sent: 1997/03/18 15:14:25.180 TUE.
...
>
```

7.1.3.7 Invalid QLRN response received

A response other than an LNP Analyze Route message is received from the SCP. The response may be valid for call processing but is indeterminate to QLRN.

System action: notify the user and quit.

User action: Inform next level of support as required.

Example: Invalid response.

Figure 115 QLRN response: Invalid response

```
CI:
>QLRN 6135551212

Query sent: 1997/03/18 15:14:25.180 TUE.
Invalid QLRN response received.
CALLING DN: 6138281234. Office: OFFICE_CLLI.
Elapsed Time (MM:SS:mS): 00:00:380.
>
```


7.1.3.8 LNP SOC option is off

The SOC option for LNP is off. WARNING: LNP SOC OPTION IS OFF. LNP calls do not work. Results may or may not be useful.

System action: notify the user and quit.

User action: none

Example: SOC option warning.

Figure 116 QLRN response: SOC option is off

```
CI:
>QLRN 6135551212

WARNING: LNP SOC OPTION IS OFF.LNP calls will NOT work but
QLRN will attempt to query anyway.

Query sent: 1997/03/18 15:14:25.180 TUE.
...
```

7.1.3.9 Corrupt message from SCP or SCP is not attached

The message sent from the SCP is corrupt or the link between the SSP and the SCP is down.

System action: notify the user and quit.

User action: Inform next level of support as required.

Example: SCP error.

Figure 117 QLRN response: Corrupt message from SCP or SCP is not attached

```
CI:
>QLRN 6135551212

Query sent: 1997/08/13 09:55:12.076 WED.
Error, either received corrupt message from SCP
or SCP is not attached.

...
```

7.1.3.10 SCP returned abort or error message

This occurs when the SCP sends back an abort or error message due to an unrecognizable package type, incorrect or badly structured transaction portion.

System action: notify the user and quit.

User action: inform next level of support as required.

Example: SCP error.

Figure 118 QLRN response: SCP returned abort or error message

```
CI:
>QLRN 6135551212

Query sent: 1997/08/13 09:39:01.110 WED.
Error, SCP returned abort or error message.

>QLRN 4164631001
...
```

7.2 AINTRACE

AINTRACE is supported as described in 297-5161-022, *Advanced Intelligent Network Service Enablers Service Implementation Guide*.

AINTRACE is a CI-based AIN TCAP message tracing tool. AINTRACE traces the messages of selected originating agents through their corresponding DN, LEN, trunk, TID, or LTID.

Figure 119 AINTRACE Command syntax

```
aintrace
AINTRACE:
>select dn 6136671603
>start
Tracing started. Messages will be recorded using AINT 700 logs.
>stop
Tracing stopped. Messages were recorded using AINT 700 logs.
>logutil
LOGUTIL:
>open aint 700
Done.
```

Figure 120 AINTRACE Command syntax (continued)

```

COMDUS11BG      AINT700 MAR10 17:51:57 9200 INFO AINTrace Report

    TCAP Message recorded by AINTrace:
    Time: 99/03/10 17:51:57  Tid:   35  363
    Agent:                HOST 00 1 11 10   DN 6136671603
    Direction:            from SCP or Adjunct (incoming)

        ***** TCAP message in HEX format *****
                E4 24 C7 04 00 00 24 00 E8 1C E9 1A CF 02 01
                00 D1 02 65 01 30 10 8F 07 03 10 09 95 36 01
                99 8A 05 09 00 00 22 02

        ***** TCAP message in TEXT format *****
    TCAP Package Type:      Response
    Origin ID:              NIL
    Respond ID:            00 00 24 00

    Component Sequence
    =====

    COMPONENT:              1

    Component code:         E9
    Component Type:         Invoke (last) Component

    Invoke ID:              1
    Correlation ID:         0

    Operation Code
    Opcode Bytes:           65 01
    Operation Family:       Connection Control
    Operation Name:         Analyze_Route

    Parameter Tag:          30
    ====Parameter Sequence====

    Parameter Id:           8F
    Contents:                03 10 09 95 36 01 99
    CalledPartyID:          9059631099
    Nature of Number:       National (significant) number
    Numbering Plan:         ISDN Numbering Plan
    Odd/Even Indicator:     Even digits

    Parameter Id:           8A
    Contents:                09 00 00 22 02
    AMAslpID:               900000222
COMDUS11BG      AINT700 MAR10 17:51:57 9000 INFO AINTrace Report

```

Figure 121 AINTRACE Command syntax (continued)

```

>back
COMDUS11BG      AINT700 MAR10 17:51:57 9000 INFO AINTrace Report

    TCAP Message recorded by AINTrace:
    Time: 99/03/10 17:51:57  Tid:   35  363
    Agent:                HOST 00 1 11 10   DN 6136671603
    Direction:            from SSP (outgoing)

        ***** TCAP message in HEX format *****
                E2 42 C7 04 00 00 24 00 E8 3A E9 38 CF 01 00
                D1 02 64 03 30 2F BF 35 07 81 05 16 63 76 61
                30 8D 01 00 8F 07 01 10 16 63 36 31 30 9F 34
                01 25 93 07 03 10 16 63 76 61 30 92 07 03 13
                16 63 76 61 30 94 01 00

        ***** TCAP message in TEXT format *****
    TCAP Package Type:      Query with Permission
    Origin ID:              00 00 24 00
    Respond ID:             NIL

    Component Sequence
    =====

    COMPONENT:              1

    Component code:         E9
    Component Type:         Invoke (last) Component

    Invoke ID:              0
    Correlation ID:         256

    Operation Code
    Opcode Bytes:           64 03
    Operation Family:       Request Instructions
    Operation Name:         Info_Analyzed

    Parameter Tag:          30
    =====Parameter Sequence=====

    Parameter Id:           BF 35
    Contents:                81 05 16 63 76 61 30
    UserID:
    DN:                      6136671603
    --{ End of UserID }--

```

Figure 122 AINTRACE Command syntax (continued)

```

        Parameter Id:      8D
        Contents:          00
BearerCapability:        speech

        Parameter Id:      8F
        Contents:          01 10 16 63 36 31 30
CalledPartyID:          6136631303
Nature of Number:       Subscriber number
Numbering Plan:         ISDN Numbering Plan
Odd/Even Indicator:     Even digits

        Parameter Id:      9F 34
        Contents:          25
TriggerCriteriaType:    localNumberPortability

        Parameter Id:      93
        Contents:          03 10 16 63 76 61 30
ChargeNumber:           6136671603
Nature of Number:       ANI of the calling party; national number
Numbering Plan:         ISDN Numbering Plan
Odd/Even Indicator:     Even digits

        Parameter Id:      92
        Contents:          03 13 16 63 76 61 30
CallingPartyID:         6136671603
Nature of Number:       Unique national (significant) number
Numbering Plan:         ISDN Numbering Plan
Presentation Indicator: Presentation allowed
Screen Indicator:       Network provided
Odd/Even Indicator:     Even digits

        Parameter Id:      94
        Contents:          00
ChargePartyStationType: IdentifiedLine - No Special Treatment
>back
Not found.

```

When used with LRN-LNP, the implementation of the LNPTCT query enhancement modifies the trigger criteria type parameter response of the AINTRACE tool. Figure 123 on page 277 shows the modified output when the LNPTCT is active.

Figure 123 on page 277 shows an example of using AINTRACE. The originating call encounters an LNP trigger and sends an LNP query from the SSP to the SCP. The SCP sends a response message containing an LRN to the SSP.

Figure 123 Example of AINTRACE of an LNP call

```

CI:
>logutil
Current MODE setting is: EXTENDED

LOGUTIL:
>aintrace
AINTRACE:
>open aint 700
Done.
Log empty.
>select dn 4164671003
>start
Tracing started. Messages will be recorded using AINT 700 logs.
>stop
Tracing stopped. Messages were recorded using AINT 700 logs.
>open aint 700
Done.
COMD1CDN13AF      AINT700 SEP01 11:18:28 9500 INFO AINTrace Report

    TCAP Message recorded by AINTrace:
    Time: 00/09/01 11:18:28  Tid:  43  14
    Agent:                      HOST 05 1 00 13      DN 4164671003
    Direction:                   from SCP or Adjunct (incoming)

        ***** TCAP message in HEX format *****
                E4 1D C7 04 00 00 01 00 E8 15 E9 13 CF 02 01
                00 D1 02 65 01 30 09 8F 07 03 10 16 63 36 01
                88

        ***** TCAP message in TEXT format *****
    TCAP Package Type:      Response
    Origin ID:              NIL
    Respond ID:             00 00 01 00

    Component Sequence
    =====

    COMPONENT:              1

    Component code:         E9
    Component Type:         Invoke (last) Component

    Invoke ID:              1
    Correlation ID:         0

    Operation Code
    Opcode Bytes:          65 01
    Operation Family:      Connection Control
    Operation Name:        Analyze_Route

```

Figure 123 Example of AINTRACE of an LNP call (Continued)

```

        Parameter Tag:      30
====Parameter Sequence====

        Parameter Id:      8F
        Contents:          03 10 16 63 36 01 88
CalledPartyID:            6136631088
        Nature of Number:  National (significant) number
        Numbering Plan:   ISDN Numbering Plan
        Odd/Even Indicator: Even digits
>back
COMD1CDN13AF      AINT700 SEP01 11:18:28 9300 INFO AINTrace Report

        TCAP Message recorded by AINTrace:
Time: 00/09/01 11:18:28 Tid:  43  14
Agent:                HOST 05 1 00 13      DN 4164671003
Direction:            from SSP (outgoing)

        ***** TCAP message in HEX format *****
                                E2 42 C7 04 00 00 01 00 E8 3A E9 38 CF 01 00
                                D1 02 64 03 30 2F BF 35 07 81 05 14 46 76 01
                                30 8D 01 00 8F 07 03 10 14 46 36 08 30 9F 34
                                01 25 93 07 03 10 14 46 76 01 30 92 07 03 13
                                14 46 76 01 30 94 01 00

        ***** TCAP message in TEXT format *****
TCAP Package Type:      Query with Permission
        Origin ID:       00 00 01 00
        Respond ID:      NIL

Component Sequence
=====

COMPONENT:              1

Component code:         E9
Component Type:         Invoke (last) Component

Invoke ID:              0
Correlation ID:         256

Operation Code
        Opcode Bytes:    64 03
        Operation Family: Request Instructions
        Operation Name:   Info_Analyzed

        Parameter Tag:   30
    
```


Figure 123 Example of AINTRACE of an LNP call (Continued)

```

====Parameter Sequence====

    Parameter Id:      BF 35
    Contents:          81 05 14 46 76 01 30
UserID:
DN:                   4164671003
--{ End of UserID }--

    Parameter Id:      8D
    Contents:          00
BearerCapability:     speech
Parameter Id:         8F
    Contents:          03 10 14 46 36 08 30
CalledPartyID:        4164638003
    Nature of Number:  National (significant) number
    Numbering Plan:   ISDN Numbering Plan
    Odd/Even Indicator: Even digits

    Parameter Id:      9F 34
    Contents:          25
TriggerCriteriaType: localNumberPortability

    Parameter Id:      93
    Contents:          03 10 14 46 76 01 30
ChargeNumber:         4164671003
    Nature of Number:  ANI of the calling party; national number
    Numbering Plan:   ISDN Numbering Plan
    Odd/Even Indicator: Even digits

    Parameter Id:      92
    Contents:          03 13 14 46 76 01 30
CallingPartyID:       4164671003
    Nature of Number:  Unique national (significant) number
    Numbering Plan:   ISDN Numbering Plan
    Presentation Indicator: Presentation allowed
    Screen Indicator:  Network provided
    Odd/Even Indicator: Even digits

    Parameter Id:      94
    Contents:          00
ChargePartyStationType: IdentifiedLine - No Special Treatment

```

If the LNP00200 SOC is activated, and the LNPTCT tuple in table LNPOPTS is set to LNP, the TriggerCriteriaType is encoded as **localNumberPortability**. Otherwise, the TriggerCriteriaType is encoded as **NPANXXXXXX**

7.3 QDN

QDN displays ported-in and ported-out numbers for ported DNs. Figure 124 shows the QDN output for a ported-out number, and Figure 125 shows output for a ported-in number.

Figure 124 Output from QDN shows a ported-out number

```
QDN 6221096
DN:      6221096          (Ported-out)
TYPE: NUMBER ON INTERCEPT PODN
```

Figure 125 Output from QDN for a ported-in DN

```
QDN 6255000
DN:      6255000          (Ported-in)
TYPE: SINGLE PARTY LINE
SNPA: 613   SIG: DT   LNATTIDX: 200
LINE EQUIPMENT NUMBER:      HOST 02 0 05 03
LINE CLASS CODE:           1FR
IBN TYPE: STATION
CUSTGRP:      RESG200      SUBGRP: 0  NCOS: 0
CARDCODE: 6X17AC   GND: N  PADGRP: STDLN  BNV: NL MNO: N
PM NODE NUMBER      :      37
PM TERMINAL NUMBER :      164
OPTIONS:
DGT
RES OPTIONS: NONE
CUSTOMER GROUP OPTIONS:
AIN CDPCODE
OFFICE OPTIONS:
AIN OFCTRIG U3WC
```

Query command output differs for Number Pooling subscribers.

7.4 QLEN

QLEN displays ported-in and ported-out numbers for ported DNs. Figure 126 shows the QLEN output for a ported-out number, and Figure 127 on page 281 shows output for a ported-in number.

Figure 126 Output from QLEN shows a ported-out number

```
QLEN 6221096
TYPE: NUMBER ON INTERCEPT PODN
```

Figure 127 Output from QLEN for a ported-in DN

```

QLEN 6255000
DN:      6255000          (Ported-in)
TYPE: SINGLE PARTY LINE
SNPA: 613   SIG: DT   LNATTIDX: 200
LINE EQUIPMENT NUMBER:      HOST 02 0 05 03
LINE CLASS CODE:           1FR
IBN TYPE: STATION
CUSTGRP:      RESG200      SUBGRP: 0  NCOS: 0
CARDCODE: 6X17AC   GND: N  PADGRP: STDLN  BNV: NL MNO: N
PM NODE NUMBER      :      37
PM TERMINAL NUMBER :      164
OPTIONS:
DGT
RES OPTIONS: NONE
CUSTOMER GROUP OPTIONS:
AIN CDPCODE
OFFICE OPTIONS:
AIN OFCTRIG U3WC

```

Query command output differs for Number Pooling subscribers.

7.5 Test query

TSTQUERY is supported as described in 297-5161-022, *Advanced Intelligent Network Service Enablers Service Implementation Guide*.

This tool allows maintenance personnel to initiate test queries to the service control point (SCP) and receive responses from the SCP. TSTQUERY lets you ensure that the AIN service is fully operational before it processes telephone calls.

To accommodate the new trigger criteria type as part of the TSTQUERY SetMsg command, a new localNumberPortability value has been added to the list see Figure "128. TSTQUERY Command Syntax" on page 282. When this option is set, the output of all trigger criteria types now include localNumberPortability in the list.

Figure 128 TSTQUERY Command Syntax

The command syntax from the MAPCI level is:

```
>MAPCI
>TESTTOOL
>TSTQUERY
```

Setup the query parameters:

```
>SetAppl R01
>SeTrnsp SS7 LNPGT Default
>SetMsg Info_Analyzed
>ListParm
```

A list of available message parameters will be displayed.

Figure 129 TstQuery Call Parameters Example

Setup call parameters:

```
.
>TriggerCriteriaType LocalNumberPortability
>CallingPartyID 3 1 0 3 61366331001
>CalledPartyID 3 1 6136639021
>ChargeNumber 3 1 6136630000
```

Figure 130 Verifying TstQuery Call Parameters

Verify call parameters:

.

>seeparm all

Application: R01
Transport: SS7
Gtt Name: LNPGT
Gtt Source: Default
Message: Info_Analyzed

WARNING - The ACGEncountered parameter may be added to any outgoing query by the ACG Database. Use the ACGDISPLAY command in the AINCI directory to list active ACG controls.

CalledPartyID: 6136639021
Nature of Number: National (significant) number
Numbering Plan: ISDN Numbering Plan
TriggerCriteriaType: localNumberPortability
ChargeNumber: 6136630000
Nature of Number: ANI of the calling party; national number
Numbering Plan: ISDN Numbering Plan
CallingPartyID: 6136633101
Nature of Number: Unique national (significant) number
Numbering Plan: ISDN Numbering Plan
Presentation Indicator: Presentation allowed
Screen Indicator: Network provided

Figure 131 Launching a test query

```
Launch a test query:  
  
>send  
  
Transaction ID:      65  
Elapsed Time Between Query And Response:  
0 minute(s) 0 second(s) 564 millisecond(s)  
  
SCP Response Message: Analyze_Route  
Called Party ID:    6136631099  
Nature of Number:  National (signi cant) number  
Numbering Plan:    ISDN Numbering Plan
```

AIN logs AIN600 and AIN601 will also be generated by the DMS log subsystem. See Figure "132. Example of AIN600 log" on page 284, and Figure "132. Example of AIN601 log (Continued)" on page 285 for details.

Figure 132 Example of AIN600 log

```
Ofc_Name AIN600 JAN14 15:01:45 2234 INFO Test Query Attempt  
User Name:          CMAP9  
SessionID:          16554  
Application:        R01  
T1 Timer:           3  
Transport:          SS7  
    Gtt Name: LNP GT  
    Gtt Source:      Default  
Message:            Info_Analyzed  
CalledPartyID:      6136639021  
    Nature of Number: National (significant) number  
    Numbering Plan:  ISDN Numbering Plan  
TriggerCriteriaType: localNumberPortability  
ChargeNumber:       6136631234  
    Nature of Number: ANI of the calling party; national number  
    Numbering Plan:  ISDN Numbering Plan  
CallingPartyID:     6136631001  
    Nature of Number: Unique national (significant) number  
    Numbering Plan:  ISDN Numbering Plan  
Presentation Indicator: Presentation allowed  
Screen Indicator:   Network provided
```

Figure 132 Example of AIN601 log (Continued)

```
.Ofc_Name AIN601 JAN14 15:01:45 2837 INFO Test Query Response
  User Name: User_terminal
  SessionID:          16554
  Elapsed Time Between Query And Response:
    0 minute(s) 0 second(s) 132 millisecond(s)
  Conversation:      No
  Trans ID:          66
  Far End Trans ID: 4261281277
  Corr ID:           1
  SCP Response Message: Analyze_Route
  Called Party ID:   6136631099
    Nature of Number: National (significant) number
    Numbering Plan:   ISDN Numbering Plan
```

7.6 QPDN

QPDN is used to list all ported-in DNs, to list all ported-out DNs, or to list both ported-in and ported-out DNs. It can also generate a summary of the totals which include the number of ported-in, ported-out DNs or both; and the number of native NPANXX, non-native NPANXX or both.

Query command output differs for Number Pooling subscribers.

Note: QPDN may not be executed when SOC option LNP00200 is IDLE.

7.6.1 QPDN syntax

QPDN accepts two mandatory parameters. The first parameter specifies what to be listed - all ported-in DNs, all ported-out DNs, all ported DNs, or ported DNs of a NPANXX. The second parameter specifies the format of the listing - detail or summary. The syntax of QPDN is:

```
QPDN <output_type> {I,O,B,S<NPANXX> 6-digits} <report_type>
{D,T}
```

where

- O** - ported-out DNs
- I** - ported-in DNs
- B** - both ported-in and ported-out DNs
- S** - ported DNs of a NPANXX
- D** - list the DNs

T - list the total(s) only

QPDN prompts for parameters until the values of the parameters match the values shown in Table 3.

Table 3 QPDN parameter definitions

Parameter	Value	Definition
list_type	I,O,B	I - ported in
	S <NPANXX> STRING	O - ported out
		B - both ported-in and ported-out
		S- ported DN of a NPANXX
		NPANXX - area code + office code
report_type	D, T	D -detail
		T- Totals only

7.6.2 QPDN warnings

Warning responses from QPDN are as follows:

- It may take a long time to execute the request. Do you want to continue? Please con rm (“YES”, “Y”, “NO”, or “N”):
Used to warn the user that it may take a number of minutes to execute the request. Type “Y” to continue and “N” to abort.
- NPANXX should be 6 digits in North America.
The number of digits does not match. The system prompts for a valid NPANXX.
- ERROR: Invalid NPANXX entered.
The NPANXX cannot be found in table TOFCNAME. The system prompts for a valid NPANXX.
- ERROR: UNABLE TO READ DN FROM DN TABLES
Occurs on a SWERR and terminate QPDN. Check table DNINV or DNROUTE.
- ERROR: CANNOT GET NPANXX FROM TABLE TOFCNAME
Occurs on a SWERR and terminate QPDN. Check table TOFCNAME.

7.6.3 Using QPDN to list all ported-in DNs

User executes “QPDN I D”. QPDN displays a warning message and you type “Y” to continue the execution. QPDN nds and lists the ported-in DNs, then prints the total of non-native NPANXXs and the total of ported-in directory numbers.

Figure 133 on page 287 shows an example of using QPDN to list all ported-in DNs.

Figure 133 Using QPDN to list all ported-in DNs

```
> QPDN I D
Warning: It may take a long time to execute the request. Do
you want to continue ?
Please confirm ("YES", "Y", "NO", or "N"): Y
-----
Ported in numbers:
4164671001
....
4164679999
4164681003
4164681005
Total number of non-native NPANXX: 2
Total number of ported-in numbers is: 1000
```

7.6.4 Using QPDN to list all ported-out DNs

User executes: "QPDN O D". QPDN displays a warning message and the user types "Y" to continue the execution. QPDN nds and lists the ported-out DNs then prints the total number of native NPANXX(s) and the total number of ported-out directory numbers.

Figure 134 shows an example of using QPDN to list all ported-out DNs.

Figure 134 Using QPDN to list all ported-out DNs

```
> QPDN O D
Warning: It may take a long time to execute the request. Do
you want to continue ?
Please confirm ("YES", "Y", "NO", or "N"): Y
-----
Ported out numbers:
6136631001
6136631002
....
6136779999
Total number of native NPANXX is: 2
Total number of ported out numbers is: 5000
```

7.6.5 Using QPDN to list totals of ported-out DNs and native NPANXXs

User executes: "QPDN O T". QPDN displays a warning message and the user types "Y" to continue the execution. QPDN counts all the native NPANXXs and all the native ported-out directory numbers.

Figure 135 shows an example of using QPDN to list totals of ported-out DNs and native NPANXXs.

Figure 135 Using QPDN to show totals of ported-out DNs and NPANXXs

```
> QPDN O T
Warning:
It may take a long time to execute the request.
Do you want to continue ?
Please confirm ("YES", "Y", "NO", or "N"): Y
-----
Total number of native NPANXX is: 2
Total number of ported out numbers is: 1000
```

8. Trouble locating for AIN

**CAUTION****Possible loss of service**

The information and procedures in this chapter are for experienced maintenance personnel only. You must know how to use tools for troubleshooting translations problems. You must also know how to use and interpret the reporting subsystems for logs and OMs.

This chapter contains the troubleshooting procedures for AIN Service Enablers. This chapter limits these procedures to those that have a high probability of interrupting service.

The following tools are useful in investigating and troubleshooting AIN service problems:

- ACGRESTORE
- AINTRACE
- CALLTRAK
- DISPCALL
- TRAVER
- TSTQuery
- XPMIST

8.1 Advanced trouble locating procedures task list

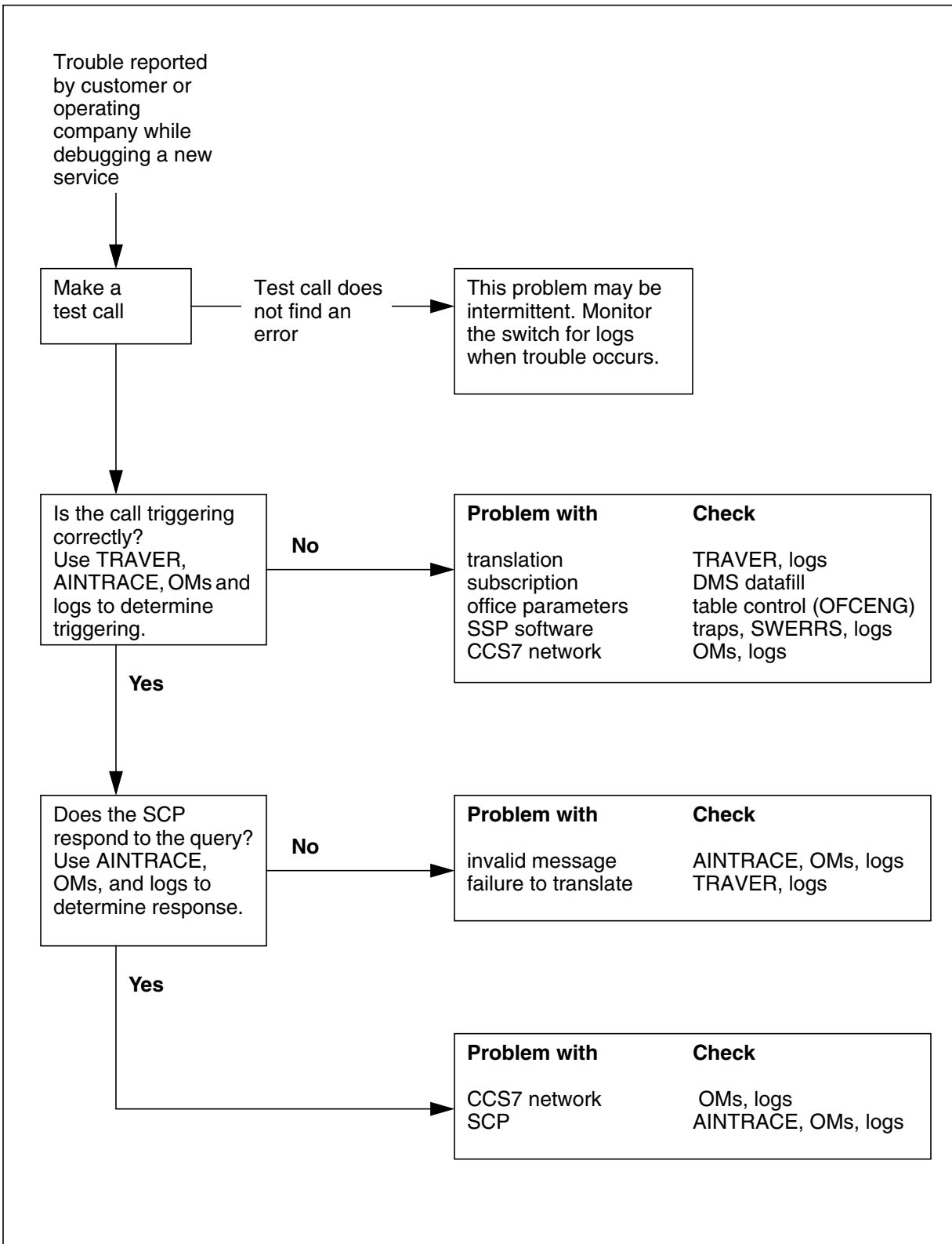
The tasks exclusively assigned to more experienced operating company personnel for AIN include the following:

- Verify data ll using translation v eri cation (TRA VER).
- Determine when data ll error prevents AIN call completion; interpret log messages.

- Use command interpreter (CI) utility AINTRACE to monitor AIN messages and to see when the service control point (SCP) and the service switching point (SSP) are sending messages; check TCAP100 logs.
- Use the C7TU test utility to monitor messages going over links to database and back, checking to monitor and interpret messages from the SSP and SCP.
- Error detection

Figure 136 on page 291 summarizes the overall approach to AIN trouble locating and clearing.

Figure 136 Quick reference for AIN trouble locating and clearing



8.2 Verify data II using TRA VER

The TRAVER command simulates a call and displays the translation and routing tables accessed by the call. When calls should go to treatment (route, tone, or announcement), or do not follow their intended route, TRAVER enables you to determine how the call routes by displaying the following information:

- the tables for translating and routing a call
- each element of the route list with digits out-pulsed
- each alternate conditional route

Samples of TRAVER for AIN calls are contained in the *North American DMS-100 Translations Guide* and in this document.

8.3 AINTRACE utility

The AINTRACE utility is a tool that lets a user display AIN Service Enablers CCS7 TCAP messages to or from an SCP that is associated with a particular call. AIN messages are captured for a particular line or by trunk. The TCAP messages are captured in hex along with other related information, stored in a buffer and then displayed in hex, text, or both these formats.

8.4 C7TU test utility

Use the C7TU test utility to monitor messages going over links to the database and back. C7TU provides testing of CCS7 features. Use C7TU for troubleshooting, monitoring, and interpretation of messages from the SSP and SCP. Refer to the *Commands Reference Manual* and to *C7TU User Guide Technical Assistance Manual* for additional information.



CAUTION

Possible loss of service

Use the C7TU tool with caution. The C7TU tool has a real-time impact on any node.

Use logs to identify problems and to provide information for troubleshooting.

8.5 Error detection

The SSP checks and validates each message that the SCP database sends. Checking detect protocol and application errors.

Incorrect transaction capabilities application part (TCAP) messages cause protocol errors. Either TCAP or the application process detects protocol errors. For example, unrecognized package type or component type, unrecognized

operation, and unrecognized responding transaction ID or correlation ID are protocol errors.

Violations of application process procedures or unavailability of network resources cause application errors. For example, unexpected message sequence, erroneous data value, unavailable network resource, or T1 timer time-out are application errors.

DMS-100 implementation has some rules and basic assumptions regarding the type of error message returned to the database.

8.5.1 Protocol error handling

The system sends the ABORT package with the appropriate abort cause value when the base TCAP or the AIN application detects the following protocol errors:

- transaction portion
- unrecognized transaction ID
- AIN does not use the transaction ID or the transaction ID is not in the correct state to receive the SCP message (the switch reports the value only when it is in a conversation package)
- unrecognized package type
- received package type is not in the allowed range, for example, it is not query, response, abort, conversation with or without permission, or unidirectional (the switch sends the value only when it finds a transaction ID)

The system sends the REJECT message with the appropriate problem code when the AIN application detects the following protocol errors:

- General
 - Unrecognized component type. The SSP receives an undefined or unexpected component type.
 - Incorrect component. This problem code is used to report missing mandatory parameters and is sent for the following errors
 - a message has too many components (more than four) or too many parameters (more than 37)
 - a message has a duplicate component
 - a package contains both routing and play announcement components
 - the response package has invoke components, but there is neither a routing component or play announcement component in the package
 - the conversation message has more than one component (play announcement and collect digits)
 - the Return Error or Reject component is not the only component in the message
- Invoke
 - Unrecognized operation code. For any Invoke component, the system checks the operation code against the expected operation codes at that state. When the operation code is not the expected code, the system sends a problem code in the reject message.
 - Incorrect parameter. This problem code is sent for the following errors
 - duplicate parameter or unexpected or unrecognized parameter
 - the originator sends parameters in a message a set rather than a sequence
 - Missing mandatory parameter: A received message has one or more mandatory parameters missing

The system sends the above Reject message in a response package when the error is in a conversation or query package and the transaction is still open.

When the system detects any of the above protocol errors, the switch routes the call to treatment.

8.5.2 Application error handling

The system detects application errors at the decoder and reports these errors to the SCP or adjunct.

8.5.3 Error detection at the decoded SCP

The AIN decoder looks for protocol and application errors when it decodes an SCP or adjunct response message.

All errors are fatal or nonfatal. In AIN, they are

- fatal protocol errors—reported to the SCP or adjunct only for open transactions
- fatal application errors—reported to the SCP or adjunct for both open and closed transactions
- nonfatal protocol errors—not reported to the SCP or adjunct
- nonfatal application errors—reported only when an open transaction needs to be closed

8.5.4 Protocol errors

Incorrect TCAP messages cause Protocol errors. The protocol errors that the AIN decoder detects are as follows. All of these errors are fatal. The AIN decoder detects errors in the following order:

- Unrecognized Correlation ID. The Received Correlation ID does not reflect an existing Invoke ID that the SSP assigned.
- Unrecognized Operation Code. The Operation Code in the Received Component is not an AIN SCP or adjunct operation.
- Incorrect Parameter. Parameters in a message are in a set rather than in a sequence.
- Missing Mandatory Parameter. A received message has one or more mandatory parameters missing.

8.5.5 Application errors

The switch associates application errors with a received message that violates the requirements for sending the message, and are of a non-protocol nature. The switch detects errors in the following order:

- Response Message Timer Expired. Given that the SSP sends a message, the SSP response message timer (timer T1) expires before it cancels. This error is always fatal and may result from the of ce parameter AIN_T1_TIMER being set too low. Its default value is 3 s.
- Without Permission to Release Package Type Received. The SSP receives a Query/Conversation Without Permission to Release Package type from the SCP or adjunct. This error is fatal.

- Unexpected Communication. Unexpected Communication errors may be fatal or nonfatal.
 - fatal errors
 - The SSP receives an SCP or adjunct message in a TCAP package that is not allowed for that message.
 - The SSP receives an SCP or adjunct message in a response TCAP package. The message is valid, but the SSP expects a conversation package.
 - nonfatal error

The SSP expects to receive an SCP or adjunct message, in the form of a response package, from the SCP. Instead, the SSP receives a conversation TCAP package from the SCP. Although this is an error, the call still continues to process.
- Unexpected Message. An Unexpected Message occurs when one of the following conditions is true.
 - the SSP receives an SCP or adjunct response message that is not allowed in reply to the previously sent SSP query message
 - the received TCAP package contains more than one call-related message
 - the received TCAP package contains more than one message of the same type

This error is always fatal.
- Unexpected Message Sequence. This error occurs as a result of one of the following:
 - The SSP receives a multi-component response package but the second, third, and fourth components are not ACG and Send_Notification operation codes. This error is fatal.
 - The SSP receives a multi-component conversation package but the second, third, and fourth components are not ACG, Update_Request, and RRBCME operation codes. This error is fatal.
- Unexpected Parameter Sequence. The SSP receives an SCP, or adjunct message and the parameters in that message do not appear in the proper sequence. This error is fatal.
- Erroneous Data Value. The SSP receives an SCP or adjunct response message containing an invalid parameter, which, when dropped, does not

allow the operation to be performed. The parameter with the error may be mandatory or optional. This error can be fatal or nonfatal.

- **Missing Conditional Parameter.** The SSP receives an SCP or adjunct message; a missing conditional parameter in the response message prevents processing of the message. This error is fatal.

8.6 Reporting to the SCP or adjunct

Protocol errors, application errors, and the caller abandon information are reported to the SCP or adjunct.

8.6.1 Protocol errors

When the AIN decoder detects a protocol errors in a TCAP message that is in a query or a conversation package, then the decoder reports the error to the SCP or adjunct in a response package with the error specified as a problem code in the Reject component.

The decoder does not report to the SCP or adjunct any protocol errors that it detects in a response, abort, or unidirectional package.

8.6.2 Application errors

When the switch detects an application error (other than the Response Message Timer Expired) in a message in a query or conversation TCAP package, the switch sends an error message in a response TCAP package with a Return Error component.

When the switch receives an application error (other than the Response Message Timer Expired) in a message in a response TCAP package, the switch sends the error message to the SCP or adjunct in a unidirectional TCAP package with an Invoke component.

When the Response Message Timer expires, the system always sends the error message in a unidirectional package with an Invoke component.

Application error types may have the following values:

- erroneousDataValue
- missingConditionalParameter
- responseMessageTimerExpired
- unexpectedCommunication
- unexpectedMessage
- unexpectedMessageSequence
- unexpectedParameterSequence

8.6.3 Caller abandon information

When the caller abandoned the call, the SSP replies to the SCP or adjunct only on the following two occasions:


- when the SSP receives a Send_To_Resource in a conversation package
- when the SSP receives a Send_Notification in a response package

Other messages are treated as follows:

- The SSP discards all other call-related messages
- The SSP decodes and processes non-call related messages (Monitor_For_Change and Update_Request) received in a query package.
- The SSP discards a Update_Request received in a conversation package.

8.7 AIN advanced trouble locating procedures

This section provides advanced troubleshooting procedures that maintenance personnel can use as a first line of support.



CAUTION
Possible loss of service

The information and procedures in this chapter are for experienced operating company personnel only. Information and procedures assume a knowledge of the tools used to troubleshoot translations problems, and of the reporting subsystems for logs and OMs.

8.7.1 Task list

The following table provides the names of all the procedures in this document. To find the appropriate trouble locating procedure, look for the name in the left column and go to the page number listed in the right column.

Procedure	Page
"Calls to AIN trigger do not complete"	page 299

This chapter contains procedures for locating and clearing troubles in AIN. For each trouble condition, there is a procedure that contains

- explanatory and context-setting information
- summary flowchart
- step-action instructions

8.7.1.1 Explanatory and context-setting information

In each procedure, the sections titled “Application,” “Definition,” and “Action” contain important explanatory notes and context-setting information. Read these sections before you try to clear the trouble. The section titled “Common procedures” lists the names of common procedures that you may be asked to perform as you follow the step-action instructions. Go to these common procedures only when directed to do so.

8.7.1.2 Summary of workflow

The workflow is only a summary of the main actions, decision points, and possible paths you can take. Do not use the summary of workflow to perform the procedure. Instead, use it to preview what you will be doing and to help prepare for it. For example, when these instructions involve another office, advise that office before starting the step-action instructions.

8.7.1.3 Step-action instructions

The step-action instructions tell you how to locate and clear a trouble. Normally, you perform the steps in order, but you may be directed to return to a previous step and repeat a sequence. The successful completion of a step may depend on previous steps; therefore, always perform the steps in the order specified.

The step-action instructions provide the command syntax and machine output you use or see while performing this procedure. For help on DMS commands or output (for example, problems logging into a utility), see *Commands Reference Manual*, 297-1001-822.

8.8 Calls to AIN trigger do not complete

8.8.1 Application

Use this procedure to locate and correct the difficulty being reported by the subscriber who cannot complete outgoing AIN calls.



CAUTION

Possible loss of service

This procedure is for experienced operating company personnel only. Do not use this procedure when you do not have knowledge and understanding of AIN and LRN-LNP tools, data file procedures, translations, and DMS reporting subsystems for logs and OMs.

For the purposes of trouble locating, treat the following triggers as originating triggers:

- Off-Hook Immediate (OFFHKIMM)
- Off-Hook Delay (OFFHKDEL)

- Shared Interface Trunk (INTEROFF)
- Automatic Flexible Routing (AFR)
- Public Office Dialing Plan 3 to 10 (PODP)
- N11
- Customized Dial Plan (CDPCODE)

8.8.2 Definition

This condition means that the subscriber cannot complete outgoing calls using the features of AIN software and the SCP database to query for routing and billing information.

Possible causes of this problem include

- congestion in the SSP
- incorrect or incomplete data II (translations)
- inability of the subscriber to activate AIN features
- protocol or application errors caused by incorrect TCAP messages
- SCP data II errors

When the SCP does not reply within a certain period of time, the system invokes network time-out and sends the call to AIN normal treatment.

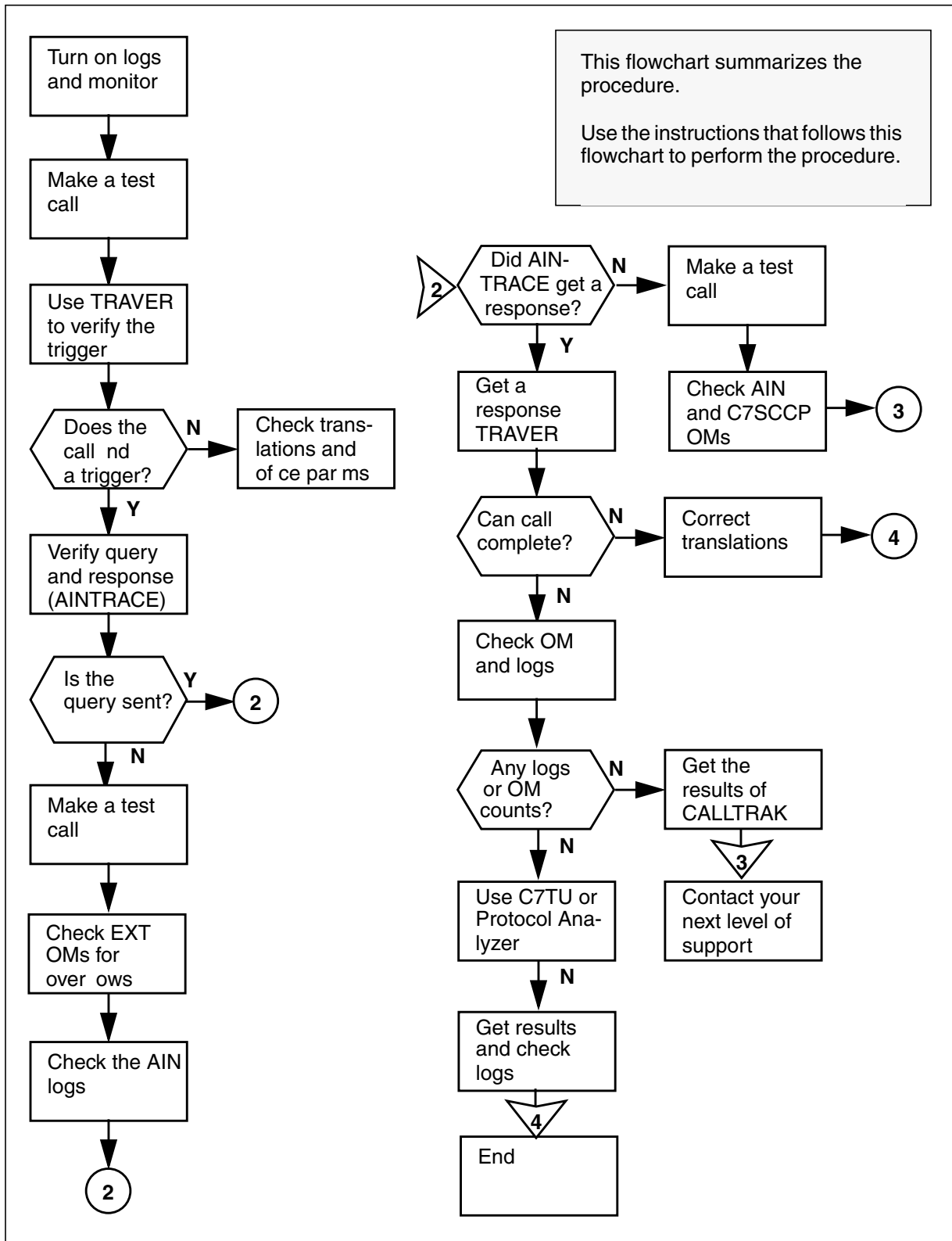
8.8.3 Common procedures

None.

8.8.4 Action

This procedure contains a summary flowchart and a list of specific steps for checking a “Cannot call out” trouble report for an AIN subscriber. Use the flowchart as an overview of the procedure. Follow the specific steps to perform the procedure.

Figure 137 Summary of Calls to AIN trigger do not complete



Procedure 1 Calls to AIN trigger do not complete

Step Action and response

- 1 Turn on all LNP, AIN, AUD, and TCAP logs and monitor these logs throughout this procedure.
- 2 Make a test call.
When the call does not complete, do step 3 .
When the call does complete, do step 5 .
- 3 Use TRAVER to verify that the call encounters the AIN trigger.
When the TRAVER does not encounter the trigger, do step 4 .
When the TRAVER indicates that the call would encounter the trigger, do step 5 .
- 4 Check translations and AIN of ce par ameters.
- 5 Use AINTRACE to verify when a query is sent and a response returned.
When a query is not sent, do step 6 .
When a query is sent, do step 10 .
- 6 Make a test call.
- 7 Check the EXT OMs for over o ws.
- 8 Check the AIN logs.
- 9 Check the SS7 network to ensure that the following are operating without troubles: linksets, routesets, and AIN subsystem.
- 10 Check when the system received a response.
When the system did not receive a response, do step 11 .
When the system receives a response, do step 13 .
- 11 Make a test call.
- 12 Check AIN OMs for T1 time-out. Check C7CSSP OMs for UDTS messages.
Go to step 20 .
- 13 Use TRAVER to obtain a response TRAVER with the information received in the AINTRACE response at step 5 .
When the response TRAVER indicates that the call can complete, do step 14 .
When the response TRAVER indicates that the call cannot complete, do step 19 .

- 14 Make a test call.
- 15 Check AIN OMs for invalid responses. Also check all logs.
When the system does not increment OMs and does not generate logs, do step 16 .
When the system increments OMs and generate logs, do step 17 .
- 16 Use CALLTRAK to trace the calls in the DMS-100 switch and capture the results.
Go to step 20 .
- 17 Make a test call.
- 18 Use C7TU or the Protocol Analyzer to capture any error messages, and check the logs.
Go to step 21 .
- 19 Correct translations.
Go to step 21 .
- 20 Contact the next level of support.
- 21 You have completed this procedure.

9. Logs for AIN

The following sections contain logs used by AIN.

AIN300

Explanation

The Advanced Intelligent Network (AIN) subsystem generates log report AIN300. This report appears when the service control point (SCP) control list overflows. The SCP control list overflows when the subsystem attempts to add a control to the SCP list that is full. The subsystem does not add the control and the service switching point (SSP) does not operate according to the SCP request. The degree of seriousness of the overflow condition depends on the current network condition.

The subsystem generates Log AIN300 one time in any five minute period. The AIN in the following report lists the number of attempts to generate this log in the UNREPORTED_OVERFLOW field.

This log report is for AIN Essentials and up.

Format

The log report format for AIN300 is as follows:

```
office * AIN300 mmmdd hh:mm:ss seqno TBL ACG/SOCC SCP
Control List Overflow
  AIN ACG SCP Control List Overflow
  ACTION: Analyze list for stale controls.
  GTA: <>          TT_Name: <>
  UNREPORTED_OVERFLOW: <>
```

Note: The subsystem modifies Log AIN300 in NA008 so that this log does not refer to AIN 0.1 on the second line.

Example

An example of log report AIN300 follows:

```
COMR05AB * AIN300 Feb01 14:25:44 1400 TBL ACG/SOCC SCP
Control List Overflow
  AIN ACG SCP Control List Overflow
  ACTION: Analyze list for stale controls.
  GTA: 613722          TT_Name: AINJAZZ
  UNREPORTED_OVERFLOW: 4
```

Field descriptions

The following table describes each field in the log report:

Field	Value	Description
GTA	NPANXXXXXX	The Global Title Address. indicates the call or charge number on which to gap queries.
TT_Name	As entered in table C7GTTYPE, field GTTNAME	Translation type name can indicate a service, a group of services, or a software release. The TT_Name depends on entries.
UNREPORTED_OVERFLOW	numeric	Indicates the number of attempts made to generate this log report from the generation of the last report of this type. The ACG application suppresses attempts to generate this report within five minutes of a report that the subsystem. generated earlier.

Action

Analyze the SCP control list for old controls. To delete any old controls, use the ACGDELETE command in the CI AINCI directory.

Associated OM registers

Group AINACG, Register SCPOVLDO

Additional information

Use table LOGCLASS to suppress generation of this report. Do not use table LOGCLASS to report thresholding of this log. The ACG application performs the thresholding.

AIN301

Explanation

The advanced intelligent network (AIN) subsystem generates log AIN301 when the SMS control list overflows. The SMS control list overflows when an attempt is made to add a control when the list is full. The system does not add the control and the SSP does not behave according to the SMS request. The condition of the network at the time of the request, determines the severity of this condition.

The system generates log AIN301 once per 5-min period. Log AIN301 lists the number of attempts to generate this log since the last report. This information appears in the UNREPORTED_OVERFLOW field.

Log AIN301 applies to AIN Essentials and subsequent releases.

Format

The format for log AIN301 is illustrated in the following figure.

Format for log AIN301

```
office * AIN301 mmmdd hh:mm:ss seqno TBL ACG/SOCC SMS  
Control List Overflow  
    AIN ACG SMS Control List Overflow  
    ACTION: Analyze list for stale controls.  
    GTA: <>          TT_Name: <>  
    UNREPORTED_OVERFLOW: <>
```

Note: Log AIN301 no longer refers to AIN Essentials on the second line in NA008.

Example

An example output for log AIN301 is illustrated in the following figure.

Example output for log AIN301

```
COMR05AB * AIN301 Feb01 14:25:44 1400 TBL ACG/SOCC SMS  
Control List Overflow  
    AIN ACG SMS Control List Overflow  
    ACTION: Analyze list for stale controls.  
    GTA: 613722          TT_Name: AINJAZZ  
    UNREPORTED_OVERFLOW: 4
```


Field descriptions

The following table describes each field in log AIN301.

Field descriptions for log AIN301

Field	Value	Description
GTA	NPANXXXXXX	Global title address indicates the call or charge number to gap queries on.
TT_Name	As entered in table C7GTTYPE, field GTTNAME	Translation type name can indicate a service, a group of services, or a software release. The type depends on the entry.
UNREPORTED_ OVERFLOWS	numeric	This field indicates the number of attempts made to generate this log report. The measurement is made since the generation of the last report of this type. The ACG application suppresses attempts to generate this report within 5 min of an earlier report.

Action

Analyze the SMS control list for stale controls. Use command ACGDELETE in the CI AINCI directory to delete any stale controls.

Associated OM registers

Group AINACG, register SMSOVLDO.

Additional information

Use table LOGCLASS to suppress generation of this report. Do not use table LOGCLASS to perform threshold reports for log AIN301, because the ACG application performs the thresholding.

AIN302

Explanation

The advanced intelligent network (AIN) subsystem generates log AIN302 when the SSP receives an ACG message that contains a translation type (TT), that is not currently data lled in table C7GTTYPE for the SSP .

Log AIN302 is generated, at most, once in any 5-min period. On the subsequent report, the number of attempts to generate this log since the previous report is listed in the SUPPRESSED eld.

Log AIN302 pertains to AIN Essentials and subsequent releases.

Format

The format for log AIN302 is illustrated in the following gure.

Format for log AIN302

```
office * AIN302 mmmdd hh:mm:ss seqno TBL Unknown TT
  AIN ACG Unknown Translation Type number.
  ACTION: Check table C7GTTYPE for the specified TT number.
  List Type: <>
  GTA: <>           TT: <>
  SUPPRESSED: <>
```

Note: Log AIN302 is modi ed in NA008 so that it no longer refers to AIN Essentials on the second line.

Example

An example output for log AIN302 is illustrated in the following gure.

Example output for log AIN302

```
COMR05AB * AIN302 Feb01 14:29:08 0600 TBL Unknown TT
  AIN ACG Unknown Translation Type number.
  ACTION: Check table C7GTTYPE for the specified TT
  number.
  List Type: SCP
  GTA: 613722           TT: 6
  SUPPRESSED: 0
```

Field descriptions

The following table explains each of the fields in the log AIN302.

Field descriptions for log AIN302

Field	Value	Description
List_Type	SCP or SMS	Indicates: <ul style="list-style-type: none"> • SCP control list for automatic controls • SMS control list for manual controls
GTA	NPANXXXXXX	Global title address. Indicates the called or charge number to gap queries.
TT	As entered in table C7GTTYPE, field GTNUM	Translation type. Can indicate a service, a group of services, or a software release, depending on datafill.
SUPPRESSED	numeric	Indicates the number of attempts that were made to generate this log report since the last report of this type was generated. Attempts to generate this report within 5 min of a previously generated report are suppressed by the ACG application.

Action

Check table C7GTTYPE to determine whether the TT number is present and whether it should be included in the table.

Associated OM registers

None

Additional information

Table LOGCLASS suppresses generation of log AIN302. Do not use table LOGCLASS to threshold reporting of log AIN302, because thresholding is performed by the ACG application.

AIN303

Explanation

The Advanced Intelligent Network (AIN) subsystem generates AIN303 when the SSP receives an ACG message. The ACG work queue must already be full for this log to generate.

The system generates this log one time in any 5-min period. The following report lists the number of attempts to generate this log from the previous report in the SUPPRESSED eld.

Format

The following format is for log report AIN303:

```
office * AIN303 mmmdd hh:mm:ss seqno TBL ACG/SOCC_Queue
  AIN ACG Work Queue Overflow
  ACTION: Increase processor time for ACG.
  SUPPRESSED: < >
```

Note: The system modifies Log AIN303 in N A008 so that it no longer refers to AIN 0.1 on the second line.

Example

An example of log report AIN303 follows:

```
COMR05AB * AIN303 Feb01 14:29:08 0600 TBL ACG/SOCC_Queue
  AIN ACG Work Queue Overflow
  ACTION: Increase processor time for ACG.
  SUPPRESSED: 2
```

Field descriptions

The following table describes each eld in the log report:

Field	Value	Description
SUPPRESSED	numeric	Indicates the number of attempts to generate this log report from the generation of the last report of this type. The ACG application suppresses attempts to generate this report within 5 min of an earlier generated report.

Action

The ACG work queue runs at SOS Scheduler class AUXCP. Use of ce parameter AUXCP_CPU_SHARE in table OFCENG to set the time slice available to AUXCP. Use caution if you change this parameter, because many other of ce applications use A UXCP.

Associated OM registers

There are no associated OM registers.

Additional information

Use table LOGCLASS to suppress generation of this report. Do not use table LOGCLASS to perform a threshold report for this log, because the ACG application performs thresholding.

AIN304

Explanation

The Advanced Intelligent Network (AIN) subsystem generates log AIN304 when the SSP receives an ACG message during an image dump.

The system generates this log one time in any 15-min period. The following report lists the number of attempts to generate this log from the previous report in the SUPPRESSED eld.

Format

The format for log report AIN304 follows:

```
office * AIN304 mmmdd hh:mm:ss seqno FAIL ACG control not added
      AIN ACG inoperative during image dumps.
      ACTION: None.
      SUPPRESSED: <>
```

Example

An example of log report AIN304 follows:

```
COMR05AB * AIN304 Feb01 14:29:08 0600 FAIL ACG control not added
      AIN ACG inoperative during image dumps.
      ACTION: Increase processor time for ACG.
      SUPPRESSED: 2
```

Field descriptions

The table that follows describes each eld in the log report:

Field	Value	Description
SUPPRESSED	numeric	This field indicates the number of attempts to generate this log report, from the generation of the last report of this type. The ACG application suppresses attempts to generate this report within 10 min of an earlier generated report.

Action

None.

Associated OM registers

There are no associated OM registers.

Additional information

Use table LOGCLASS to suppress generation of this report. Do not use table LOGCLASS to perform a threshold report for this log. The ACG application performs thresholding.

AIN500

Explanation

Log AIN500 records successful AIN Update messages that request a change in activation state for trigger item IDs. Log AIN500 allows telephone operating companies to monitor changes to the activation states of trigger items. The log output provides details on each Update message attempt so that undesirable change requests can be monitored. Downstream processing can monitor the logs and verify the source point code and subsystem number (SSN), to validate the service control point (SCP) that requests an update. Log AIN500 can be used to verify that all desired activation changes are complete.

Format

The format for log report AIN500 follows:

```
<load name> * AIN500 <date> <time> <seqno> TBL Successfull
trigger item update
  Message Type: Update
  SSP User Resource:<user resource id> = <resource data
value>
  TDP: e<4 and 17>
  SubNum: <N11,LNP,SDS,AFR>
  STATE: <ON/OFF>
  Source: SCP; PC: <0 to 255>-<0 to 255>-<0 to 255>, SSN:
<0 to 255>
```

Example

An example of log report AIN500 follows:

```
COMR09AJ * AIN500 JAN02 11:52:45 4100 TBL Successfull
trigger item update
  Message Type: Update
  SSP User Resource: LocalSSPID = TEST
  TDP: e17
  SubNum: AFR
  STATE: OFF
  Source: SCP; PC: 253-253-251, SSN: 236
```

Field descriptions

The following table explains each of the fields in the log report:

Field	Value	Description
Message Type	Message Type: Update	Indicates the Update message.
Source	SCP or PC: nnn-nnn-nnn, SSN: xxx	The values nnn and xxx are numbers from 0-255, representing the point code (PC) and the signaling subsystem number (SSN) of the SCP that initiated the Update message.
SSP Resource ID	Local SSPID	Identifies the SSP User Resource ID that the Update message has indicated. For NA009, it is a fixed string.
Trigger Detection Point	TDP: e1 to e34	The value identifies the detection point in the AIN call model.
Trigger Subnumber		
Activation Status	State: ON or OFF	The value indicates the current activation state of the trigger item ID.

Action

Log AIN500 does not require immediate action.

Associated OM registers

There are no associated OM registers for log AIN500.

Additional information

AIN501 logs are not generated for Individual trigger Item Updates

AIN501

Explanation

Log AIN501 records unsuccessful AIN Update message requests for activation state changes of trigger item IDs.

In the scenarios that follow Log AIN501 is not generated:

- The service switching point (SSP) returns a reject component with an incorrect parameter problem code.
- The SSP returns a failure report indicating a rate-too-high condition.
- The SSP returns an application error indicating an erroneous data value, or an unexpected parameter sequence.

Format

The format for log report AIN501 follows:

```
<load name> * AIN501 <date> <time> <seqno> TBL Unsuccessful
trigger item update
Message Type: Update
SSP User Resource: <user resource id> = <resource data value>
TDP: e<4 and 17>
SubNum: <N11,LNP,SDS,AFR>
STATE: <ON/OFF>
Source: SCP; PC: <0 to 255>—<0 to 255>—<0 to 255>, SSN: <0 to
255>
```

Example

An example of log report AIN501 follows:

```
COMR09AJ * AIN501 JAN02 11:52:45 4100 TBL Un-successfull
trigger item update
Message Type: Update
SSP User Resource: LocalSSPID = TEST
TDP: e4
SubNum: N11TRIG1
STATE: ON
Source: SCP; PC: 253-253-251, SSN: 236
```

Field descriptions

The following table explains each of the fields in the log report:

Field	Value	Description
Message Type	Message Type: Update	Indicates the Update message.
Source	SCP or PC: nnn-nnn-nnn, SSN: xxx	The values nnn and xxx are numbers from 0-255, representing the point code (PC) and the signaling subsystem number (SSN) of the SCP that initiated the Update message.
SSP Resource ID	Local SSPID	Identifies the SSP User Resource ID that the Update message has indicated. For NA009, it is a fixed string.
Trigger Detection Point	TDP: e1 to e34	The value identifies the detection point in the AIN call model.
Trigger Subnumber		
Activation Status	State: ON or OFF	The value indicates the current activation state of the trigger item ID.

Action

No immediate action is required for log AIN501.

Associated OM registers

There are no associated OM registers for log AIN501.

Additional information

AIN501 logs are not generated for Individual trigger Item Updates.

AIN510

Explanation

The advanced intelligent network (AIN) subsystem generates AIN510 when operating company personnel enable automatic call gapping (ACG).

This report indicates the date and time when operating company personnel enable the ACG.

This log report is for AIN release 0.1 and up.

Format

The log report format for AIN510 follows:

```
COMD08AB * AIN510 <Date> <Time> <Seqno> RTS ACG State
The AIN ACG Functionality is now turned ON .
```

Example

An example of log report AIN510 follows:

```
COMD08AB * AIN510 Feb01 14:29:08 0600 RTS ACG State
The AIN ACG Functionality is now turned ON .
```

Field descriptions

The following table describes each field in the log report:

Field	Value	Description
Date	mmmdd	Indicates month and day
Time	hh:mm:ss	Indicates hour, minute, second
Seqno	nnnn	the sequence number of this report

Action

There is no action required.

Associated OM registers

There are no associated OM registers.

Additional information

Enable ACG with the ACGONOF command in the AINCI tool.

AIN511

Explanation

The advanced intelligent network (AIN) subsystem generates AIN511 when operating company personnel disable automatic call gapping (ACG).

This report indicates the date and time when operating company personnel disabled ACG.

This log report is for AIN release 0.1 and up.

Format

The log report format for AIN511 is as follows:

```
COMD08AB * AIN511 <Date> <Time> <Seqno> OFFL ACG State
The AIN ACG Functionality is now turned OFF .
```

Example

The following is an example of log report AIN511:

```
COMD08AB * AIN511 Feb01 14:29:13 0602 OFFL ACG State
The AIN ACG Functionality is now turned OFF .
```

Field descriptions

The following table describes each field in the log report:

Field	Value	Description
Date	mmmdd	Indicates month and day
Time	hh:mm:ss	Indicates hour, minute, second
Seqno	nnnn	the sequence number of this report

Action

There is no action required.

Associated OM registers

There are no associated OM registers.

Additional information

Disable ACG with the ACGONOF command in the AINCI tool.

AIN600

Explanation

The system generates the AIN600 log when the TstQuery tool sends a message to the service control point (SCP). Operating company personnel generate the send command from the query tool at the TSTQUERY level of the MAP terminal. The AIN600 log records an attempt to send a message to the SCP. When the system sends errors or responses, the system generates additional reports in AIN601 and AIN602 logs.

Format

NA009 and NA011 update the AIN600 log to record new messages and parameters introduced into TstQuery. The format for the AIN600 log report follows:

```
<loadname> AIN600 <date> <time> <sequence no> INFO Test Query
Attempt
  User Name:          <>
  SessionID:         <>
  Application:       <>
  T1 Timer:          <>
  Transport:         <>
    Gtt Name:        <>
    Gtt Source:      <>
  Message:           <>
  <Parameters>
```

Example

An example of the AIN600 log report follows:

```
COMIO9BC AIN600 JAN02 15:50:40 9900 INFO Test Query Attempt
  User Name:          ADMIN
  SessionID:         12527
  Application:       R02
  T1 Timer:          30
  Transport:         TCPIP
    Application Instance Number: 0
  Message:           Info_Collected
  BearerCapability:  speech
  UserId Dn:         6137225085
```

Field descriptions

The table that follows explains each of the fields in the log report.

Field	Value(s)	Description
User Name	local datafill	This field is the name of the MAP CI user (for example, TEAM11)
SessionID	0 to 32 767	This field is the number identification of the session.
Application	R01, R02	This field is the message set in use (for example, AIN Service Enablers).
T1 Timer	1-99	This field is the preset time to wait for an incoming message.
Transport	SS7, TCPIP	This field is the transport type used.
GTT Name	local datafill	This field is the global title translation name used for signaling connection control point (SCCP) routing.
GTT Source	local datafill	This field is the global title translation name source (for example, charge or default)
Message	messages and of the AIN Essentials message set	This field is the message of the AIN Essentials message set.
<parameters>	parameters that go with the outgoing messages, parameter field names and their values	This field is the values filled in the outgoing message parameters.

Action

No immediate action

Associated OM registers

Does not apply

AIN601

Explanation

The system generates the AIN601 log when operating company personnel issue the send command to the service control point (SCP) and receive an SCP response. Operating company personnel generate the send command from the query tool at the TSTQUERY level of the MAP terminal. When the system sends errors or responses, the system generates additional reports.

Format

NA011 updates the AIN601 log to record new messages and parameters introduced into TstQuery. The format for the AIN601 log report follows.

```
<loadname> AIN601 <date> <time> <sequence no> INFO Test Query
Response
  User Name:          <>
  SessionID:         <>
  Elapsed Time Between Query And Response:
  <Min> minute(s) <Sec> second(s) <mill> millisecond(s)
  Conversation:      <>
  Trans ID:          <>
  Far End Trans ID:  <>
  Corr ID:           <>
  SCP Response Message: <>
  <Parameters>
```

Example

An example of the AIN601 log report follows:

```
COMIO9BC AIN601 JAN02 15:50:40 0000 INFO Test Query Response

  User Name:          ADMIN
  SessionID:         12527
  Elapsed Time Between Query And Response:
  0 minute(s) 0 second(s) 303 millisecond(s)
  Conversation:      No
  Trans ID:          2
  Far End Trans ID:  65021
  Corr ID:           1
  SCP Response Message: Analyze_Route
  Called Party ID:   7225031
    Nature of Number: Subscriber number
    Numbering Plan:  ISDN Numbering Plan
  AMA SLP ID:        123456789
```

Field descriptions

The table that follows explains each of the fields in the log report.

Field	Value	Description
UserName	local datafill	This field is the name of the MAP CI user (for example, TEAM11)
SessionID	0 to 32 767	This field is the number identification of the session.
ElapsedTimeBetweenQuery andResponse	see subfields	This field is the elapsed time between the query and the response.
<Min>	0 to 32 767	This field is the number of minutes that elapsed between the query and the response.
<Sec>	0 to 32 767	This field is the number of seconds that elapsed between the query and the response.
<Mill>	0 to 32 767	This field is the number of milliseconds that elapsed between the query and the response.
Conversation	Yes, No	This field indicates if the message is a conversation.
Trans ID	0 to 65 535	This field is the transaction ID.
FarEndTransID	0 to 65 535	When the incoming message is a conversation, this field is the SCP transaction ID for the conversation. When the incoming message is a response, there is no SCP transaction ID and this value is the service switching point (SSP) transaction ID.
CorrID	0 to 255	This field contains a correlation ID from the incoming transaction capabilities application part (TCAP) message. The ID is the invoke ID.
SCPResponseMessage	incoming messages	This field is the SCP response.
<parameters>	incoming message parameters	This field is the value filled in the outgoing message parameter.

Action

No immediate action

Associated OM registers

Does not apply

AIN602

Explanation

The system generates the AIN602 log when operating company personnel use the send command and nd a send error . Operating company personnel generate the send command from the query tool at the TSTQUERY level of the MAP terminal. The AIN602 log indicates that the system found an error and did not send the message to the service control point (SCP).

Format

NA011 updates the AIN602 log to record new messages and parameters introduced into TstQuery. The format for the AIN602 log report follows.

```
<loadname>  AIN602 <date> <time> <sequence no> INFO Test Query
Error
<Error Message>
  User Name:      <>
  SessionID:     <>
  Application:    <>
  Transport:     <>
  GTT Name:      <>
  GTT Source:    <>
  Message:       <>
  T1 Timer:      <>
```

Example

An example of the AIN602 log report follows:

```
COMIO9BC      AIN602 JAN02 15:50:40 9900 INFO Test Query Error
  <Unable to send a query due to transport out of
service>
  User Name:          ADMIN
  SessionID:         12527
  Application:        R02
  Transport:         TCPIP
  Application Instance Number: 0
  Message:           Info_Collected
  BearerCapability:  speech
  UserId Dn:         6137225085
  T1 Timer:          30
```

Field descriptions

The table that follows explains each of the fields in the log report.

Field	Value	Description
<ErrorMessage>	No data in query to the SCP, Unexpected data encountered, Invalid event ID or transaction ID encountered, Invalid parameters encountered, The application subsystem does not exist, No TCAP transaction IDs available, Application out of Service, Unrecognized Game Interface Return Code	This field is the description of the error messages received from the messaging interface.
User Name	local datafill	This field is the MAP CI user (for example, TEAM11).
SessionID	0 to 32 767	This field is the number identification of the session.
Application	R01, R02	This field is the message set in use (for example, AIN Service Enablers).
Transport	SS7, TCPIP	This field is the transport type used to send the messages.
GTT Name	local datafill	This field is the global title translation name used for signaling connection control part (SCCP) routing.
GTT Source	local datafill	This field is the GTT name source (for example, charge or default).
Application Instance Number	local datafill	This field is the number of the application instance (for example, 0).

Field	Value	Description
Message	Outgoing messages	This field is the outgoing message.
T1 Timer	0-99	This field is the set time to wait for an incoming message.

Action

No immediate action

Associated OM registers

Does not apply

AIN610

Explanation

The Advanced Intelligent Network (AIN) subsystem generates AIN610 when an ACG control list changes. Changes include the addition or replacement of a control. This report indicates the contents of the control, the affected list, if the addition or the replacement of a control occurred.

This log report is for AIN release 0.1 and up.

Format

The log report format for AIN610 is as follows:

```
office AIN610 mmmdd hh:mm:ss seqno INFO ACG/SOCC
Control List Change
  AIN ACG Control List Change
  Change_Event: <>      List_Type: <>
  GTA: <>              Duration (10 msec): <>
  TT_Name: <>          Interval (10 msec): <>
```

Note: Log AIN610 no longer refers to AIN 0.1 on the second line in NA008.

Example

An example of log report AIN610 follows:

```
COMD05AJ      AIN610 JAN01 21:31:44 4624 INFO ACG/SOCC
Control List Change
  AIN ACG Control List Change
  Change_Event: CONTROL ADDED      List_Type: SCP
  GTA: 613621                    Duration (10 msec): 6400
  TT_Name: AINJAZZ                Interval (10 msec): 400
```

Field descriptions

The following table describes each field in the log report:

Field	Value	Description
Change_Event	CONTROL ADDED or CONTROL REPLACED	Indicates if the control was an addition to the specified list or a replacement of a current control in the list
List_Type	SCP or SMS	Indicates: <ul style="list-style-type: none"> • SCP control list for automatic controls • SMS control list for manual controls
GTA	NPANXXXXXX	Global title address indicates the call or charge number to gap queries on.
TT_Name	As entered in table C7GTTTYPE, field GTTNAME	Translation type name can indicate a service, a group of services, or a software release, depending on entry.
Duration	numeric	Indicates the gap duration in 10-ms units.
Interval	numeric	Indicates the gap interval in 10-ms units.

Action

There is no immediate action required. Use this report to monitor control list activity or for security purposes.

Associated OM registers

Group AINACG, register CTRLCHA

Additional information

Use table LOGCLASS to threshold or suppress the report of this log.

AIN611

Explanation

The advanced intelligent network (AIN) subsystem generates AIN611 when AIN removes a control from the indicated ACG control list. The AIN generates this report when the AIN removes a control that uses one of the following removal messages:

- service control point (SCP)
- service management system (SMS) removal messages
- service switching point (SSP) delete command

The system does not generate this report when a control expires.

This log report is for AIN release 0.1 and up.

Format

The log report format for AIN611 is as follows:

```
office      AIN611 mmmdd hh:mm:ss seqno INFO ACG/SOCC Control
Removed
            AIN ACG control removed from list.
            List_Type: <>
            GTA: <>          TT_Name: <>
```

Note: Log AIN611 no longer refers to AIN 0.1 on the second line in NA008.

Example

An example of log report AIN611 follows:

```
COMD05AJ    AIN611 JAN01 21:50:27 7646 INFO ACG/SOCC
Control Removed
            AIN ACG control removed from list.
            List_Type: SCP
            GTA: 613621          TT_Name: AINJAZZ
```

Field descriptions

The following table describes each field in the log report:

Field	Value	Description
List_Type	SCP or SMS	Indicates: <ul style="list-style-type: none">• SCP control list for automatic controls• SMS control list for manual controls
GTA	NPANXXXXXX	Global title address. indicates the call or charge number to gap queries on.
TT_Name	As entered in table C7GTTYPE, field GTTNAME	Translation type name. This field can indicate a service, a group of services, or a software release, depending on entry.

Action

There is no immediate action required. Use this report to monitor control list activity or for security purposes.

Associated OM registers

Group AINACG, register CTRLCHA

Additional information

Use table LOGCLASS to threshold or suppress the report of this log.

AIN612

Explanation

Log AIN612 indicates when the system restores by request, the service control point (SCP) control list or service management system (SMS) control list or both. The system removes controls to restore the control lists. The system generates this log when controls are removed as a result of the service switching point (SSP) that receives an ACG_Global_Ctrl_Restore message from the SCP. This log also generates when the SSP restore command causes ACGRESTORE.

Format

The log report format for AIN612 is as follows:

```

COMD08AJ  AIN612 mmmdd hh:mm:ss ssdd INFO ACG/SOCC Control
List Restored
  AIN ACG Control List Restored.
  List Type: <>   Request Type: <>
  Number of Controls Deleted: <>
  Source: <>

```

Example

An example of log report AIN612 follows:

```

COMD08AJ      AIN612 JAN01 21:50:27 7646 INFO ACG/SOCC
Control List Restored
  AIN ACG Control List Restored.
  List_Type: SMS   Request_Type: Exclude Zero-Gap SMS
  Controls
  Number of Controls Deleted: 45
  Source: SCP; PC:100-105-106,      SSN:51

COMD08AJ      AIN612 JAN01 14:50:00 7646 INFO ACG/SOCC
Control List Restored
  AIN ACG Control List Restored.
  List_Type: SCP   Request_Type: All
  Number of Controls Deleted: 10
  Source: SSP

```

Field descriptions

The following table describes each field in the log report:

Field	Value	Description
Date:	mmdd	The date that the log generates
Time:	hh:mm:ss	The time that the log generates
Seqno:	ssdd	The sequence number of the log
List_Type	SCP or SMS or SCP and SMS	SCP or SMS or SCP and SMS Control Lists
Request_Type	All or Exclude Zero-gap SMS Controls	The system removes all controls or all but zero-gap controls (SMS only)
Source	SSP, SCP; PC:nnn- SSN:xxx	SSP-initiated (AINCI, ACGRESTORE command) or SCP-initiated restore uses ACG_Global_Ctrl_Restore message. (Where nnn and xxx are numbers from 0-255. These numbers represent the point code (PC) and the signaling subsystem number (SSN) of the SCP that initiated the restore request.
Number of Controls Deleted	0-512	The total number of controls removed from the control list or lists

Action

There is no action required.

Associated OM registers

Group AINACG, register CTRLCHA

Additional information

There is no additional information.

AIN700

Explanation

The system generates the AINT700 log when the AINTrace tool finds a message related to the agent or to select messages. The AINT700 log records the message, and displays the message in the following formats: TEXT, HEX, and BOTH (TEXT and HEX).

Format

The NA011 product release introduced log AINT700.

The following HEX format applies to the AINT700 log report.

```
<loadname> AINT700 <date> <time> <sequence no> INFO AINTrace Report
TCAP message recorded by AINTRACE:
Time:<>
Direction<>

****TCAP message in HEX format ****
<sequence of hex bytes>
```

The following TEXT format applies to the AINT700 log report.

```
<loadname> AINT700 <date> <time> <sequence no> INFO AINTrace Report
TCAP message recorded by AINTRACE:
  Time:                               <>
  Direction:                           <>

****TCAP message in TEXT format ****
TCAP Package Type:                     <>
Origin ID: <>
Respond ID:<>

Component Sequence:
=====
      Component:                         <>

      Component Type:                    <>

          Invoke ID:                     <>
          Correlation ID:                 <>

Operation Code
      Operation Family:                   <>
      Operation Name:                     <>

====Parameter Sequence====

<Parameter Name>
<Parameter Fields>
```

The following BOTH format applies to the AINT700 log report.

```

<loadname> AINT700 <date> <time> <sequence no> INFO AINTrace Report

TCAP message recorded by AINTRACE:
Time:                <>
Direction            <>

****TCAP message in HEX format ****
      <sequence of hex bytes>

****TCAP message in TEXT format ****
TCAP Package Type    <>
Origin ID:           <>
Respond ID:         <>

Component Sequence
=====
Component:

Component Type:      <>

Invoke ID:           <>
Correlation ID:     <>

Operation Code
Operation Family:    <>
Operation Name:      <>

====Parameter Sequence====

<Parameter Name>
<Parameter Fields>

```

Examples

The following sections provide log report examples in TEXT, HEX, and BOTH format for the following areas:

- T_Busy query and Offer_Call response
- ACG
- Update query and Update_success response
- Create_Call

T_Busy query and Offer_Call response

The following example, in HEX format, represents an AINT700 log report for a T_Busy query.

```
COML013AM      AINT700 OCT20 20:21:07 9100 INFO AINTrace Report

TCAP Message recorded by AINTrace:
Time: 99/10/20 20:21:07 Tid:   74  316
Agent:                HOST 00 1 09 27      DN 6136210307
Direction:            from SSP (outgoing)

      ***** TCAP message in HEX format *****
                        E2 4D C7 04 00 00 60 00 E8 45 E9 43 CF 01 00
                        D1 02 64 06 30 3A BF 35 07 81 05 16 73 22 70
                        70 8D 01 00 8F 07 01 10 16 73 22 70 70 9F 34
                        01 1A 93 07 03 10 16 63 12 30 70 92 07 03 13
                        16 63 12 30 70 94 01 00 8E 02 82 91 9F 5E 01
                        01 90 01 00
```

The following example, in HEX format, represents an AINT700 log report for an Offer_Call response.

```
COML013AM      AINT700 OCT20 20:21:07 9300 INFO AINTrace Report

TCAP Message recorded by AINTrace:
Time: 99/10/20 20:21:07 Tid:   74  316
Agent:                HOST 00 1 09 27      DN 6136210307
Direction:            from SCP or Adjunct (incoming)

      ***** TCAP message in HEX format *****
                        E4 44 C7 04 00 00 60 00 E8 3C E9 3A CF 02 01
                        00 D1 02 65 04 30 30 92 07 00 00 16 63 12 03
                        60 98 01 42 BA 22 8B 0A 36 31 33 37 37 37 38
                        37 37 37 8D 0A 48 45 4C 4C 4F 2C 20 44 41 44
                        93 08 30 31 30 31 30 30 30 30
```

The following example, in TEXT format, represents an AINT700 log report for a T_Busy query.

```

COML013AM      AINT700 OCT20 20:21:07 9100 INFO AINTrace Report

    TCAP Message recorded by AINTrace:
    Time: 99/10/20 20:21:07 Tid:  74  316
    Agent:                HOST 00 1 09 27    DN 6136210307
    Direction:            from SSP (outgoing)

        ***** TCAP message in TEXT format *****
    TCAP Package Type:    Query with Permission
    Origin ID:            00 00 60 00
    Respond ID:           NIL

    Component Sequence
    =====

    COMPONENT:            1

    Component Type:       Invoke (last) Component

    Invoke ID:            0
    Correlation ID:       256

    Operation Code
    Operation Family:     Request Instructions
    Operation Name:       T-Busy
  
```

The following example, in TEXT format, represents an AINT700 log report for an Offer_Call response.

```
COML013AM      AINT700 OCT20 20:21:07 9300 INFO AINTrace Report

    TCAP Message recorded by AINTrace:
Time: 99/10/20 20:21:07 Tid: 74 316
Agent:          HOST 00 1 09 27      DN 6136210307
Direction:     from SCP or Adjunct (incoming)

        ***** TCAP message in TEXT format *****
TCAP Package Type:  Response
Origin ID:         NIL
Respond ID:       00 00 60 00

Component Sequence
=====

COMPONENT:        1

Component Type:   Invoke (last) Component

Invoke ID:        1
Correlation ID:   0

Operation Code
  Operation Family:  Connection Control
  Operation Name:   Offer_Call

====Parameter Sequence====

CallingPartyID:   6136213006
  Nature of Number:  Unknown or not applicable
  Numbering Plan:   Unknown or not applicable
  Presentation Indicator: Presentation allowed
  Screen Indicator:  User provided, not screened
  Odd/Even Indicator: Even digits
ControllingLegTreatment: alertingOnPattern2DistinctiveSpecial

DisplayText:
  callingAddress:   "6137778777"
  callingPartyName: "HELLO, DAD"
  dateTimeOfDay:   "01010000"
```

The following example, in BOTH format, represents an AINT700 log report for a T_Busy query.

```

COML013AM      AINT700 OCT20 20:21:07 9100 INFO AINTrace Report

TCAP Message recorded by AINTrace:
Time: 99/10/20 20:21:07 Tid: 74 316
Agent:          HOST 00 1 09 27      DN 6136210307
Direction:     from SSP (outgoing)

      ***** TCAP message in HEX format *****
                E2 4D C7 04 00 00 60 00 E8 45 E9 43 CF 01 00
                D1 02 64 06 30 3A BF 35 07 81 05 16 73 22 70
                70 8D 01 00 8F 07 01 10 16 73 22 70 70 9F 34
                01 1A 93 07 03 10 16 63 12 30 70 92 07 03 13
                16 63 12 30 70 94 01 00 8E 02 82 91 9F 5E 01
                01 90 01 00

      ***** TCAP message in TEXT format *****
TCAP Package Type:  Query with Permission
Origin ID:         00 00 60 00
Respond ID:       NIL

Component Sequence
=====

COMPONENT:        1

Component code:   E9
Component Type:   Invoke (last) Component

Invoke ID:        0
Correlation ID:   256

Operation Code
  Opcode Bytes:   64 06
  Operation Family: Request Instructions
  Operation Name: T-Busy

  Parameter Tag:  30
====Parameter Sequence====

  Parameter Id:   BF 35
  Contents:       81 05 16 73 22 70 70
UserID:
  DN:             6137220707
--{ End of UserID }--
      Parameter Id:      8D
      Contents:          00
BearerCapability:  speech

      Parameter Id:      8F
      Contents:          01 10 16 73 22 70 70

```

(continued)

```
CalledPartyID:          6137220707
  Nature of Number:     Subscriber number
  Numbering Plan:       ISDN Numbering Plan
  Odd/Even Indicator:   Even digits

  Parameter Id:         9F 34
  Contents:             1A
TriggerCriteriaType:   tBusy

  Parameter Id:         93
  Contents:             03 10 16 63 12 30 70
ChargeNumber:          6136210307
  Nature of Number:     ANI of the calling party; national number
  Numbering Plan:       ISDN Numbering Plan
  Odd/Even Indicator:   Even digits

  Parameter Id:         92
  Contents:             03 13 16 63 12 30 70
CallingPartyID:        6136210307
  Nature of Number:     Unique national (significant) number
  Numbering Plan:       ISDN Numbering Plan
  Presentation Indicator: Presentation allowed
  Screen Indicator:     Network provided
  Odd/Even Indicator:   Even digits

  Parameter Id:         94
  Contents:             00
ChargePartyStationType: IdentifiedLine - No Special Treatment

  Parameter Id:         8E
  Contents:             82 91
BusyCause:
  General location:     Public network serving the local user
  Coding Standard:      CCITT Standard
  Number Of Diags:     0
  Cause value:         Normal event - User busy
  Diagnostic Byte #1:   242
  Diagnostic Byte #2:   54

  Parameter Id:         9F 5E
  Contents:             01
BusyType:              Call Cannot Be Offered

  Parameter Id:         90
  Contents:             00
CalledPartyStationType: IdentifiedLine - No Special Treatment
```


The following example, in BOTH format, represents an AINT700 log report for an Offer_Call response.

```

COML013AM      AINT700 OCT20 20:21:07 9300 INFO AINTrace Report

TCAP Message recorded by AINTrace:
Time: 99/10/20 20:21:07 Tid: 74 316
Agent:          HOST 00 1 09 27      DN 6136210307
Direction:     from SCP or Adjunct (incoming)

      ***** TCAP message in HEX format *****
                        E4 44 C7 04 00 00 60 00 E8 3C E9 3A CF 02 01
                        00 D1 02 65 04 30 30 92 07 00 00 16 63 12 03
                        60 98 01 42 BA 22 8B 0A 36 31 33 37 37 37 38
                        37 37 37 8D 0A 48 45 4C 4C 4F 2C 20 44 41 44
                        93 08 30 31 30 31 30 30 30 30 30

      ***** TCAP message in TEXT format *****
TCAP Package Type:   Response
Origin ID:           NIL
Respond ID:          00 00 60 00

Component Sequence
=====

COMPONENT:          1

Component code:      E9
Component Type:      Invoke (last) Component

Invoke ID:           1
Correlation ID:      0

Operation Code
Opcode Bytes:        65 04
Operation Family:    Connection Control
Operation Name:      Offer_Call

Parameter Tag:       30
====Parameter Sequence====

Parameter Id:        92
Contents:             00 00 16 63 12 03 60
CallingPartyID:      6136213006
Nature of Number:    Unknown or not applicable
Numbering Plan:      Unknown or not applicable
Presentation Indicator: Presentation allowed
Screen Indicator:    User provided, not screened
Odd/Even Indicator:  Even digits

Parameter Id:        98
Contents:             42
ControllingLegTreatment: alertingOnPattern2DistinctiveSpecial
  
```

(continued)

```

Parameter Id:      BA
  Contents:        8B 0A 36 31 33 37 37 37 38 37 37 37 8D 0A 48
                   45 4C 4C 4F 2C 20 44 41 44 93 08 30 31 30 31
                   30 30 30 30

```

```

DisplayText:
  callingAddress:  "6137778777"
  callingPartyName: "HELLO, DAD"
  dateTimeOfDay:  "01010000"

```

ControllingLegTreatment: alertingOnPattern2DistinctiveSpecial

```

Parameter Id:      BA
  Contents:        8B 0A 36 31 33 37 37 37 38 37 37 37 8D 0A 48
                   45 4C 4C 4F 2C 20 44 41 44 93 08 30 31 30 31
                   30 30 30 30

```

```

DisplayText:
  callingAddress:  "6137778777"
  callingPartyName: "HELLO, DAD"
  dateTimeOfDay:  "01010000"

```

ACG

The following example, in HEX format, represents an AINT700 log report for Automatic Call Gapping (ACG).

```

COML013AM      AINT700 OCT20 20:46:26 0100 INFO AINTrace Report

```

```

  TCAP Message recorded by AINTrace:
  Time: 99/10/20 20:46:26
  Direction:           from SCP or Adjunct (incoming)

```

***** TCAP message in HEX format *****

```

E1 28 C7 00 E8 24 E9 22 CF 02 01 00 D1 02 69
01 30 18 9F 3B 01 4A 9F 3E 01 0D 9F 3F 01 0D
9F 46 01 0F 9F 45 05 16 63 12 34 01

```

The following example, in TEXT format, represents an AINT700 log report for Automatic Call Gapping (ACG).

```

COML013AM      AINT700 OCT20 20:46:26 0100 INFO AINTrace Report

    TCAP Message recorded by AINTrace:
Time: 99/10/20 20:46:26
Direction:          from SCP or Adjunct (incoming)

        ***** TCAP message in TEXT format *****
TCAP Package Type:  Unidirectional
    Origin ID:      NIL
    Respond ID:     NIL

Component Sequence
=====

COMPONENT:          1

Component Type:     Invoke (last) Component

Invoke ID:          1
Correlation ID:    0

Operation Code
    Operation Family: Network Management
    Operation Name:   ACG

====Parameter Sequence====

ControlCauseIndicator:
    Control Digits:   10 digit control
    SMS Indicator:    SMS initiated controls encountered
    SCP Indicator:    no SCP overload controls encountered

GapDuration:        infinity

NationalGapInterval: no300Seconds

Translation Type:   AINPOP - internetwork applications - 15

GlobalTitleValue:   6136214310
    
```

The following example, in BOTH format, represents an AINT700 log report for Automatic Call Gapping (ACG).

```
COML013AM      AINT700 OCT20 20:46:26 0100 INFO AINTrace Report

TCAP Message recorded by AINTrace:
Time: 99/10/20 20:46:26
Direction:      from SCP or Adjunct (incoming)

      ***** TCAP message in HEX format *****
                E1 28 C7 00 E8 24 E9 22 CF 02 01 00 D1 02 69
                01 30 18 9F 3B 01 4A 9F 3E 01 0D 9F 3F 01 0D
                9F 46 01 0F 9F 45 05 16 63 12 34 01

      ***** TCAP message in TEXT format *****
TCAP Package Type:  Unidirectional
Origin ID:          NIL
Respond ID:         NIL

Component Sequence
=====

COMPONENT:         1

Component code:    E9
Component Type:    Invoke (last) Component

Invoke ID:         1
Correlation ID:   0
  Operation Code
  Opcode Bytes:    69 01
  Operation Family: Network Management
  Operation Name:  ACG

  Parameter Tag:   30
====Parameter Sequence====

  Parameter Id:    9F 3B
  Contents:        4A
ControlCauseIndicator:
  Control Digits:  10 digit control
  SMS Indicator:   SMS initiated controls encountered
  SCP Indicator:   no SCP overload controls encountered

  Parameter Id:    9F 3E
  Contents:        0D
GapDuration:       infinity
```

(continued)

```

Parameter Id:      9F 3F
      Contents:      0D
NationalGapInterval: no300Seconds

      Parameter Id:      9F 46
      Contents:      0F
Translation Type:  AINPOP - internetwork applications - 15

      Parameter Id:      9F 45
      Contents:      16 63 12 34 01
GlobalTitleValue: 6136214310
    
```

Update query and Update_success response

The following example, in HEX format, represents an AINT700 log report for an Update query.

```

COML013AM      AINT700 OCT20 20:51:03 8300 INFO AINTrace Report

      TCAP Message recorded by AINTrace:
Time: 99/10/20 20:51:03
Direction:      from SCP or Adjunct (incoming)

      ***** TCAP message in HEX format *****
                        E2 26 C7 04 00 00 E0 00 E8 1E E9 1C CF 01 02
                        D1 02 68 03 30 13 BF 67 10 A1 0A 85 08 4C 6F
                        63 53 53 50 49 44 9F 5B 01 78
    
```

The following example, in HEX format, represents an AINT700 log report for an Update_success response.

```

COML013AM      AINT700 OCT20 20:51:03 8500 INFO AINTrace Report

      TCAP Message recorded by AINTrace:
Time: 99/10/20 20:51:03
Direction:      from SSP (outgoing)

      ***** TCAP message in HEX format *****
                        E4 0F C7 04 00 00 E0 00 E8 07 EA 05 CF 01 02
                        30 00
    
```

The following example, in TEXT format, represents an AINT700 log report for an Update query.

```
COML013AM      AINT700 OCT20 20:51:03 8300 INFO AINTrace Report

      TCAP Message recorded by AINTrace:
      Time: 99/10/20 20:51:03
      Direction:                from SCP or Adjunct (incoming)

      ***** TCAP message in TEXT format *****      TCAP Package Type:
Query with Permission
      Origin ID:                00 00 E0 00
      Respond ID:               NIL

      Component Sequence
      =====

      COMPONENT:                1

      Component Type:           Invoke (last) Component

      Invoke ID:                2
      Correlation ID:          256

      Operation Code
      Operation Family:        Information Revision
      Operation Name:          Update

      ====Parameter Sequence====

      SSPUserResource:
      SSPUserResourceID:
      LocalSSPID:              LocSSPID
      ONoAnswerTimer:          120
      --{ End of SSPUserResource }--
```

The following example, in TEXT format, represents an AINT700 log report for an Update_success response.

```

COML013AM      AINT700 OCT20 20:51:03 8500 INFO AINTrace Report

      TCAP Message recorded by AINTrace:
      Time: 99/10/20 20:51:03
      Direction:          from SSP (outgoing)

            ***** TCAP message in TEXT format *****
      TCAP Package Type:      Response
      Origin ID:              NIL
      Respond ID:             00 00 E0 00

      Component Sequence
      =====

      COMPONENT:              1

      Component Type:         Result (last) Component
      CORR ID:                2
      *** No parameters in the message ***
  
```

The following example, in BOTH format, represents an AINT700 log report for an Update query.

```

COML013AM      AINT700 OCT20 20:51:03 8300 INFO AINTrace Report

      TCAP Message recorded by AINTrace:
      Time: 99/10/20 20:51:03
      Direction:          from SCP or Adjunct (incoming)

            ***** TCAP message in HEX format *****
                                E2 26 C7 04 00 00 E0 00 E8 1E E9 1C CF 01 02
                                D1 02 68 03 30 13 BF 67 10 A1 0A 85 08 4C 6F
                                63 53 53 50 49 44 9F 5B 01 78

            ***** TCAP message in TEXT format *****
      TCAP Package Type:      Query with Permission
      Origin ID:              00 00 E0 00
      Respond ID:             NIL
  
```

```
Component Sequence
=====

COMPONENT:          1

Component code:     E9
Component Type:     Invoke (last) Component

Invoke ID:          2
Correlation ID:    256

Operation Code
  Opcode Bytes:     68 03
  Operation Family: Information Revision
  Operation Name:   Update

  Parameter Tag:    30
====Parameter Sequence====

  Parameter Id:     BF 67
  Contents:         A1 0A 85 08 4C 6F 63 53 53 50 49 44 9F 5B 01
                   78

SSPUserResource:
SSPUserResourceID:
  LocalSSPID:      LocSSPID
  ONoAnswerTimer: 120      --{ End of SSPUserResource }--
```


The following example, in BOTH format, represents an AINT700 log report for an Update_success response.

```

COML013AM      AINT700 OCT20 20:51:03 8500 INFO AINTrace Report

TCAP Message recorded by AINTrace:
Time: 99/10/20 20:51:03
Direction:          from SSP (outgoing)

      ***** TCAP message in HEX format *****
                E4 0F C7 04 00 00 E0 00 E8 07 EA 05 CF 01 02
                30 00

      ***** TCAP message in TEXT format *****
TCAP Package Type:      Response
Origin ID:              NIL
Respond ID:            00 00 E0 00

Component Sequence
=====

COMPONENT:              1

Component code:         EA
Component Type:         Result (last) Component
CORR ID:                2
*** No parameters in the message ***

```

Create_Call

The following example, in HEX format, represents an AINT700 log report for Create_Call.

```

COMR13AY      AINT700 JAN05 11:33:01 9400 INFO AINTrace Report

TCAP Message recorded by AINTrace:
Time: 00/01/05 11:33:01
Direction:          from SCP or Adjunct (incoming)

      ***** TCAP message in HEX format *****
                E2 25 C7 04 00 00 00 BB E8 1D E9 1B CF 01 01
                D1 02 65 07 30 12 8F 07 03 10 16 63 12 17 73
                92 07 03 13 16 63 12 17 05

```

The following example, in TEXT format, represents an AINT700 log report for Create_Call.

```
COMR13AY      AINT700 JAN05 11:33:01 9400 INFO AINTrace Report

TCAP Message recorded by AINTrace:
Time: 00/01/05 11:33:01
Direction:           from SCP or Adjunct (incoming)

          ***** TCAP message in TEXT format *****
TCAP Package Type:   Query with Permission
Origin ID:           00 00 00 BB
Respond ID:          NIL

Component Sequence
=====

COMPONENT:           1

Component code:      E9
Component Type:      Invoke (last) Component

Invoke ID:           1
Correlation ID:      256

Operation Code
Opcode Bytes:        65 07
Operation Family:    Connection Control
Operation Name:      Create_Call

Parameter Tag:       30
====Parameter Sequence====

Parameter Id:        8F
Contents:             03 10 16 63 12 17 73
CalledPartyID:       6136217137
Nature of Number:    National (significant) number
Numbering Plan:      ISDN Numbering Plan
Odd/Even Indicator:  Even digits
Parameter Id:        92
Contents:             03 13 16 63 12 17 05
CallingPartyID:      6136217150
Nature of Number:    Unique national (significant) number
Numbering Plan:      ISDN Numbering Plan
Presentation Indicator: Presentation allowed
Screen Indicator:    Network provided
Odd/Even Indicator:  Even digits
```

The following example, in BOTH format, represents an AINT700 log report for Create_Call.

```

COMR13AY      AINT700 JAN05 11:33:01 9400 INFO AINTrace Report

    TCAP Message recorded by AINTrace:
Time: 00/01/05 11:33:01
Direction:           from SCP or Adjunct (incoming)

        ***** TCAP message in HEX format *****
                        E2 25 C7 04 00 00 00 BB E8 1D E9 1B CF 01 01
                        D1 02 65 07 30 12 8F 07 03 10 16 63 12 17 73
                        92 07 03 13 16 63 12 17 05

        ***** TCAP message in TEXT format *****
TCAP Package Type:   Query with Permission
  Origin ID:         00 00 00 BB
  Respond ID:       NIL

Component Sequence
=====

COMPONENT:          1

Component code:     E9
Component Type:     Invoke (last) Component

Invoke ID:          1
Correlation ID:    256

Operation Code
  Opcode Bytes:     65 07
  Operation Family: Connection Control
  Operation Name:   Create_Call

  Parameter Tag:    30
====Parameter Sequence====

  Parameter Id:     8F
  Contents:         03 10 16 63 12 17 73
CalledPartyID:     6136217137
  Nature of Number: National (significant) number
  Numbering Plan:   ISDN Numbering Plan
  Odd/Even Indicator: Even digits
  Parameter Id:     92
  Contents:         03 13 16 63 12 17 05
CallingPartyID:    6136217150
  Nature of Number: Unique national (significant) number
  Numbering Plan:   ISDN Numbering Plan
  Presentation Indicator: Presentation allowed
  Screen Indicator: Network provided
  Odd/Even Indicator: Even digits

```

Field descriptions

The following table explains the fields in the log report.

Field	Value(s)	Description
TID	two hexadecimal numbers	This field is the TID of the message.
Agent	value depends on the agent	This field is the agent of the message.
Direction	from SCP or Adjunct (incoming), from SSP (outgoing)	This field is the direction of the message.
Hex message	Hexadecimal	This field is the contents of the message in hexadecimal form.
TCAP package type	Unidirectional, Query with Permission, Query Without Permission, Response, Conversation With Permission, Conversation Without Permission, Abort	This field is the package type of the message. Note: AIN does not allow the following package types: Query Without Permission, Conversation Without Permission.
Origin ID	numerical	This field is the originator of the message.
Respond ID	numerical	This field is the responder of the message.
Component Type	Invoke (Last), Return Result (Last), Return Error, Reject, Invoke (Not Last), Return Result (Not Last)	This field is the component type of the message. Note: AIN does not allow the Return Result (Not Last) component.
Component ID	numerical	This field is the component identification of the message.
Invoke ID	numerical	This field is the invoke identification of the message.
Correlation ID	numerical	This field is the correlation identification of the message.
<Operation Code>	a valid operation code	This field is the operation code of the message.
<parameters>	valid parameter(s), their field names and their values	This field is the value of the parameter(s).

0.1 Action

No immediate action

Associated OM registers

Does not apply

Associated OM registers

Not applicable

Additional information

Not applicable

Action

Not applicable

Associated OM registers

OM group EXT with key BASCPS_HUGE_EXT_BLK is associated with log AUD651.

Additional information

Not applicable

LINE150

Explanation

The LINE subsystem generates this report when a customer originated trace (COT) has been performed successfully. A subscriber with the COT feature dialed the COT access code and thus initiated a trace of the last call received. LINE150 provides a dump of the incoming memory slot (IMS) associated with the COT subscriber.

The COT feature pegs the COT operational measurement (OM) group. This group mostly describes subscriber actions and system problems, which prevent interaction with the subscriber during feature activation.

Format

The format for log report LINE150 follows:

```
LINE150 mmmdd hh:mm:ss ssdd INFO FULL COT TRACE
SUBSCRIBER LEN: len          SUBSCRIBER DN: dn
TRACE DUMP TIME CALL RCVD: mmmdd hh:mm:ss DN: dn
INTRAOFFICE: x ORIG ADDR TYPE: nnn typetxt
OUT OF AREA: x CWT: x PRIVATE: x GIC: x
```

Example

An example of log report LINE150 follows:

```
LINE150 JAN01 09:01:38 1234 INFO FULL COT TRACE
SUBSCRIBER LEN: HOST 00 0 13 02 SUBSCRIBER DN: 6136211234
TRACE DUMP TIME CALL RCVD: JAN01 08:58:00 DN: 6136211245
INTRAOFFICE: N ORIG ADDR TYPE: 001 (UNIQUE)
OUT OF AREA: N CWT: Y PRIVATE: N GIC: N
```

Field descriptions

The following table explains each of the fields in the log report:

Field	Value	Description
INFO FULL COT TRACE	Constant	Indicates a report of a fully successful customer originated trace
SUBSCRIBER LEN:len	Symbolic text	Identifies the COT subscriber's line equipment number. Refer to Table I.
SUBSCRIBER DN:dn	Symbolic text	Identifies the COT subscriber's directory number. Refer to table I.

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Field	Value	Description
TRACE DUMP	Constant	Indicates that a dump of trace information follows
TIME CALL RCVD: mmmdd	JAN01-DEC31	Provides the date of the call for which the subscriber is requesting a trace
hh:mm:ss	00:00:00-23:59:59	Indicates the time of the call for which the subscriber is requesting a trace
DN: dn	Symbolic text	Provides the DN of the calling party. In most cases, a ten-digit DN will be given. Refer to table I.
INTRAOFFICE: x	Y or N	Indicates whether or not the call originated on the same switch as the one servicing the subscriber who originated the trace. Note: Loop-around trunks are not considered intranode.
ORIG ADDR TYPE	001 (UNIQUE) 003 (UNIQUE) 004 (UNIQUE) 113 (NON-UNIQUE) 115 (NON-UNIQUE) 116 (NON-UNIQUE) 119 (TEST) (UNKNOWN) nnn (UNDEFINED)	Indicates the traced DN is unique and can be traced back to a specific line Indicates the traced DN is not unique and cannot be traced back to a specific line Indicates a test call Indicates the corresponding field in incoming call memory is a nil value and the uniqueness of the traced DN is unknown Indicates the value receiver in the nature of address indicator is nnn, but this value is not defined as part of the ISUP protocol
OUT OF AREA: x	N	Indicates the call was not out of area. Always N for this log report.

Field	Value	Description
CWT: x	Y or N	Indicates whether or not the trace dump corresponds to a calling party that call waited. Whether or not the call was answered is irrelevant.
PRIVATE: x	Y	Indicates the calling number was suppressed
	N	Indicates the calling number was not suppressed
GIC: x	Y	Indicates the traced call used the Group Intercom (GIC) feature to make the call
	N	Indicates the traced call did not use the Group Intercom (GIC) feature to make the call.

Action

No specific maintenance action is required. This log provides call traces and is to be used as desired by the operating company.

Associated OM registers

None

LINE151

Explanation

The LINE subsystem generates this report when a subscriber with the customer originated trace (COT) feature dials the COT access code and initiates a trace of the last call received. However, because the traced call was out-of-area or because the traced directory number was not a 7- or 10-digit number, the call trace information is incomplete. Other reasons for a LINE151 log out are outlined in the table at the end of this log.

Format

The format for log report LINE151 follows:

```
LINE151 mmmdd hh:mm:ss ssdd INFO PART COT TRACE
SUBSCRIBER LEN: len      SUBSCRIBER DN: dn
TRACE DUMP TIME CALL RCVD: mmmdd hh:mm:ss
DN/LEN/TRK:              dn/len
INTRAOFFICE: x  ORIG ADDR TYPE: nnn tytxt
OUT OF AREA: x  CWT: x  PRIVATE: x  GIC: x
REASON: rsntxt
```

Example

An example of log report LINE151 follows:

```
LINE151 JAN01 09:01:38 1234 INFO PART COT TRACE
SUBSCRIBER LEN: HOST 00 0 13 02  SUBSCRIBER DN: 613
6211234
TRACE DUMP TIME CALL RCVD: JAN01 08:58:00 DN: 613
6211235
INTRAOFFICE: Y  ORIG ADDR TYPE: 003 (UNIQUE)
OUT OF AREA: N  CWT: Y PRIVATE: N  GIC: N
REASON: POTENTIAL CALL WAITING INTERACTION
```

Field descriptions

The following table explains each of the fields in the log report:

Field	Value	Description
INFO PART COT TRACE	Constant	Indicates a report of a partially successful or an unsuccessful customer-originated trace
SUBSCRIBER LEN	Symbolic text	Refer to Table I. Identifies the COT subscriber's line equipment number

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Field	Value	Description
SUBSCRIBER DN	Symbolic text	Refer to Table I. Identifies the COT subscriber's directory number
TRACE DUMP	Constant	Indicates a dump of trace information follows
TIME CALL RCVD: mmdd	JAN01 - DEC31	Indicates the date the traced call was received
hh:mm:ss	00:00:00 - 23:59:59	Indicates the time of the call for which the customer is requesting a trace
DN/LEN/TRK: dn/len	Refer to Table I.	Provides the dial number (DN) or the line equipment (LEN) of the calling party. In most cases, a 10-digit DN will be given. The LEN number or the name of the incoming trunk will be displayed when the calling DN is unavailable.
INTRAOFFICE	Y or N	Indicates whether or not the call originated on the same switch as the one servicing the subscriber who originated the trace. Note that loop-around trunks are not considered intranode.
ORIG ADDR TYPE: nnn typtxt	001 (UNIQUE) 003 (UNIQUE) 004 (UNIQUE)	Indicates the traced DN is unique and can be traced back to a specific line
	113 (NON-UNIQUE) 115 (NON-UNIQUE) 116 (NON-UNIQUE)	Indicates the traced DN is not unique and cannot be traced back to a specific line
	119 (TEST)	Indicates a test call
	(UNKNOWN)	Indicates the corresponding field in incoming call memory is a nil value. Therefore, the uniqueness is unknown.
	nnn (UNDEFINED)	Indicates the value received in the nature of address indicator is nnn but this value is not defined as part of the ISDN user part (ISUP) protocol
OUT OF AREA	N	Indicates the call was not out of area
	Y	Indicates the call was out of area and the calling number is not available

Field	Value	Description
CWT:	Y or N	Indicates whether or not the trace dump corresponded to a calling party that call waited. It is irrelevant if the call is answered or unanswered.
PRIVATE	Y	Indicates the calling number was suppressed
	N	Indicates the calling number was not suppressed
GIC	Y	Indicates the traced call used the Group Intercom (GIC) feature to make the call. This feature occurs only for intra-office calls.
	N	Indicates the traced call did not use the Group Intercom (GIC) feature to make the call. This feature occurs only for intraoffice calls.
REASON	Symbolic text	Refer to table of reasons. Provides the reason for this log report being generated instead of a LINE150 log report

Action

No specific maintenance action is required. This log provides information about a possibly malicious call. The action to be taken is up to the operating company's discretion.

Associated OM registers

None

Additional information

Refer to the following table for additional reasons.

RSNTXT	Explanation
CALLING PARTY ADDRESS NOT DELIVERED	Indicates the calling party information is not available because common channel signaling system No. 7 (CCS7) is not present or not providing necessary data.
TRACED DN NOT 7 OR 10 DIGITS	Indicates the traced directory number is not 7 or 10 digits.

RSNTXT	Explanation
AMBIGUOUS DATA	This reason appears in situations where the data is determined to be ambiguous. For example, if intra-office field is set to `N' and GIC is set to `Y', then the `AMBIGUOUS DATE' is output as a reason. This is because GIC is a nodal feature and does not apply to an internode call.
EXPECTED DN INFORMATION MISSING	This reason appears if the COT subscriber activates the COT feature right after the line option has been assigned, or if a DN is unavailable in a case where there was no interworking. (The incoming memory slot contains default data before any calls have been received).
NO DN FOR INTRAOFFICE ORIGINATOR	This reason appears when a unique originator cannot be determined for an intraoffice call. Hence the LEN is displayed. (LEN calling parties generally correspond to multiparty originators).
POTENTIAL CALL WAITING INTERACTION	This reason appears if incoming call memory has been updated by a call waiting call. However, the call memory is updated regardless of whether the call waited call is answered or not, thus making the trace data ambiguous for the purpose of call trace.

DFIL109

Explanation

The Data II (DFIL) subsystem generates log report DFIL109 when a service switching point (SSP) receives an enhanced 800 service (E800) call on a trunk. Table SSPTKINF does not have the originating local access and transport area (LATA) entered for the trunk. The system cannot route the call. The call receives a C7_APPLICATION treatment.

Format

The log report format for DFIL109 follows:

```
*DFIL109 mmmdd hh:mm:ss ssdd FAIL SSP TRANSLATION ERROR
      CKT cktid
      TABLE SSPTKINF NOT DATAFILLED; LATA IS REQUIRED
```

Example

An example of log report DFIL109 follows:

```
*DFIL109 JAN05 22:41:59 3540 FAIL SSP TRANSLATION ERROR
      CKT      PVNIT 1
      TABLE SSPTKINF NOT DATAFILLED; LATA IS REQUIRED
```

Field descriptions

The following table describes each field in the log report.

Field	Value	Description
FAIL SSP TRANSLATION ERROR	Constant	Indicates an SSP translation error
CKT	Character string	Identifies the trunk that received the incoming E800 call. Refer to table I.
TABLE SSPTKINF NOT DATAFILLED; LATA IS REQUIRED	Constant	Indicates that table SSPTKINF does not contain the correct datafill.

Action

Add the trunk CLLI and LATA number to table SSPTKINF.

Associated OM registers

There are no associated OM registers.

Additional information

There is no additional information.

DFIL320

Explanation

This feature introduces log DFIL320. The advanced intelligent network (AIN) subsystem generates this log when both of the following conditions occur:

- after the SCP sends an AIN AnalyzeRoute, ForwardCall, or SendToResource (Intelligent Peripheral) response, or default routing
- when the system cannot get an RCNAME while performing ISDN response translations

Format

The format for log report DFIL320 follows.

```
<load name> ** <date><time><seqno> INFO Missing Datafill
Missing tuple in table RTECHAR.
ISDN translations unable to completeduring AIN response proce
AIN response used following routing characteristics:
CDN = <CDN returned in the AIN response>
TNS = <TNS returned in the AIN response>
OSA = <OSA returned in the AIN response>
BC = <BC used during the AIN response>
```

Example

An example of log report DFIL320 follows.

```
office DFIL320 mmdd hh: mm:ss ssdd INFO Missing Datafill
Missing tuple in table RTECHAR
ISDN translations unable to complete during AIN response
processing.
AIN response used following routing characteristics:

CDN = NA
TNS = UNK
OSA = UNK
BC = SPEECH
```

Field descriptions

The following table explains each of the fields in the log report:

Field	Value	Description
CDN	NIL, L, NA, IN, --	This field is the calling directory number information returned in the AIN response.
TNS	UNK, NA, --	This field is the transaction network service information returned in the AIN response.

Field	Value	Description
OSA	UNK, PUBP, PUBA, --	This field is the operator system access information returned in the AIN response.
BC	NIL, SPEECH, 64KDATA, 64KX25, 56KDATA, DATAUNIT, 64KRES, 3_1KHZ, 7_KHZ, VOICE_DATA, 64K_RATE-AD_DAT A, 32KSPEECH, WIDEBAND, 64K_NCA, --	This field is the bearer capability information used during the AIN response.

Action

Use the routing characteristics to create a tuple in table RTECHAR. Link the tuple to an RCNAME.

Note: Data ll a routing characteristic name in table RCN AME, then reference the name from table RTECHAR.

Related OM registers

Does not apply

10. Operational measurements for AIN

AIN operational measurements (OMs) performs traffic measurements and maintenance measurements on AIN SSP calls. The following OM groups apply to the AIN SSP:

- AIN
- AINACG
- AINICOFF
- AINICSUB
- AINNCR
- AINOGOFF
- AINOFSUB
- FTROM

OM group AIN is the platform for traffic and maintenance measurements. OM group AINACG provides measurements for automatic code gapping (ACG). OM group FTROM is the platform to capture feature data block high-water marks and seizures. The other OM groups listed above act as AIN message counters.

10.1 AIN OM group

OM group AIN is used for traffic and maintenance measurements for various AIN SSP applications. This group contains a key field, AIN_MSGSET, where the name of the AIN application must be specified. For AIN Essentials OMs, the key value "R01" must be applied to this field and for AIN Service Enablers OMs, the key value "R02". AIN Essentials OMs belong to OM group AIN, under key R01 and AIN Service Enablers OMs are under key R02. The OM registers for AIN Service Enablers are identical to those for AIN Essentials.

The AIN Service Enablers SSP OM registers contained in OM group AIN under key R02 are summarized in Table 24.

Table 24 Operational measurements

OM name	Register name
Traffic measurements	
AIN Service Enablers Triggers	TRIG, TRIG2 (Note)
AIN Shared Interoffice Calls	INTROFF, INTROFF2 (Note)
AIN calls	AINCALL, AINCALL2 (Note)
Create_Call Time-out	CCTMOUT
Maintenance measurements	
AIN Call Processing Failure Before Initial Query	CPFLBFQ
AIN Call Processing Failure After Initial Query	CPFLAFQ
Resource Failure Before Initial Query caused by Transaction ID	TIOVFBFQ
Resource Failure Before Initial Query, Caused by Component ID	CIOVFBFQ
Resource Failure After Query, Caused by Transaction ID	TIOVFAFQ
Resource Failure After Query, Caused by Component ID	CIOVFAFQ
SSP Time-out Awaiting Off-board Processor	RSPTMOUT
Invalid Command Message	INVCMDMG
Invalid Command Sequence	INVCMDSE
Maximum Queries Exceeded	MAXQEXCD
Maximum Parameter Count Exceeded per AMA Record	AMAMAX
AMA Parameters Received Prior to AMAspID	AMASLPID
AMA Parameters Received in Conversation Package	AMACONV
Disconnect Leg Failures	DLFL
Note: These are overflow registers.	

10.1.1 Traffic measurements

In addition to non AIN SSP related traffic measurements, the AIN SSP keeps track of the AIN SSP specific traffic measurements that are detailed in the sections that follow.

10.1.1.1 AIN Service Enablers triggers

This measurement counts the number of times an AIN Service Enablers trigger occurs; that is, the number of times an AIN Service Enablers trigger is encountered and all its criteria are met.

10.1.1.2 AIN shared interoffice calls

This measurement counts the number of times the Shared_Interoffice_T runk trigger occurs and all its criteria are met.

10.1.1.3 AIN calls

This measurement counts the number of AIN calls that occur on an SSP during the OM transfer period. An AIN call is as any call which triggers at least once.

Calls which fail after triggering are still AIN calls. Calls which escape from a trigger are not AIN calls. A trigger which occurs after the SCP forwards the call (that is, when the SSP receives a Forward_Call response message) is considered a separate AIN call. A call that is forwarded by the SSP may be considered at most one AIN call.

AIN calls are separated by message set according to the message set of the first trigger encountered by the call. A message set of R01 indicates AIN Essentials. A message set of R02 indicates AIN Service Enablers.

10.1.2 Maintenance measurements

Maintenance measurements keep count of the number of irregularity events detected by the SSP. It is possible that an irregularity event may fall under several categories. In this situation, the most specific measurement is used to count the event. The following subsections describe the various maintenance measurements that affect AIN SSP calls and AIN SSP TSTQuery.

10.1.2.1 AIN call processing failure before initial query

This measurement counts the number of AIN SSP calls that have failed due to an AIN SSP hardware or software initialization failure or AIN SSP call processing failure that occurred before the first AIN SSP query message was sent. Non AIN SSP-related call processing and initialization failures are measured by currently existing OMs.

10.1.2.2 AIN call processing failure after initial query

This measurement counts the number of AIN SSP calls that have failed due to an AIN SSP hardware or software initialization failure or AIN SSP call processing failure that occurred after a query was sent to an off-board

processor. Non-AIN SSP-related call processing and initialization failures are measured by currently existing OMs.

10.1.2.3 Resource unavailable before initial query

Currently, there are two OMs that keep track of this call irregularity. Each is based on a different cause of the irregularity.

10.1.2.3.1 Transaction ID over o w or incorrect This measurement counts the number of AIN SSP call failures that occur before the first AIN SSP query was sent and the failure was caused by an unavailable transaction identification resource or an incorrect transaction identification.

10.1.2.3.2 Component ID over o w This measurement counts the number of AIN SSP call failures that occur before the first AIN SSP query was sent. The failure occurred because the component identification resource was unavailable.

10.1.2.4 Resource unavailable after initial query

There are two OMs that keep track of this call irregularity. Similar to the previous OMs, each is based on a different cause of the failure.

10.1.2.4.1 Transaction ID over o w or incorrect This measurement counts the number of AIN SSP call failures that occur after the initial query was sent. In this case the failure occurred because the transaction identification resource was unavailable or the transaction identification provided was incorrect.

10.1.2.4.2 Component ID over o w This measurement counts the number of AIN SSP call failures that occur after the initial query was sent and the failure occurred because the component identification resource was unavailable.

10.1.2.5 SSP time-out awaiting off-board processor

This measurement counts the number of AIN SSP call failures and AIN SSP TSTQuery failures that occurred because the SSP has timed-out awaiting a response from an off-board processor.

10.1.2.6 Invalid command message

This measurement counts the number of times a message is received from an off-board processor that is not decipherable or has bad data.

10.1.2.7 Invalid command sequence

This measurement counts the number of times a message from an off-board processor is received incomplete or not in sequence.

10.1.2.8 Maximum queries exceeded

This measurement counts the number of AIN SSP call that failed because the limit on the number of AIN SSP queries per call was exceeded.

10.1.2.9 Maximum AMA parameters exceeded

This measurement counts the number of times an AMA parameter was received more times than allowed by the SSP for one AMA record.

10.1.2.10 AMA parameters received prior to AMAslpID parameter

This measurement counts the number of times the SSP received AMA parameters before the AMAslpID parameter was sent for the call.

10.1.2.11 AMA parameters received in a Conversation package

This measurement counts the number of times AMA parameters were received in a conversation package.

10.2 AINACG OM group

Group AINACG provides measurements for the automatic code gapping (ACG) feature in the SSP for AIN Service Essentials and Enablers. It is used to monitor blocking of AIN queries by ACG, ACG control list overflows, and count changes to ACG control lists. See Table 25.

Table 25 AINACG OM group

OM register	Description or item counted
BLKCASCP	blocked calls due to AIN SCP overload control
BLKCASMS	blocked calls due to AIN SMS overload control
SCPOVLDO	SCP overload, list overflowed
SMSOVLDO	SMS overload, list overflowed
CTRLCHA	control list changed

10.3 FTROM OM group

Group FTROM is the platform to capture feature data block (FDB) high-water marks and seizures. See Table 26 for a list of the registers.

Table 26 FTROM OM group

OM register	Description or item counted
FTRHI	records the maximum number of FDBs of each type that are in simultaneous use during an OM transfer period
FTRSEIZ	monitors the number of FDBs of each type that are successfully allocated

Table 26 FTROM OM group

OM register	Description or item counted
FTRSEIZ2	extension register for FTRSEIZ

At the beginning of each transfer period, the FTRSEIZ and FTRSEIZ2 active registers are initialized to zero. The active register increments when a request for a particular type of FDB is successful.

At the beginning of each transfer period, the FTRHI active register is initialized to the number of FDB that are currently in use. The active register is updated continuously throughout the transfer period whenever the number of FDBs that are currently in use exceeds the previously recorded value.

At the end of the transfer period, the active registers are transferred to the holding register where it is retained without change until it is overwritten at the end of the next transfer period.

The FTROM OM group provides one tuple for each of the current FDB types. This provides a more granular breakdown of FDB usage than what is listed in the EXT OM group. The FTROM OM group contains a key `eld`, `FTR_NAME`, in which the type of FDB must be specified.

The “info `eld`” for the FTR OM OM group contains the size of the FDB. Possible sizes are SMALL, MEDIUM, LARGE, and X_LARGE, and CRITICAL. The size information allows one to relate the FDB type to the FDB size as stored in the EXT OM group under the corresponding tuples, as listed in Table 27.

Table 27 Feature data block types for the EXT OM group

Index	EXT_FORMAT_CODE	Office parameter	Size
81	SMALL_FEATURE_DATA	NO_OF_SMALL_FTR_DATA_BLKs	Small
82	MEDIUM_FEATURE_DATA	NO_OF_MEDIUM_FTR_DATA_BLKs	Medium
83	LARGE_FEATURE_DATA	NO_OF_LARGE_FTR_DATA_BLKs	Large
180	EXTRA_LARGE_FEATURE_DATA	NO_OF_EXTRA_LARGE_FTR_DATA_BLKs	Xlarge
86	CRITICAL_FEATURE_DATA	NO_OF_CRITICAL_FTR_DATA_BLKs	Critical

10.4 OMs that count AIN messages

AIN Service Enablers provides a set of OM registers to count call-related and non-call-related messages that are passed between the SSP and the SCP. These OMs count messages which are part of a transaction initiated by a trigger

which was data lled in the TRIGDIG or TRIGINFO table with the MSGSET equal to R02.

The purpose of these message counters is to provide traf c engineering, monitoring, and maintenance capabilities. They are only active when SOC order code, AIN00210, is turned on.

The OM registers are organized into the ve OM groups as summarized in Table 28 on page 389.

Table 28 Message counter OM groups

OM group	Call relation	Direction	Subscription	Description
AINOGOFF	Call-related	Outgoing	Office	See Section 10.4.1 on page 390.
AINOGSUB	Call-related	Outgoing	Subscribed	See Section 10.4.2 on page 391.
AINICOFF	Call-related	Incoming	Office	See Section 10.4.3 on page 392.
AINICSUB	Call-related	Incoming	Subscribed	See Section 10.4.4 on page 393.
AINNCR	Non-call-related	Both	N/A	See Section 10.4.5 on page 394.

Separate OM registers are provided for each type of message being counted. When a message can be sent from the SSP as a result of more than one kind of trigger or event, a separate OM register is provided for each trigger and event type. An OM register increments each time its corresponding message is successfully sent or received. A message is considered successfully sent once it has been encoded into the TCAP protocol. A message is considered successfully received once it has been decoded from the TCAP protocol.

Decoding TCAP messages involves several stages of error checking. The message is counted once the message parameters are decoded even when there are errors in the message parameters. Messages are not counted when an error is detected in the TCAP package or component. These include: all fatal protocol errors; errors as a result of a bad combination of message, package or component type; invalid response message; bad correlation IDs; duplicated messages.

A message is classified as office or subscribed based on the classification of the trigger which initiates the TCAP transaction. Table 29 shows the trigger classifications used by AIN Service Enablers OMs:

Table 29 Trigger type classification

TDP	Trigger	Classification
Origination_Attempt	Off-Hook_Immediate	Subscribed

Table 29 Trigger type classification (Continued)

TDP	Trigger	Classification
Info_Collected	Off-Hook_Delay	Subscribed
Info_Collected	Shared_Interoffice_Trunk	Subscribed
Info_Collected	Channel_Setup_PRI	Subscribed
Info_Analyzed	Specific_Digit_String	Office
Info_Analyzed	N11	Office
Info_Analyzed	Public_Feature_Code	Subscribed
Info_Analyzed	Specific_Feature_Code	Subscribed
Info_Analyzed	Customized_Dialing_Plan	Subscribed
Network_Busy	AFR	Subscribed
O_Called_Party_Busy	O_Called_Party_Busy	Subscribed
O_No_Answer	O_No_Answer	Subscribed
Termination_Attempt	Termination_Attempt	Subscribed

Although the AFR trigger can be provisioned as either of ce or subscribed, all messages sent as a result of this trigger are counted as subscribed.

10.4.1 AINOGOFF OM group

The AINOGOFF group contains registers which count call-related, outgoing, of ce based, Service Enablers messages. These registers, their corresponding message types, and the trigger or event type are presented in Table 30 in order of detection points.

Table 30 AINOGOFF OM group

OM register	Message	Trigger or Event	TDP or EDP
TOIASDS	Info_Analyzed	Specific_Digit_String	TDP-R
TOIAN11		N11	
EONB	Network_Busy	Network_Busy	EDP-R
EOOCB	O_Called_Party_Busy	O_Called_Party_Busy	EDP-R
EOONA	O_No_Answer	O_No_Answer	EDP-R
EOOANS	O_Answer	O_Answer	EDP-N

Table 30 AINOGOFF OM group (Continued)

OM register	Message	Trigger or Event	TDP or EDP
IOTN	Termination_Notification		
IOCIFR	Call_Info_From_Resource		
IORCLR	Resource_Clear		
IOCLOSOO	Close		

10.4.2 AINOGSUB OM group

The AINOGSUB group contains 20 registers which count call-related, outgoing, subscribed, Service Enablers messages. These registers, their corresponding message types, and the trigger or event type are presented in Table 31 in order of detection points.

Table 31 AINOGSUB OM group

OM register	Message	Trigger or Event	TDP or EDP
TSOAOHI	Origination_Attempt	Off-Hook_Immediate	TDP-R
TSICOH	Info_Collected	Off-Hook_Delay	TDP-R
TSICSIT		Shared_Interoffice_Trunk	
TSICPRIB		Channel_Setup_PRI	
TSIAPFC	Info_Analyzed	Public_Feature_Code	TDP-R
TSIASFC		Specific_Feature_Code	
TSIACDP		Customized_Dialing_Plan	
TSIA1PLS		One_Plus_Prefix	
TSIASPCR		Specified_Carrier	
TSIAOSV		Operator_Services	
TSIAINT		International	
TSNBAFR	Network_Busy	AFR	TDP-R
ESNB		Network_Busy	EDP-R
TSOCBCB	O_Called_Party_Busy	O_Called_Party_Busy	TDP-R
ESOCB			EDP-R

Table 31 AINOFSUB OM group (Continued)

OM register	Message	Trigger or Event	TDP or EDP
TSOANA	O_No_Answer	O_No_Answer	TDP-R
ESONA			EDP-R
ESOANS	O_Answer	O_Answer	EDP-N
TSTATTA	Termination_Attempt	Termination_Attempt	TDP-R
ESTBSY	T_Busy	T_Busy	EDP-R
TSTBSY			TDP-R
ESTNA	T_No_Answer	T_No_Answer	EDP-R
TSTNA			TDP-R
ESTANS	T_Answer	T_Answ	EDP
ISCIFR	Call_Info_From_Resource		
ISRCLR	Resource_Clear		
ISCLOSOO	Close		
ISTN	Termination_Notification		

10.4.3 AINICOFF OM group

The AINICOFF group contains registers which count call-related, incoming, of ce-based, Service Enablers messages. These registers and their corresponding message types are presented in Table 32.

Table 32 AINICOFF OM group

OM register	Message
IOCON	Continue
IOAR	Analyze_Route
IODISC	Disconnect
IOSTR	Send_To_Resource
IOCRE	Cancel_Resource_Event
IOCITR	Call_Info_To_Resource
IOSN	Send_Notification

Table 32 AINICOFF OM group

OM register	Message
IORRBE	Request_Report_BCM_Event
IOCLOSI	Close
IOCINFO	Collect_Information
IOCCALL	IO Create_Call

10.4.4 AINICSUB OM group

The AINICSUB group contains registers which count call-related, incoming, subscribed, Service Enablers messages. These registers and their corresponding message types are presented in Table 33.

Table 33 AINICSUB OM group

OM register	Message
ISAR	Analyze_Route
ISCON	Continue
ISAUTHT	Authorize_Termination
ISFC	Forward_Call
ISDISC	Disconnect
ISSTR	Send_To_Resource
ISCRE	Cancel_Resource_Event
ISCITR	Call_Info_To_Resource
ISSN	Send_Notification
ISRRBE	Request_Report_BCM_Event
ISCLOSI	Close
ISCINFO	Collect_Information

10.4.5 AINNCR OM group

The AINNCR group contains registers which count all non-call-related messages. These registers and their corresponding message types are presented in Table 34.

Table 34 AINNCR OM group

OM register	Message
NACG	ACG
NAOVFW	ACG_Overflow
NAGCR	ACG_Global_Ctrl_Restore
NAGCRS	ACG_Global_Ctrl_Restore_Success
NUPREQ	Update_Request
NUPDAT	Update_Data
NMFC	Monitor_For_Change
NMSUCC	Monitor_Success
NSREP	Status_Reported
NUPD	Update
NUSUCC	Update_Success

The NAGCR, NAGCRS and the NAOVFW OM registers are only active when SOC order code AIN00210 is turned on.

10.5 AIN SSP feature operational measurements

AIN SSP is activated in the same manner as any call processing feature through the Feature Processing Environment (FPE). Several OMs measure AIN SSP feature activities which are listed in Table 35.

Table 35 AIN Essentials feature operational measurements

OM name	Register	Group
AIN Call Disconnected by Response Message	TFRAIND	TRMTFR2
AIN Call Routed to Final Treatment	TFRAINP	TRMTFR2
Usage of AIN Feature Blocks	118 AIN_FTR_BLK	EXT
Usage of AIN Processing Blocks	122 AIN_PROCESSING_BLK	EXT

Table 35 AIN Essentials feature operational measurements (Continued)

OM name	Register	Group
ACG gapped call due to SCP overload control	BLKCASCP	AINACG
ACG gapped call due to AIN SMS overload control	BLKCASMS	AINACG
ACG SCP control list overflowed	SCPOVLDO	AINACG
ACG SMS control list overflowed	SMSOVLDO	AINACG
ACG control list changed	CTRLCHA	AINACG

10.6 Non-AIN SSP-specific maintenance measurements

TR-NWT-001284 specifies requirements for several maintenance measurements in addition to those discussed above. These OMs are currently provided on an of ce-wide basis by the SSP and do not necessarily provide measurements that are specific to AIN SSP. These of ce-wide OMs are

- Network Management Control Blocks Call (except for ACG, see Table 24 on page 384)
- Incoming Calls Abandoned
- All IEC Trunks Busy
- All Telco Trunks Busy

OM group EXT

OM description

OM group extension block (EXT)

OM group EXT monitors the use of extension blocks. Extension blocks are auxiliary software resources allocated to calls for the following purposes:

- special billing records,
- data extensions for operator services
- custom calling features.

The primary purpose of an extension block is to provide additional storage for data associated with a call.

OM group EXT contains five registers: EXTHI, EXTHI2, EXTOVFL, EXTSEIZ, and EXTSEIZ2.

Register EXTHI records the maximum number of extension blocks in use at the same time during an OM transfer period. Register EXTHI2 is an extension register.

Register EXTOVFL increments when an extension block is not available. When the count is not zero, you must review the supply of extension blocks. You can increase the number of extension blocks in table OFCENG.

Register EXTSEIZ monitors the number of requests for a given type of extension block. Register EXTSEIZ2 is an extension register.

Data from OM group EXT indicates the most used extension blocks and the availability of a given type of extension block.

Registers

The following diagram illustrates OM group EXT registers as they appear on the MAP terminal display.

MAP terminal display for OM group EXT registers

```

OMSHOW EXT ACTIVE
EXT
CLASS:    ACTIVE
START:1996/11/16 14:30:00 WED; STOP: 1996/11/16 14:53:13 WED;
SLOWSAMPLES:    14 ; FASTSAMPLES:    143 ;
      KEY (EXT_FORMAT_CODE)
      INFO (EXTINFO)
      EXTSEIZ    EXTOVFL    EXTHI    EXTSEIZ2
      EXTHI2
139 OSSAINRU
      0
      0          0          0          0
      0
143 OLNS_TCAP_EXT_BLK
      0
      0          0          0          0
      0
182 HUGE_HIS_DATA_BLOCK
      50
      0          0          0          0
      0
...## BASCPS_HUGE_EXT_BLK
      16
      0          0          0          0
      0

```

Release history

The OM group EXT was introduced before BCS20.

EUR009

Two key elds added: 512 DMS250_FEATURE_EXT_FMT_CD and 560 OVERFLOW_CCB_EXT_FC.

TL010

Key eld 198 DITM_AGENT_EXT_BLOCKS added, indicating the number of data interface and topology mapping agent extension blocks provisioned (AF7401).

EUR008

Key eld 180 X_LARGE_FEATURE_DATA added, indicating the number of X_LARGE_FEATURE_DATA blocks provisioned.

NA009

Key eld B ASCPS_HUGE_EXT_BLK is introduced (AU2648).

Tuple HUGE_HIS_DATA_BLK_EXT_FCEXT_FORMAT_CODE IS 182, is added to the EXTINFO information eld (A U2626).

Added key eld entry NS_EXT_FC.

MSL07

Removed index value 102 VCDR_RECORDING_UNIT for key eld EXT_FORMAT_CODE

EUR006

Index value 148 EMERG_EXT for key eld EXT_FORMAT_CODE was introduced in EUR006.

TOPS07

Key eld entries OSA CRU and TOPS_GEN_TCAP_EXT_BLK were introduced in TOPS07.

NA007

Key eld entry 172 AIN_ORIG_INFO was introduced in NA007.

NA006

Key eld entry 135 MSGING_EXT_BLK replaced key eld entry 135 SDS_EXT_BLK in NA006.

Functional group alternate billing services (ABS00001) introduced 143 originating line number screening (OLNS) transaction capabilities application part (TCAP) extension (EXT) block (BLK) (OLNS_TCAP_EXT_BLK). Functional group OLNS_TCAP_EXT_BLK was introduced as an entry of the key eld EXT_FORMAT_CODE, through the TOPS OLNS Interface (ABS00012) functionality. Functional group 143 OLNS_TCAP_EXT_BLK provides blocks of storage for OLNS information.

Functional group enhanced services (ENSV0001) introduced 139 operator services system advanced intelligent network (OSSAIN) recording units (RU) (OSSAINRU). Functional group OSSAINRU was introduced as an entry of the key eld EXT_FORMAT_CODE, through operator services advanced intelligent network (AIN) (ENSV0014) functionality.

TOPS05

Key eld entry 147 CRS_SUBRU_POOL5 was introduced in TOPS05.

NA005Aa

OM group EXT changed for GSF software release in NA005Aa.

NA005

Key eld entry AIN_TN_EXT_FMT_CODE was introduced in NA005.

NA004

Key eld entries EA_MF_SS7_EXT_BLOCK, 135 SDS_EXT_BLK, and RTRS_TCAP_EXT_BLK were introduced in NA004.

BCS36

Key eld entries CN_AMD_TCAP_EXT_BLK, FBS_EXT_FMT_CODE, REDIR_EXT_BLKs, and DATA_CALL_TESTER_EXT were introduced in BCS36.

BCS35

Key eld entries DSD_EXT_BLKs, TC_AP_COMPONENT_EXT_BLK, GSM_MESSAGE_BLOCKS, and CRS_PRU_POOL3 were introduced in BCS35. These Key elds replaced SMDR_RECORDING_UNIT , which did not appear in BCS36.

BCS34

Key eld entries DIN_A_EXT_BLOCK, WIDEBAND_EXT_BLOCK, SBS_EXT_BLOCK, and CAMA_CALLED_EXT_BLK_ST were introduced in BCS34.

The E911 feature data blocks (FDB) replaced E911 extension blocks. Of ce parameter E911_NUMBER_OF_EXT_BLOC Kobe was replaced by two of ce parameters: NO_OF_CRITICAL_FTR_D ATA_BLKs and E911_NUMBER_OF_FDBS.

BCS33

Key eld entries REGULAR_HISTORY_DATA, LARGE_HISTORY_DATA, EXTRA_LARGE_HISTORY_DATA, CRS_SUBRU_POOL2, CRS_PRU_POOL1, CDR300_EXTND_EXT_FC, and NSS_RDD_TCAP_EXT_BLK were introduced in BCS33.

A Key eld entry HIS_D ATA_BLOCK_EXT_FC was removed in BCS33.

BCS32

Key eld entries CRS_SUBRU_POOL1, CRS_SUBRU_POOL2, CRS_SUBRU_POOL3, CRS_SUBRU_POOL4, CRS_PRU_POOL1, CRS_PRU_POOL2, MCI_POPS_REC_UNIT, SMALL_EE_EXT_BLK, MEDIUM_EE_EXT_BLK, LARGE_EE_EXT_BLK, and VCDR_RECORD_UNIT were introduced in BCS32.

Key eld entries BC_RECORDING_UNIT , BC_LAMA_REC_UNIT, MDR_EXT_BLOCK, and REAL_EXTENSION BLOCK were removed in BCS32.

BCS31

Key eld entries O VERFLOW_CCB_EXT_FC, MTX_EXT_BLOCK, and RC_EXT_FMT_CODE DMS250_EOPS_EXT_FC were introduced in BCS31.

Key eld entry DMS250_EOPS_VAL_EXT_FMT_CD was renamed in BCS31.

Registers EXTSEIZ2 and EXTHI2 were introduced in BCS31.

BCS30

Key eld TC_AP_MEDIUM_EXT_BLK was introduced in BCS30.

BCS29

Key eld entries REAL_EXTENSION_BLOCK, MDR_EXT_BLOCK, SMPDB_FC, and INTL_CCMTR_EXT_BLOCK were introduced in BCS29.

BCS28

Key eld entries E911_FMT_CODE, A CD_OVFLINQ_EXTENSION, INTL250_RECORDING_UNIT, and ZERO_PLUS_EXT_FC were introduced in BCS28.

BCS27

Key eld entries EOPS_RECORDING_UNIT, ECCBX_EXT_FC, TPBX_CCB_EXTENSION, and MTX_EXTENSION_BLOCKS were introduced in BCS27.

BCS26

Key eld entries DMS250_MCI_EOPS_EXT_FC, PVN_TERM_EXT_BLK, DMS250_BBF_EXT_BLK, FCSCS_EXT_BLK_FC, ICT_FORMAT_CODE, and SCRATCHPAD_250_EXT_FMT_CD were introduced in BCS26.

BCS25

Register EXTUSAGE was not included in BCS25.

Key eld entries CDRMTX_EXT_FMT_CD and AUX_EXTENSION_BLOCK were introduced in BCS25.

BCS24

Register EXTUSAGE was set to zero in BCS24.

Key eld entries ITOPSRU and DMS-250_FEATURE_EXT_FMT_CD were introduced in BCS24.

BCS23

Register EXTHI was introduced in BCS23.

Key eld entries ICAMA_RECORDING_UNIT, POTS_CFZ_EXTENSION, and RTEB_EXTENSION were introduced in BCS23.

BCS22

Key eld entry FTR_XLA_BLOCK_EXT_FC w as introduced in BCS22.

BCS21

Key eld entry ISUP_MSG_EXT_FC w as introduced in BCS21.

BCS20

Key eld entries CFD_EXTENSION, CDIV_EXTENSION, NTL_RECORDING_UNIT, and DCR_EXTENSION were introduced in BCS20.

OM group AIN

OM description

OM group advanced intelligent network (AIN)

OM group AIN is the platform for traffic and maintenance measurements that are specific to AIN.

Registers

The MAP terminal display that follows shows registers for OM group AIN.

Figure 1 MAP terminal display for OM group AIN registers

TRIG	TRIG2	INTROFF	INTROFF2
CPFLBFQ	CPFLAFQ	MAXQEXCD	TIOVFBFQ
CIOVFBFQ	TIOVFAFQ	CIOVFAFQ	RSPTMOUT
INVCMDMG	INVCMDSE	AMAMAX	AMASLPID
AMACONV	AINCALL	AINCALL2	AUGPEXH
CCTMOUT	DLFL		

The MAP terminal display that follows shows registers for OM group AIN.

Figure 2 OM group AIN registers

```

AIN

CLASS: ACTIVE
START:1995/02/28 10:00:00 TUE; STOP: 1995/02/28
10:18:58 TUE
SLOWSAMPLES:      1 ;      FASTSAMPLES:      4 ;

KEY (AIN_MSGSET)
  TRIG      TRIG2      INTROFF      INTROFF2
  CPFLBFQ   CPFLAFQ   MAXQEXCD   TIOVFBFQ
  CIOVFBFQ  TIOVFAFQ  CIOVFAFQ  RSPTMOUT
  INVCMDMG  INVCMDSE   AMAMAX     AMASLPID
  AMACONV   AINCALL   AINCALL2   AUGPEXH
  CCTMOUT   DLFL

1 RO1
    0          0          0          0
    0          0          0          0
    0          0          0          0
    0          0          0          0
    0          0          0          0
    0          0          0          0

7 RO2
    0          0          0          0
    0          0          0          0
    0          0          0          0
    0          0          0          0
    0          0          0          0
    0          0          0          0

```

The MAP terminal display that follows shows registers for OM group AIN for the European DMS-100 (DMS-100EUR) switch.

Figure 3 OM group AIN registers for the European DMS-100 (DMS-100EUR)

```

AIN

CLASS:  ACTIVE
START:1995/02/28 10:00:00 TUE; STOP: 1995/02/28
10:18:58 TUE
SLOWSAMPLES:          12 ;    FASTSAMPLES:          114 ;

KEY (AIN_MSGSET)
    TRIG      TRIG2      INTROFF      INTROFF2
    CPFLBFQ   CPFLAFQ   MAXQEXCD   TIOVFBFQ
    CIOVFBFQ  TIOVFAFQ  CIOVFAFQ  RSPTMOUT
    INVCMDMG  INVCMDSE  AMAMAX    AMASLPID
    AMACONV

6 INAPV8
    0          0          0          0
    0          0          0          0
    0          0          0          0
    0          0          0          0
    0

```

Note: The DMS-100EUR switch uses key field 6 INAPV8 only.

Group structure

OM group AIN provides one tuple for each key.

Key field:

AIN_MSGSET is the AIN application identifier for a call.

This OM group enables increments for R01 and R02 messages.

INAPV8 is the key field for CS-1R on the DMS-SSP. This OM group allows increments for CSR calls.

Info field:

None

Related OM groups

There are no related OM groups.

Related functional groups

There are no related functional groups.

Related functionality codes

Related functionality codes for OM group AIN follow.

Table 1 Related functionality codes for OM group AIN

Functionality	Code
AIN Base	NTXQ42AA
DSSP OAM (DMS-100EUR)	does not apply
AUS A/I-ISUP INAP I/W	AUS00038
JPN SSP to TOPS Fallback	JPN00032

For CS-1R OM increments, refer to OM group AIN of this document.

The logical flow for OM group AIN registers follows.

Figure 4 Logic flow for OM group AIN registers

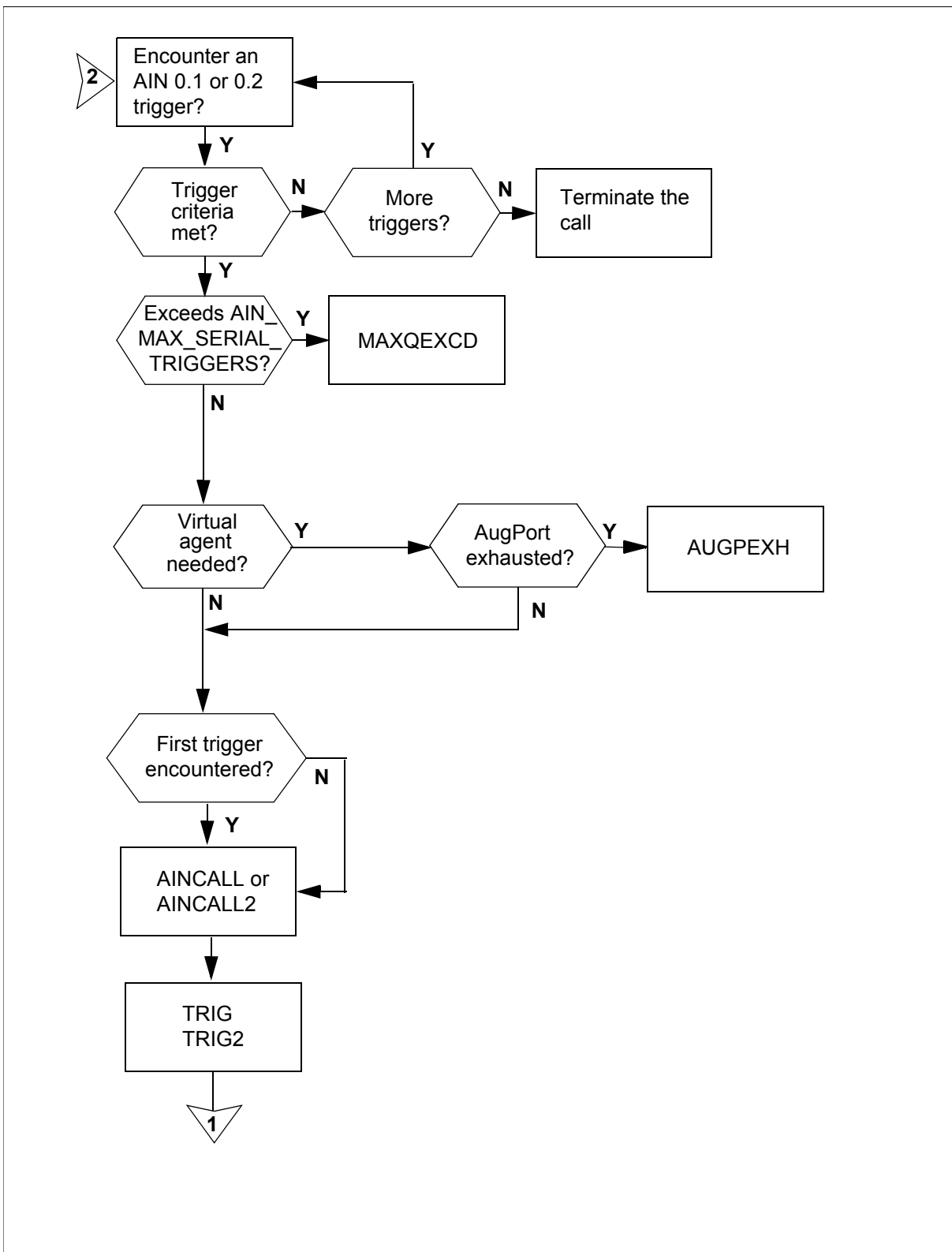


Figure 4 Logic flow for OM group AIN registers (continued)

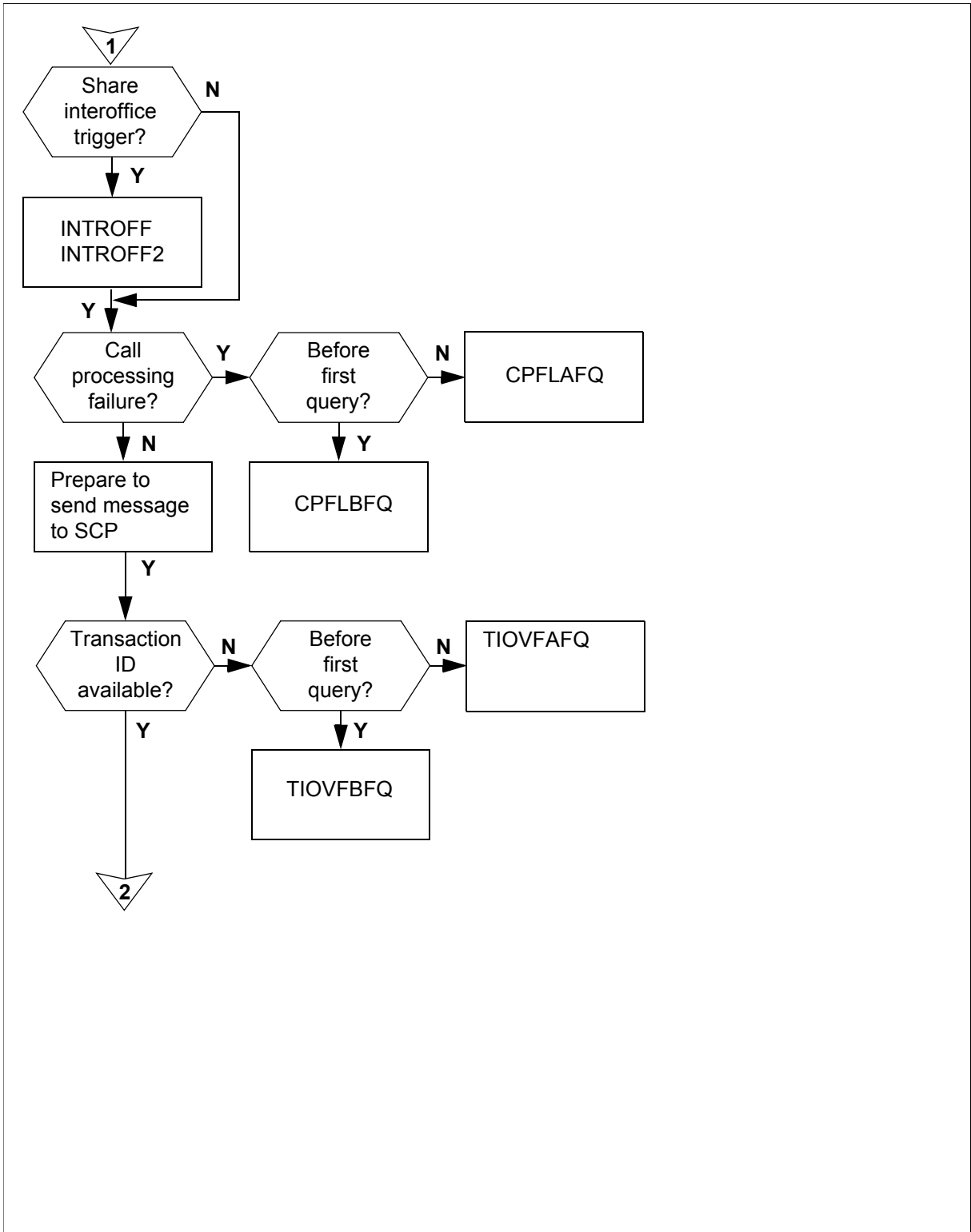


Figure 4 Logic flow for OM group AIN registers (continued)

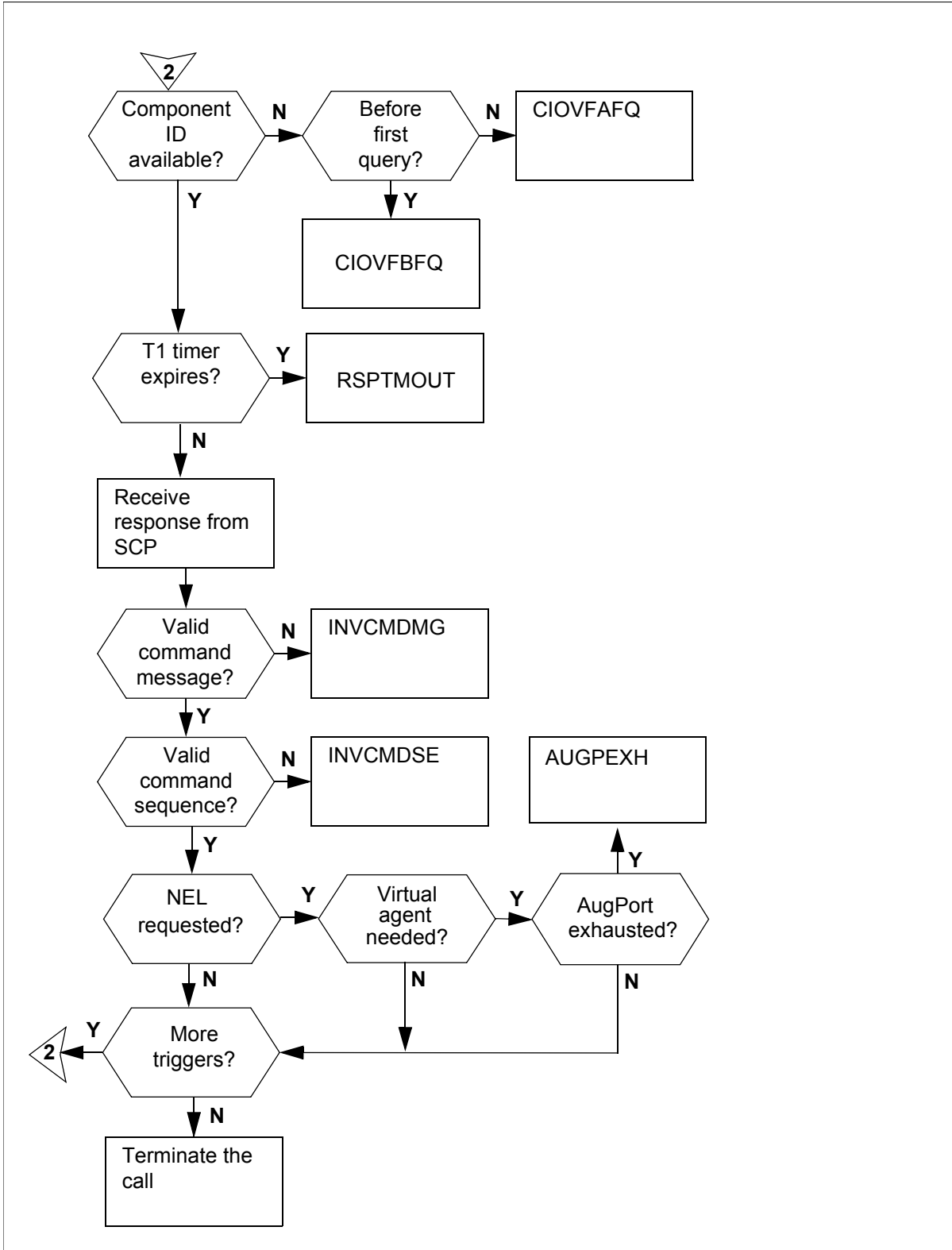
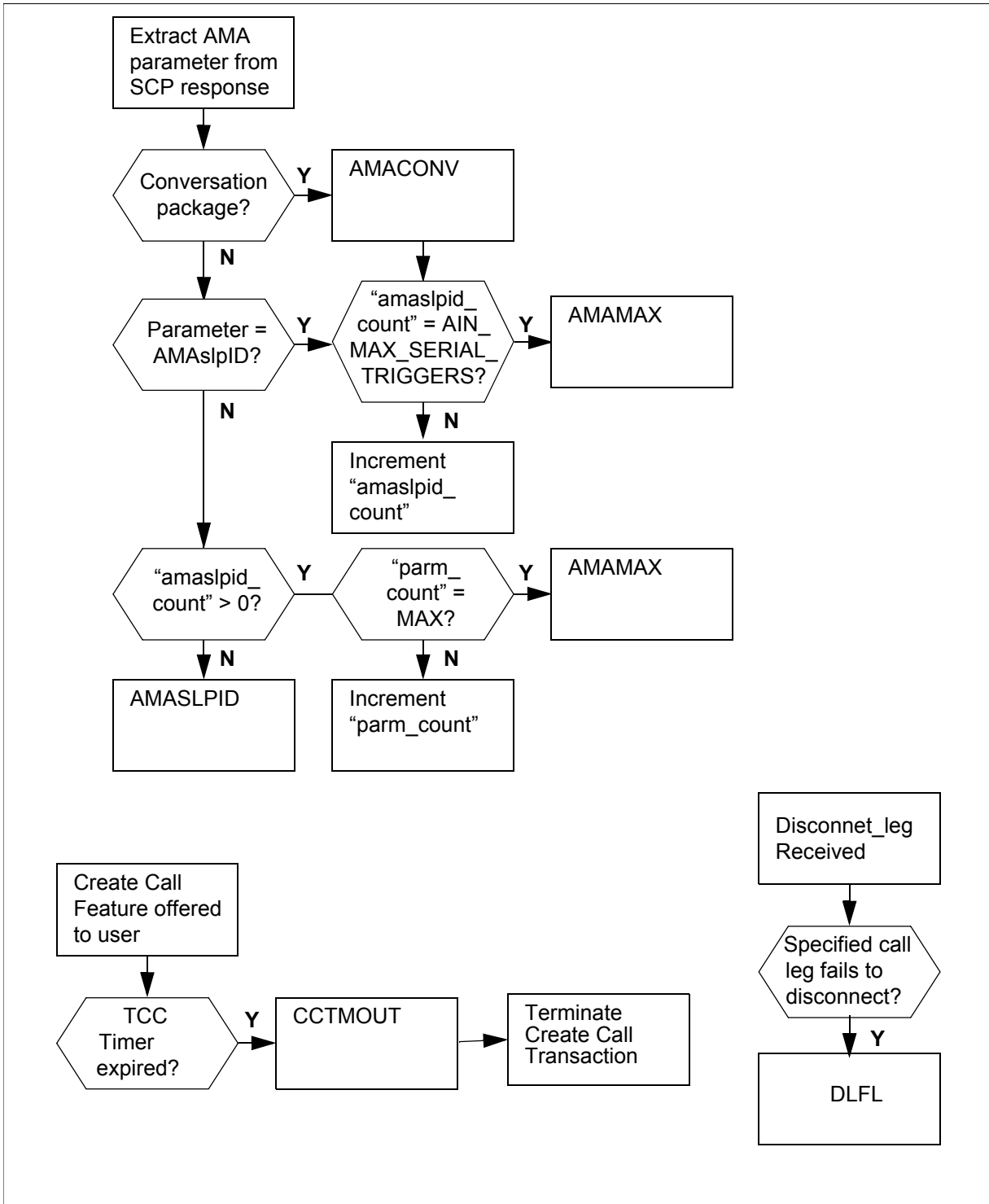


Figure 4 Logic flow for OM group AIN registers (continued)



Register AINCALL

AIN calls

Register AINCALL counts the number of AIN calls. A call that triggers is an AIN call.

For AIN, register AINCALL increments when the first AIN trigger for a call is encountered and the call meets the trigger criteria. When the call meets the trigger criteria for more than one trigger, the triggers that follow the first AIN trigger do not count as new calls. A call that fails after the call meets the trigger criteria counts as an AIN call. A call that meets switch-based call forwarding or AIN call forwarding counts as one call. A call that escapes from an AIN trigger counts as an AIN call.

Note: The occurrence of a Termination_Attempt trigger (TAT) followed by a Forward_Call message is considered another call.

Register AINCALL release history

The NA009 product release introduced register AINCALL.

Related registers

TRIG, TRIG2

Related logs

None

Extension registers

AINCALL2

Register AMACONV

Automatic message accounting conversation (AMACONV)

Register AMACONV increments any time parameter automatic message accounting (AMA) arrives at the service switching point (SSP). For register AMACONV to increase, the AMA must arrive at the SSP in a conversation package from an off-board processor.

Register AMACONV release history

The BCS36 product release introduced register AMACONV.

Related registers

There are no related registers.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register AMAMAX

Automatic message accounting maximum (AMAMAX)

Register AMAMAX increases when the maximum AMA parameters allowed for a single AMA record are exceeded. The system defines AIN AMA maximum as follows:

- the maximum number of AMAslpID parameters equals the setting of office parameter AIN_MAX_SERIAL_TRIGGERS
- 6 AMADigitsDialedWC
- 2 AMALineNumber
- 1 AMABusinessCustomerID
- 1 AMAAlternateBillingNumber

Register AMAMAX release history

The BCS36 product release introduced register AMAMAX.

Related registers

There are no related registers.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register AMASLPID

Automatic message accounting slpID (AMASLPID)

Register AMASLPID increments when any AMA parameter arrives at the SSP. For register AMASLPID to increase, the AMA must arrive in an off-board processor response message before parameter AMAslpID is received.

Register AMASLPID release history

The BCS36 product release introduced register AMASLPID.

Related registers

There are no related registers.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register AUGPEXH

AugPort resource exhausted (AUGPEXH)

Register AUGPEXH counts the number of AIN calls that fail because the system used all its AugPort resources. AugPort resources stores snapshots of call data. The system uses AugPort resources to create virtual agents.

Note 1: The system increments the counter for the R02 tuple of register AUGPEXH when the last virtual agent was created by one of the following:

- an R02 trigger
- a NEL
- a switch-based CFW
- DISA
- a VFG

Note 2: The system increments the counter for the R01 tuple of register AUGPEXH when an R01 trigger created the last virtual agent.

Register AUGPEXH release history

The NA012 product release introduced register AUGPEXH.

Related registers

There are no related registers.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register CCTMOUT

Register Create_Call Timeout (CCTMOUT) counts the number of times that the user rejects the Create_Call service by allowing a timeout after Create_Call gives notification to the user.

Register CCTMOUT release history

The NA013 product release introduces register CCTMOUT.

Related registers

OM register IOCCALL in OM group AINICOFF counts the number of times that the SSP receives valid Create_Call messages with the AIN00271 SOC option ON. Register IOCLOSO records the number of CLOSE messages sent by Create_Call functionality in addition to CLOSE messages from other AIN applications in the SSP.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register CIOVFAFQ

Register component identification overflow after the first AIN query (CIOVFAFQ).

Register CIOVFAFQ counts the number of AIN calls that fail after the system sends the first AIN query. AIN calls fail because the invoke identification is not available for the invoke component. AIN calls can fail after the system sends the first AIN query.

Register CIOVFAFQ release history

The BCS36 product release introduced register CIOVFAFQ.

Related registers

There are no related registers.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register CIOVFBFQ

Component identification overflow before the first AIN query (CIOVFBFQ).

Register CIOVFBFQ counts the number of AIN calls that fail because an invoke identification for the invoke component was not available. Register CIOVFBFQ counts the calls that fail before the system sends the first AIN query.

Register CIOVFBFQ release history

The BCS36 product release introduced register CIOVFBFQ.

Related registers

There are no related registers.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register CPFLAFQ

Register AIN call processing failure after the first query for AIN calls (CPFLAFQ).

Register CPFLAFQ counts AIN calls that fail when an SSP is off-line because of a hardware or software initialization problem. Register CPFLAFQ counts calls that fail because of a failure in the AIN call processing routine. Register CPFLAFQ counts these failures after the system sends the first AIN query.

When registers INVCMDMG and INVCMDSE count call failures, register CPFLAFQ does not count these call failures.

Register CPFLAFQ counts failures that occur for either of the following reasons:

- An AIN sub-system is out of service.
- The system receives a CONTINUE message from the SCP (The message indicates that there are more triggers at the INFO_ANALYZED TDP that are not present, and that sufficient information to continue normal routing is not available.).

Register CPFLAFQ release history

The BCS36 product release introduced register CPFLAFQ.

Related registers

There are no related registers.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register CPFLBFQ

AIN call processing failure before the first query for AIN calls (CPFLBFQ)

Register CPFLBFQ counts AIN calls that fail. Failures occur:

- because of a failure in the AIN call processing routine
- when the system terminates an SSP because of a hardware or software initialization problem
- before the system sends the first AIN query message

The system sends an AIN query message to the SS7 transport link that goes to the SCP.

Register CPFLBFQ counts failures that occur before the first query goes to the SCP. Failures occur for one of the following reasons:

- the system detects an AIN sub-system that is experiencing an out-of-service failure before the system sends the query to the SS7 transport link
- the system can not build the AIN required parameter BEARER_CAPABILITY. The system can not build BEARER_CAPABILITY because the system cannot map the incoming BEARER_CAPABILITY parameter to the correct AIN BEARER_CAPABILITY parameter.
- the system has not fulfilled requirements related with the requested digit-collection format (This results in a call take-down during pre-query digit collection.)

Register CPFLBFQ release history

The BCS36 product release introduced register CPFLBFQ.

Related registers

There are no related registers.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register INTROFF

AIN share interoffice trunk triggers (INTROFF)

Register INTROFF counts the number of AIN shared interoffice trunk triggers to accumulate the number of shared interoffice trunk calls.

For AIN calls, only the R01 and R02 INTROFF registers increase. The registers increase when a call triggers the shared interoffice trunk trigger.

Register INTROFF release history

The BCS36 product release introduced register INTROFF.

Related registers

There are no related registers.

Related logs

There are no related logs.

Extension registers

INTROFF2

Register INTROFF2

AIN share interoffice trunk triggers 2 is an overflow register for register INTROFF.

Register INTROFF2 release history

The BCS36 product release introduced register INTROFF2.

Related registers

INTROFF

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register INVCMDMG

Invalid command message for AIN calls (INVCMDMG)

Register INVCMDMG counts calls that fail. Register INVCMDMG counts call failures that occur because the SSP receives a response from the SCP. The system cannot translate the response, or the response contains wrong data.

Register INVCMDMG increases when the SSP receives an AIN message from the SCP that contains one of the following errors:

- unrecognized correlation ID
- unrecognized operation code
- missing required parameters
- missing conditional parameters
- not planned parameter sequence

- not planned communication
- not planned message
- wrong data value
- wrong parameters

Register INVCMDMG release history

The BCS36 product release introduced register INVCMDMG.

Related registers

There are no related logs.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register INVCMDSE

Invalid command sequence for AIN calls (INVCMDSE)

Register INVCMDSE counts calls that fail. Call failures occur because the SSP receives a response from the SCP that contains not complete or out-of-sequence commands.

Register INVCMDSE increases when the SSP receives an unplanned AIN message sequence.

Register INVCMDSE release history

Register INVCMDSE was introduced in the BCS36 product release.

Related registers

There are no related registers.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register MAXQEXCD

Maximum number of AIN queries exceeded for an AIN call (MAXQEXCD)

Register MAXQEXCD counts the number of AIN calls that fail because the limit on the number of AIN queries is exceeded.

For AIN calls, register MAXQEXCD increments when an AIN call fails because the limit on the number of AIN queries is exceeded.

Office parameter AIN_MAX_SERIAL_TRIGGERS in table OFCENG determines the number of times that an AIN call triggers without being routed out of the SSP. The default value for this parameter is 6.

CS-1R calls can trigger once.

Register MAXQEXCD release history

Register MAXQEXCD was introduced in the BCS36 product release.

Related registers

There are no related registers.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register RSPTMOUT

SSP time-out awaiting SCP response to an AIN or CS-1R query (RSPTMOUT)

Register RSPTMOUT counts the number of calls that fail because a reply is not sent to the SSP from the SCP, within the time interval specified by one of the following office parameters:

- AIN_T1_TIMER
- INAP_TSSF_WFI_TIMER

Register RSPTMOUT increments when a reply, in response to an AIN query, is not sent to the SSP from the SCP within the interval defined by the AIN_T1_TIMER.

Register RSPTMOUT release history

The BCS36 product release introduced register RSPTMOUT.

Related registers

There are no related registers.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register TIOVFAFQ

Transaction identification overflow or wrong after the first AIN query (TIOVFAFQ).

Register TIOVFAFQ counts AIN calls that fail. The register counts the failures that occur because the transaction identification was not available in the SSP. For the register to increment, the transaction identification must be available after the system sends the first AIN or CS-IR query.

Register TIOVFAFQ release history

The BCS36 product release introduced register TIOVFAFQ.

Related registers

There are no related registers.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register TIOVFBFQ

Transaction identification overflow or wrong before the first AIN query (TIOVFBFQ).

Register TIOVFBFQ counts AIN calls that fail because the transaction identification is not available in the SSP. For the register to increase the failure must occur before the system sends the first AIN query.

Register TIOVFBFQ release history

The BCS36 product release introduced register TIOVFBFQ.

Related registers

There are no related registers.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register TRIG

AIN triggers (TRIG)

Register TRIG counts the number of AIN or CS-IR triggers that occur.

Register TRIG increments when one of the following system activities occurs:

- The system encounters an AIN subscribed trigger (that includes trigger shared interoffice trunk).
- The system meets all the requirements of the subscribed trigger.
- The system correctly initiates the IN feature.

The system provides a second register (TRIG2) because of the potentially large number of increments to this register.

Register TRIG release history

The BCS36 product release introduced register TRIG.

Related registers

TRIG2

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register TRIG2

AIN triggers 2 (TRIG2) is an overflow register for register TRIG.

Register TRIG2 release history

The BCS36 product release introduced register TRIG2.

Related registers

TRIG

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register DLFL

Register Disconnect Leg Failures counts the number of times that the Disconnect Leg response fails to complete its task.

Register DLFL release history

The SN07 product release introduces register DLFL.

Related registers

Register ISDL records the number of subscriber-based Disconnect Leg messages received by the DMS. Register IODL records the number of office-based Disconnect Leg messages received by the SSP.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Release history

SN07 (DMS)

The SN07 (DMS) product release introduces register DLFL for activity Q00765666.

BCS36

The BCS36 product release introduced OM group AIN.

OM group AINICOFF

OM description

Advanced intelligent networks incoming of ce-based (AINICOFF)

OM group AINICOFF counts AIN Service Enablers of ce-based messages that the service control point (SCP) sends to the service switching point (SSP). OM group AINICOFF monitors the incoming traffic to the SSP .

When different triggers or events cause the SSP to send a message, a separate OM register provides a count. An OM register provides a count for each trigger and event type. OM registers increments when the system correctly sends or receives the message that corresponds to that register. The system correctly sends a message when the message is encoded into the transaction capability application part (TCAP) protocol. The system correctly receives a message when the system decodes the message from the TCAP protocol.

To decode a TCAP message involves several stages of error checking. The system counts messages after the decoding of message parameters or when errors are present in the message parameters. The system does not count a message when the system detects an error in the TCAP package or component.

Errors that can occur in the TCAP package or component follow.

- all fatal protocol errors
- errors as a result of a bad group of messages, packages, or component types
- an invalid response message
- bad correlation identifiers
- duplicated messages

OM group AINICOFF contains eleven registers that count call-related, incoming, of ce-based, Service Enablers messages. The system counts messages entered as R02 in tables TRIGDIG, TRIGITM, or TRIGINFO.

Operating company personnel can subscribe to the of ce-based triggers that follow:

- Speci c_Digit_String
- N11

Release history

The NA008 product release introduced OM group AINICOFF.

Registers

The following figure illustrates OM group AINICOFF registers as they appear on the MAP terminal display.

MAP terminal display of OM group AINICOFF registers

IOAR	IOCON	IODISC	IOSTR
IOCRE	IOCITR	IOSN	IORRBE
IOCLOSI	IOCINFO	IOCCALL	

Group structure

OM group AINICOFF provides one tuple per of ce.

Key eld:

None

Info eld:

None

Related OM groups

The following related OM groups provide AIN Service Enablers message counts:

- AIN outgoing of ce-based (AINOGOFF) counts the AIN Service Enablers of ce-based messages that the SSP sends to the SCP . This OM group monitors the outgoing traf c to the SCP .
- AIN outgoing subscription-based (AINOGSUB) counts the AIN Service Enablers subscription-based messages that the SSP sends to the SCP. This OM group monitors the outgoing traf c to the SCP .
- AIN incoming subscription-based (AINICSUB) counts the AIN Service Enablers subscription-based messages sent from the SCP to the SSP. This OM group monitors the incoming subscription traf c to the SSP .
- AIN non-call-related (AINNCR) counts the AIN messages that pass between the SSP and SSP on a non-call-related basis.

- Advanced intelligent networks (AIN) is the platform for AIN traffic and maintenance measurements. OM group AIN counts messages entered as R01 in tables TRIGDIG, TRIGINFO, or TRIGITM.
- AIN automatic code gapping (AINACG) provides operational measurements for the automatic code gapping (ACG) feature in the SSP. This OM group monitors AIN R0.1 and R0.2 queries: ACG, ACG control list overflows, and changes made to the ACG control lists.

Related OM group validation formulas follow.

- total of AINICOFF group + total of AINOGOFF group + total of AINOFSUB group + total of AINICSUB group = total call-related messages
- total of AINICOFF group + total of AINICSUB group + AINNCR registers NACG + NAGCR + NUPREQ + NMFC = total incoming Service Enablers messages received from the SCP

Related functional groups

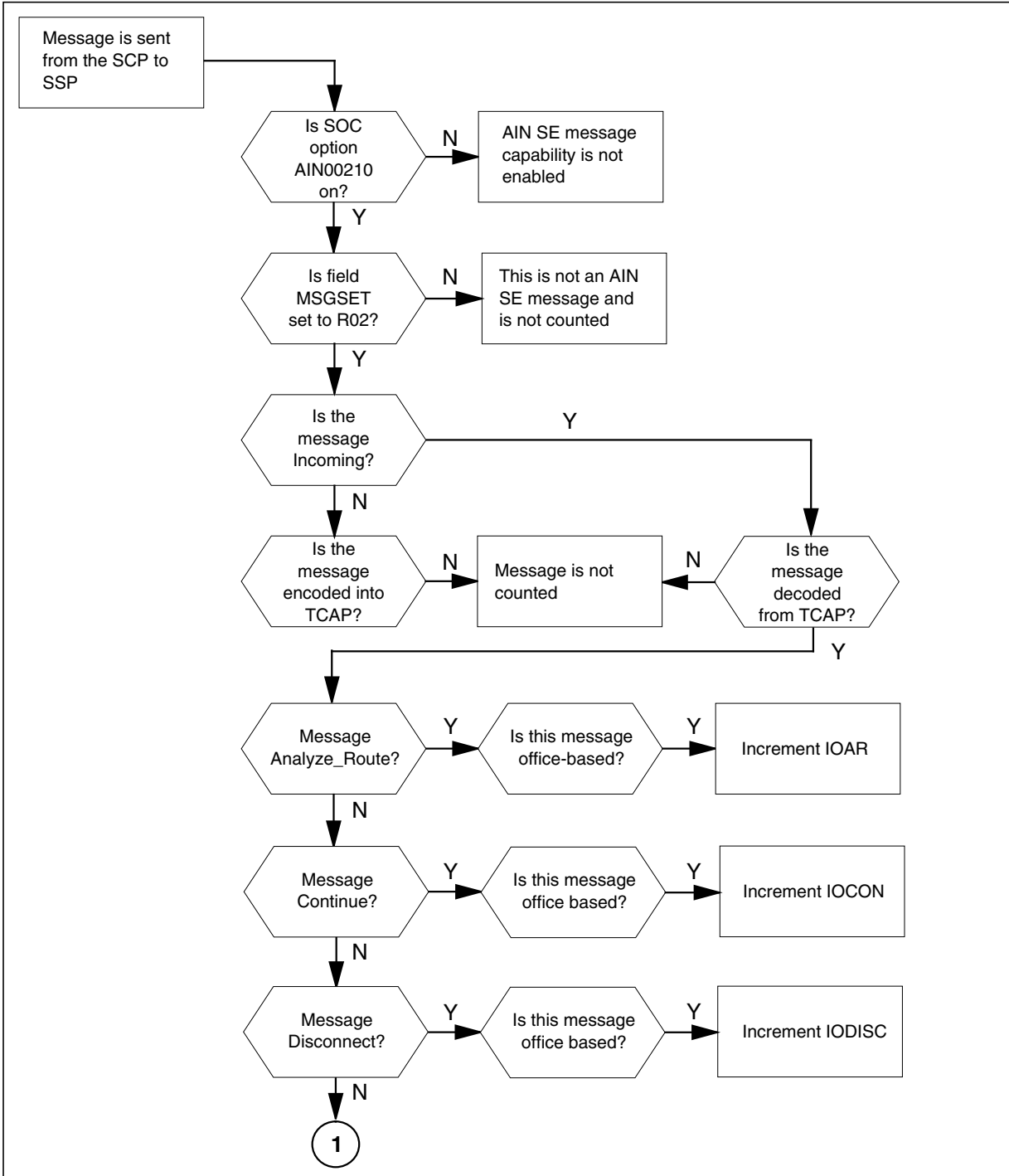
There are no related functional groups.

Related functionality codes

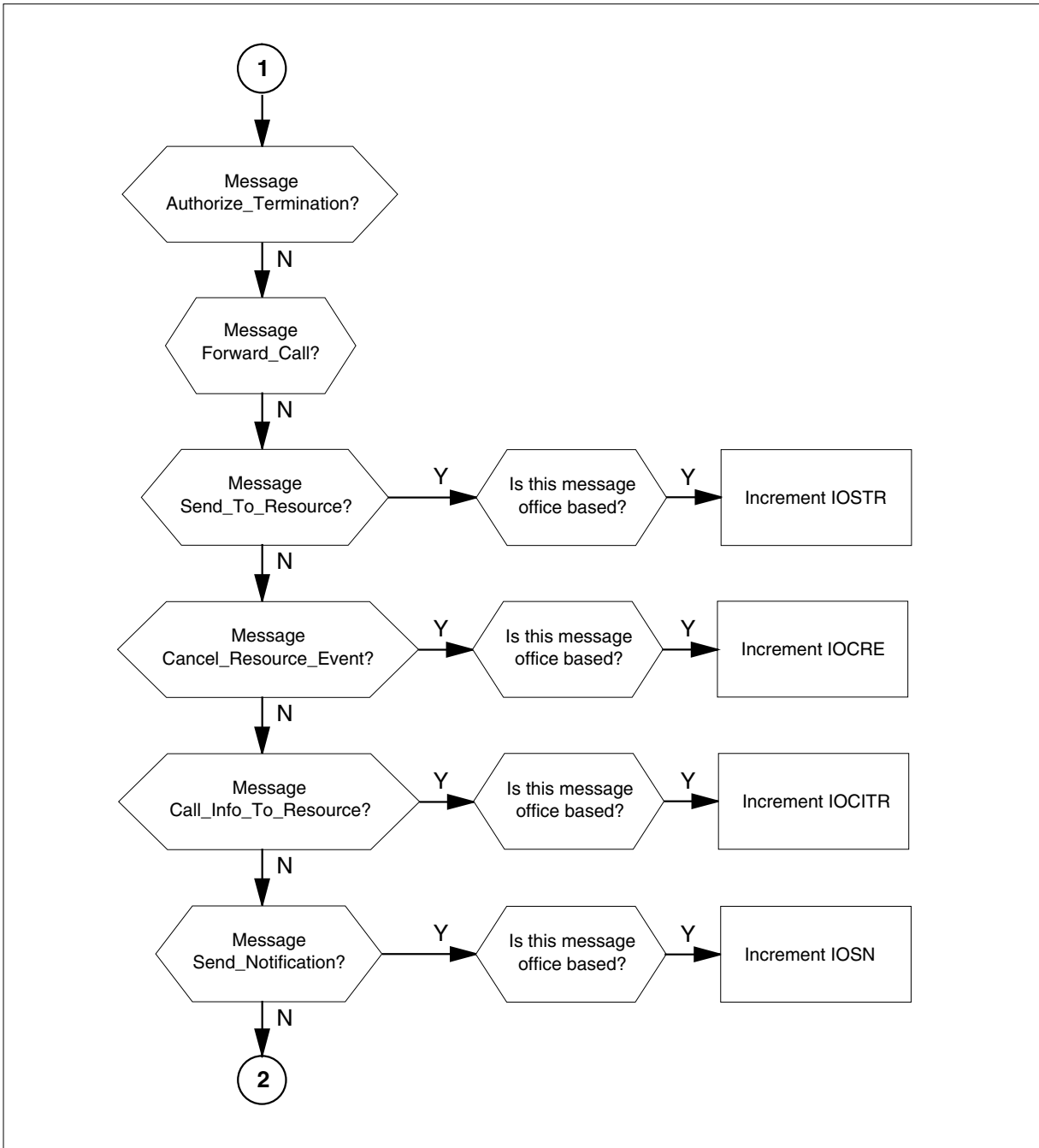
There are no related functionality codes.

The figure that follows illustrates the logical flow of OM group AINICOFF registers.

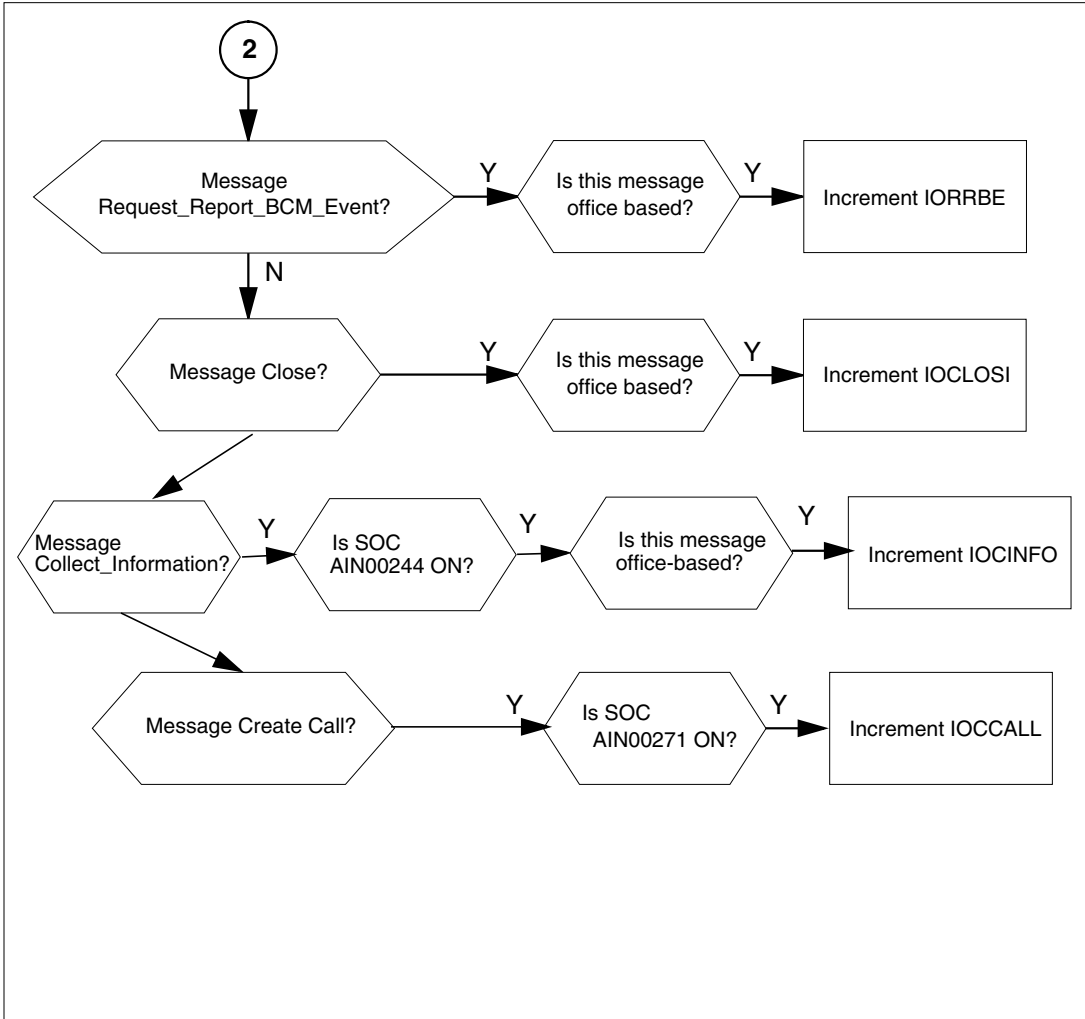
Logic flow for OM group AINICOFF registers



Logic flow for OM group AINICOFF registers (continued)



Logic flow for OM group AINICOFF registers (continued)



Register IOAR

Register IO Analyze_Route (IOAR) counts the Analyze_Route messages that the SSP receives from the SCP in a transaction that an of ce-based message initiates.

Register IOAR release history

The NA008 product release introduced register IOAR.

Related registers

Register ISAR counts the Analyze_Route messages the SSP receives from the SCP in a transaction that a line-subscribed message initiates. Registers IOAR + ISAR = total Analyze_Route messages.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register IOCON

Register IO Continue (IOCON) counts the Continue messages that the SSP receives from the SCP in a transaction that an of ce-based message initiates.

Register IOCON release history

The NA008 product release introduced register IOCON.

Related registers

Register ISCON counts the messages that the SSP receives from the SCP in a transaction that a subscribed message initiates. Registers IOCON + ISCON = total Continue messages.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register IODISC

Register IO Disconnect (IODISC) counts the disconnect messages that the SSP receives from the SCP in a transaction that an of ce-based message initiates.

Register IODISC release history

The NA008 product release introduced register IODISC.

Related registers

Register ISDISC counts the disconnect messages that the SSP receives from the SCP in a transaction that a subscribed message initiates. Registers IODISC + ISDISC = total disconnect messages.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register IOSTR

Register IO Send_To_Resource (IOSTR) counts the Send_To_Resource messages received at the SSP from the SCP in a transaction that an of ce-based message initiates.

Register IOSTR release history

The NA008 product release introduced register IOSTR.

Related registers

Register ISSTR counts the Send_To_Resource messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

Register IORCLR counts the Resource_Clear messages sent from the SSP to the SCP in a transaction that an of ce-based message initiates.

Register ISRCLR counts the Resource_Clear messages sent from the SSP to the SCP in a transaction that a subscribed message initiates.

Register IOCRE counts the Cancel_Resource_Event messages that the SSP receives from the SCP in a transaction that an of ce-based message initiates.

Register ISCRE counts the Cancel_Resource_Event messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

The validation formula for related registers follow.

- $IOSTR + ISSTR = \text{total Send_To_Resource messages}$
- $IOCRE + ISCRE = \text{total Cancel_Resource_Event messages}$

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register IOCRE

Register Cancel_Resource_Event counts the Cancel_Resource_Event messages that the SSP receives from the SCP in a transaction that an of ce-based message initiates.

Register IOCRE release history

The NA008 product release introduced register IOCRE.

Related registers

ISCRE counts the Send_To_Resource messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

IORCLR counts the Resource_Clear messages that the SSP receives from the SCP in a transaction that an of ce-based message initiates.

ISRCLR counts the Resource_Clear messages that the SSP sends to the SCP in a transaction that a subscribed message initiates.

IOSTR counts the Send_To_Resource messages the SSP receives from the SCP in a transaction that an of ce-based message initiates.

ISSTR counts the Send_To_Resource messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

The validation formulas for related registers follow.

- $IOCRE + ISCRE = \text{total Cancel_Resource_Event messages}$
- $IOSTR + ISSTR = \text{total Send_To_Resource messages}$

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register IOCITR

Register IO Call_Info_To_Resource (IOCITR) counts the Call_Info_To_Resource messages received at the SSP from the SCP in a transaction that an of ce-based message initiates.

Register IOCITR release history

The NA008 product release introduced register IOCITR.

Related registers

Register ISCITR counts the Call_Info_To_Resource messages that the SSP receives from the SCP in a transaction that a subscribed message initiates. Registers $IOCITR + ISCITR = \text{total Call_Info_To_Resource messages}$.

Register IOCIFR counts the Call_Info_From_Resource messages sent from the SSP to the SCP in a transaction that an of ce-based message initiates.

Register ISCIFR counts the Call_Info_From_Resource messages sent from the SSP to the SCP in a transaction that a subscribed message initiates.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register IOSN

Register IO Send_Notification (IOSN) counts the Send_Notification messages received at the SSP from the SCP in a transaction that an of ce-based message initiated.

Register IOSN release history

The NA008 product release introduced register IOSN.

Related registers

Register ISSN counts the Send_Notification messages that the SSP receives from the SCP in a transaction that a subscribed message initiates. Registers $IOSN + ISSN = \text{total Send_Notification messages}$.

Register IOTN counts the Termination_Notification messages that the SSP sends to the SCP in a transaction that an of ce-based message initiates.

Register ISTN counts the Termination_Notification message that the SSP sends to the SCP in a transaction that a subscribed message initiates.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register IORRBE

Register IO Request_Report_BCM_Event (IORRBE) counts the Request_Report_BCM_Event messages that the SSP receives from the SCP in a transaction that an of ce-based message initiates. Registers $IORRBE + ISRRBE = \text{total Request_Report_BCM_Event messages}$.

Register IORRBE release history

The NA008 product release introduced register IORRBE.

Related registers

There are no related registers.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register IOCLOSI

Register IO Close (IOCLOSI) counts the close messages that the SSP receives from the SCP in a transaction that an of ce-based message initiates.

Register IORRBE release history

The NA008 product release introduced register IORRBE.

Related registers

There are no related registers.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register IOCINFO

Register IO Collect_Information (IOCINFO) counts the Collect_Information messages received in response to an of ce-based trigger encounter . The register increments when the SSP correctly decodes a Collect_Info message and when AIN SOC AIN00244 is ON.

Register IOCINFO release history

The NA010 product release introduced register IOCINFO.

Related registers

Register ISCINFO counts the Collect_Information messages received in response to a subscribed trigger encounter. Registers IOCINFO + ISCINFO = total Collect_Information messages.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

10.1 Register IOCCALL

Register IO Create_Call counts the incoming Create_Call messages that the SSP receives from the SCP. The register is pegged when the SSP correctly decodes Create_Call messages and when AIN SOC AIN00271 is ON.

Register IOCCALL release history

The NA013 product release introduced register IOCCALL.

Related registers

OM register CCTMOUT in OM group AIN counts the number of times that the user rejects the Create_Call service by allowing a time-out after Create_Call gives notification to the user . Register IOCLOSO records the number of CLOSE messages sent by Create_Call functionality in addition to CLOSE messages from other AIN applications in the SSP.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

OM group AINICSUB

OM description

Advanced intelligent network incoming subscription-based (AINICSUB) counts AIN Service Enablers subscription-based messages. The service control point (SCP) sends these messages to the service switching point (SSP). The system uses OM group AINICSUB to monitor the incoming subscription-based traffic to the SSP.

The SSP can send messages that are the result of more than one type of trigger or event. A separate OM register provides a count for each trigger and event type. An OM register increments when the system correctly sends or receives the message that corresponds to the OM register. The system sends a message correctly when the system encodes the message into the transaction capability application part (TCAP) protocol. The system receives a message correctly when the system decodes the message from the TCAP protocol.

To decode a TCAP message involves several stages of error checking. The system counts the message after the system decodes the message parameters. The system decodes messages if errors are present in the message parameters. The system does not count a message when the system detects an error in the TCAP package or component.

Types of errors in the TCAP package or component follow:

- very important protocol errors
- errors as a result of a bad group of messages, packages or component types
- invalid response message
- bad correlation identifiers
- duplicated messages

OM group AINICSUB contains registers that count call-related, incoming, subscribed, AIN Service Enablers messages. The registers count messages entered as R02 in tables TRIGDIG, TRIGINFO, and TRIGITM.

The system can subscribe to the triggers that follow by line or by group:

- Off-Hook_Immediate
- Off-Hook_Delay
- Shared_Interof ce_T runk
- Public_Feature_Code
- Speci c_Feature_Code
- Customized_Dialing_Plan
- automatic e xible routing (AFR)

Note: An AFR trigger can be of ce-based or subscribed. The system counts messages sent as a result of this trigger as subscribed.

- O_Called_Party_Busy
- O_No_Answer
- Termination_Attempt
- Pre x
- T_Busy
- T_No_Answer

Release history

The NA008 product release introduced OM group AINICSUB.

Registers

OM group AINICSUB registers display on the MAP terminal as follows:

MAP terminal display of OM group AINICSUB registers

ISAR	ISCON	ISAUTH	ISFC
ISDISC	ISSTR	ISCRE	ISCITR
ISSN	ISRRBE	ISCLOSI	ISCINFO
ISOFRCL			

Group structure

OM group AINICSUB provides one tuple per of ce.

Key eld:

There is no Key eld.

Info eld:

There is no Info eld.

Related OM groups

Related OM groups that provide message counts for AIN Service Enablers follow:

- AIN outgoing of ce-based (AINOGOFF) counts the AIN Service Enablers of ce-based messages the SSP sends to the SCP. This OM group monitors the outgoing traffic to the SCP.
- AIN outgoing subscription-based (AINOGSUB) counts AIN Service Enablers subscription-based messages the SSP sends to the SCP. This OM group monitors the outgoing traffic to the SCP.
- AIN incoming of ce-based (AINICOFF) counts AIN Service Enablers of ce-based messages the SCP sends to the SSP. This OM group monitors the incoming traffic to the SSP.
- AIN non-call-related (AINNCR) counts the AIN messages that pass between the SSP and SSP on a non-call-related basis.
- Advanced intelligent networks (AIN) is the platform for AIN traffic and maintenance measurements. The OM group AIN counts messages entered as R01 in tables TRIGDIG, TRIGINFO, and TRIGITM.
- AIN automatic code gapping (AINACG) provides operational measurements for the automatic code gapping (ACG) feature in the SSP. This OM group monitors the blocking of AIN R0.1 queries by ACG, ACG control list overflows, and changes made to the ACG control lists.

Related validation formulas for the OM group follow:

- total of AINICSUB group + total of AINICOFF group
= total of all incoming call-related Service Enablers messages
- total of AINICSUB group + total of AINICOFF group + AINNCR registers NACG + NAGCR + NUPREQ + NMFC
= total incoming Service Enablers messages received from the SCP
- total of AINICSUB group + total of AINOGSUB group + total of AINICOFF group + total of AINOGOFF group
= total call-related messages

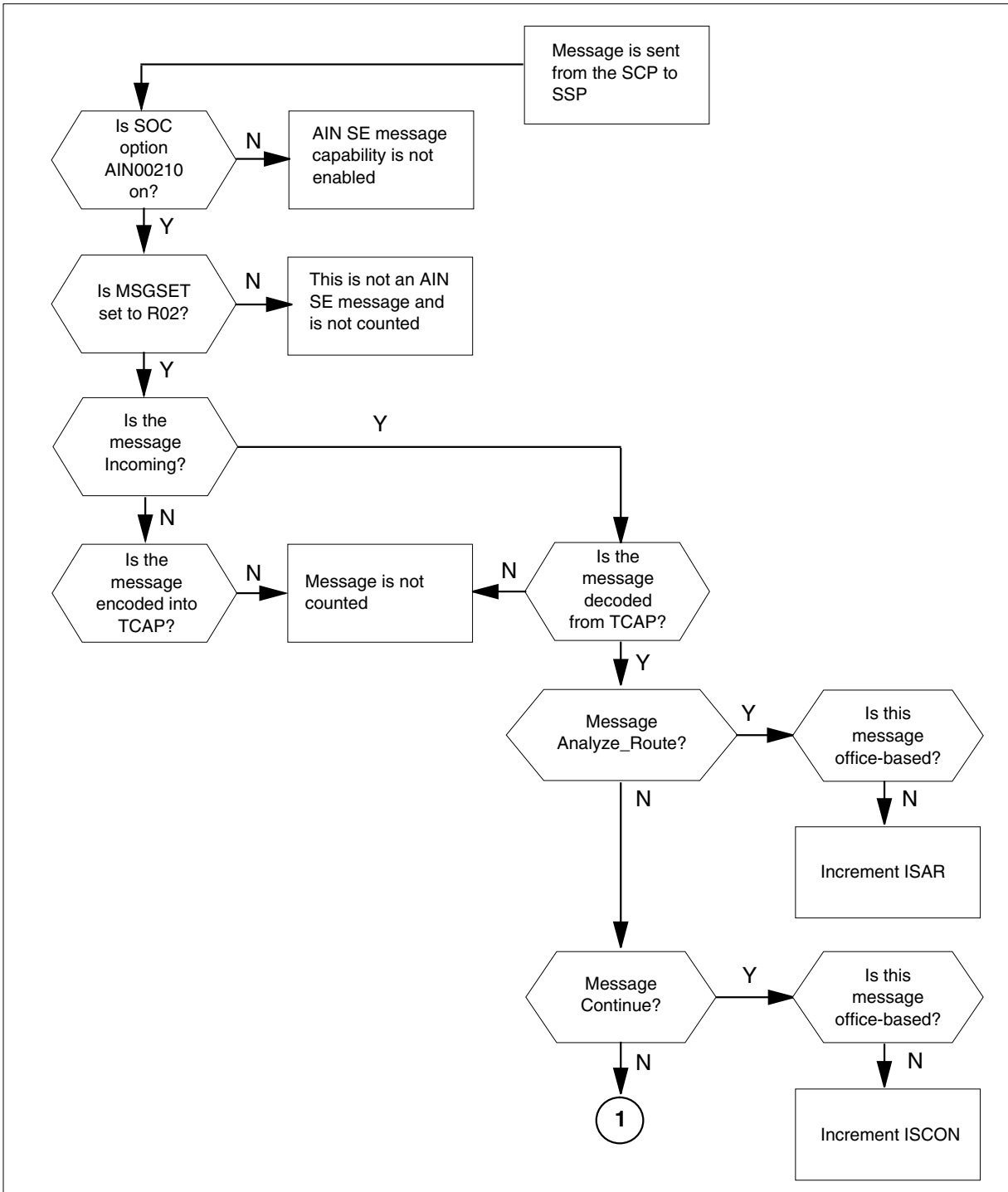
Related functional groups

There are no related functional groups.

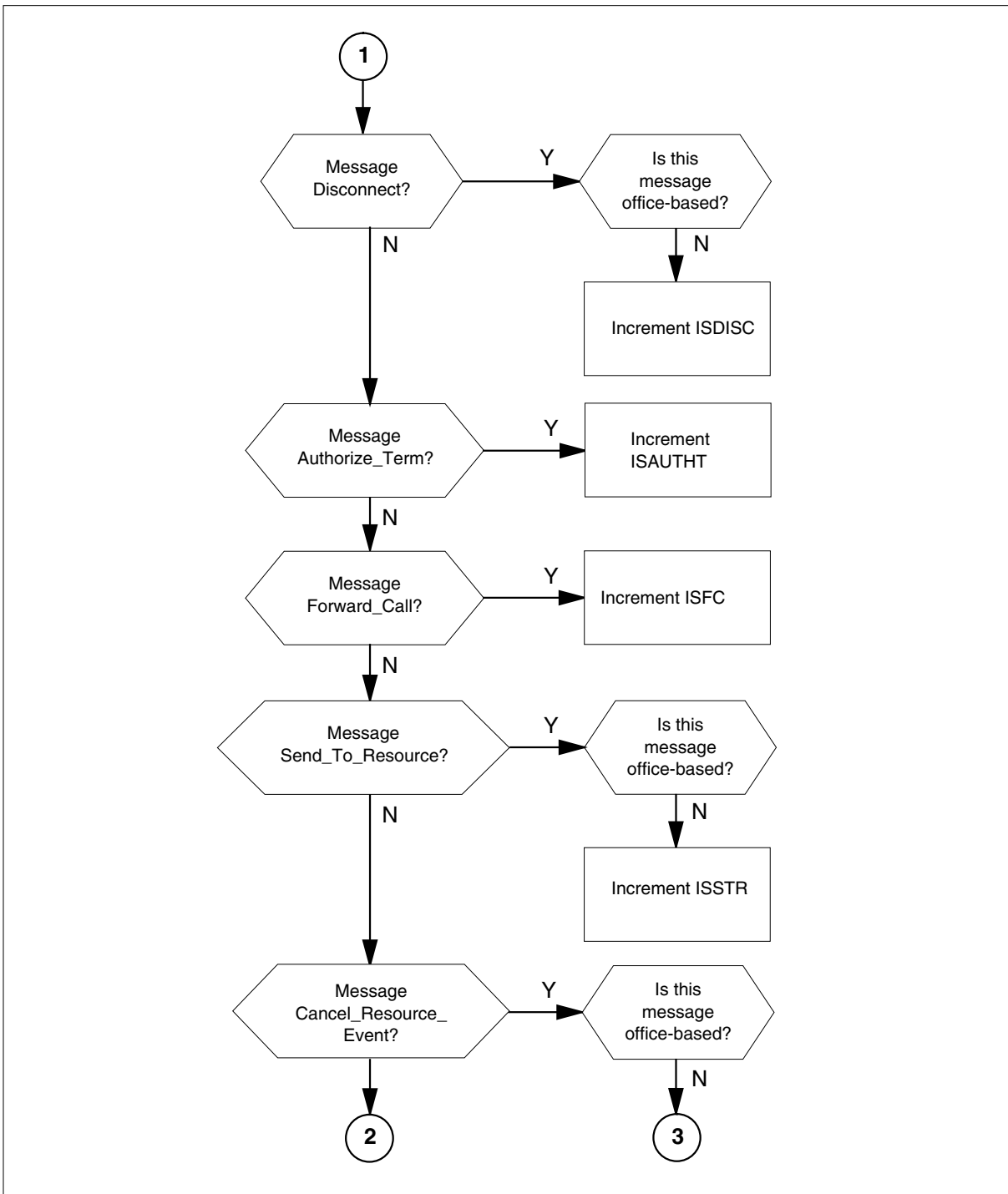
Related functionality codes

There are no correct functionality codes.

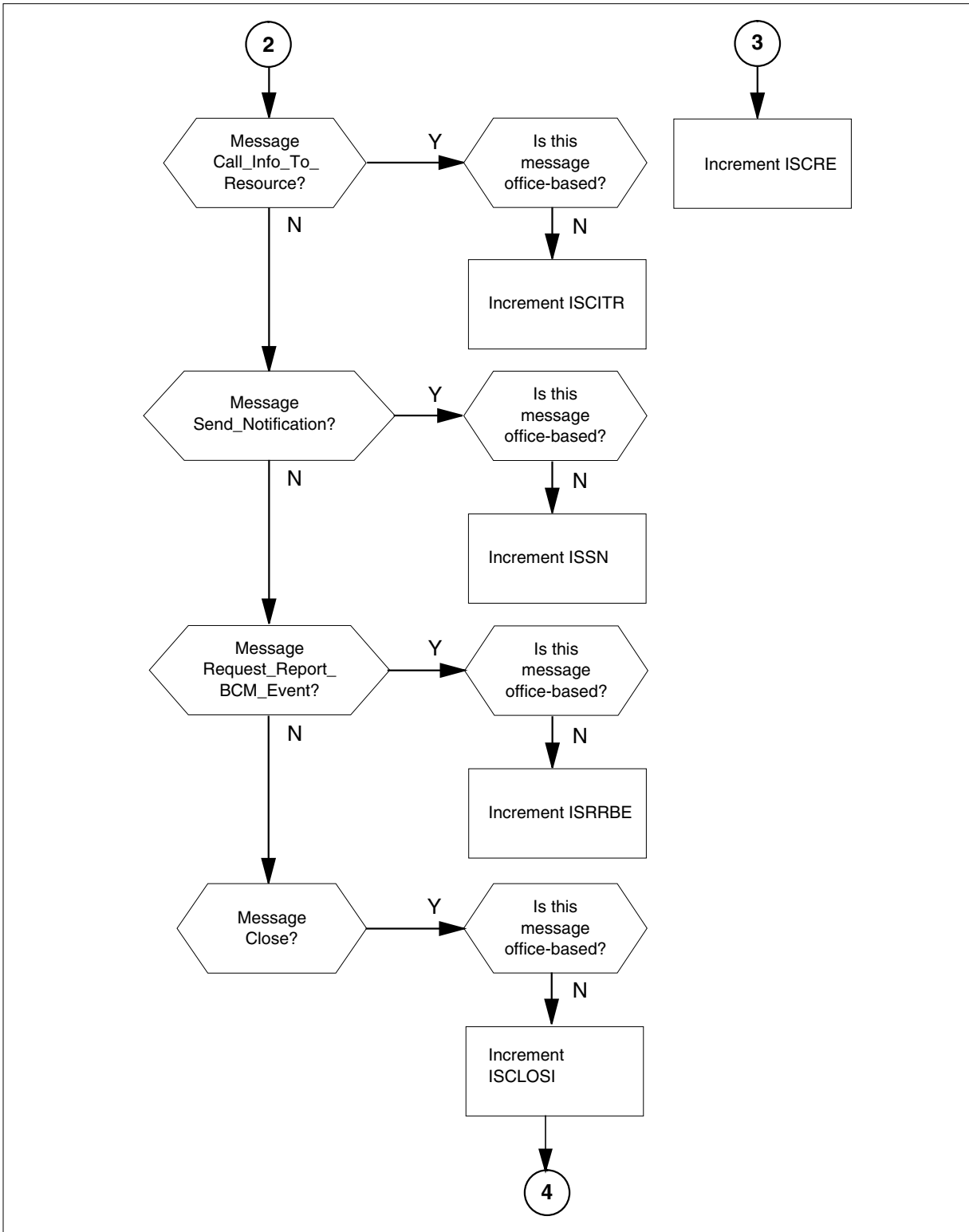
Logic flow for OM group AINICSUB registers



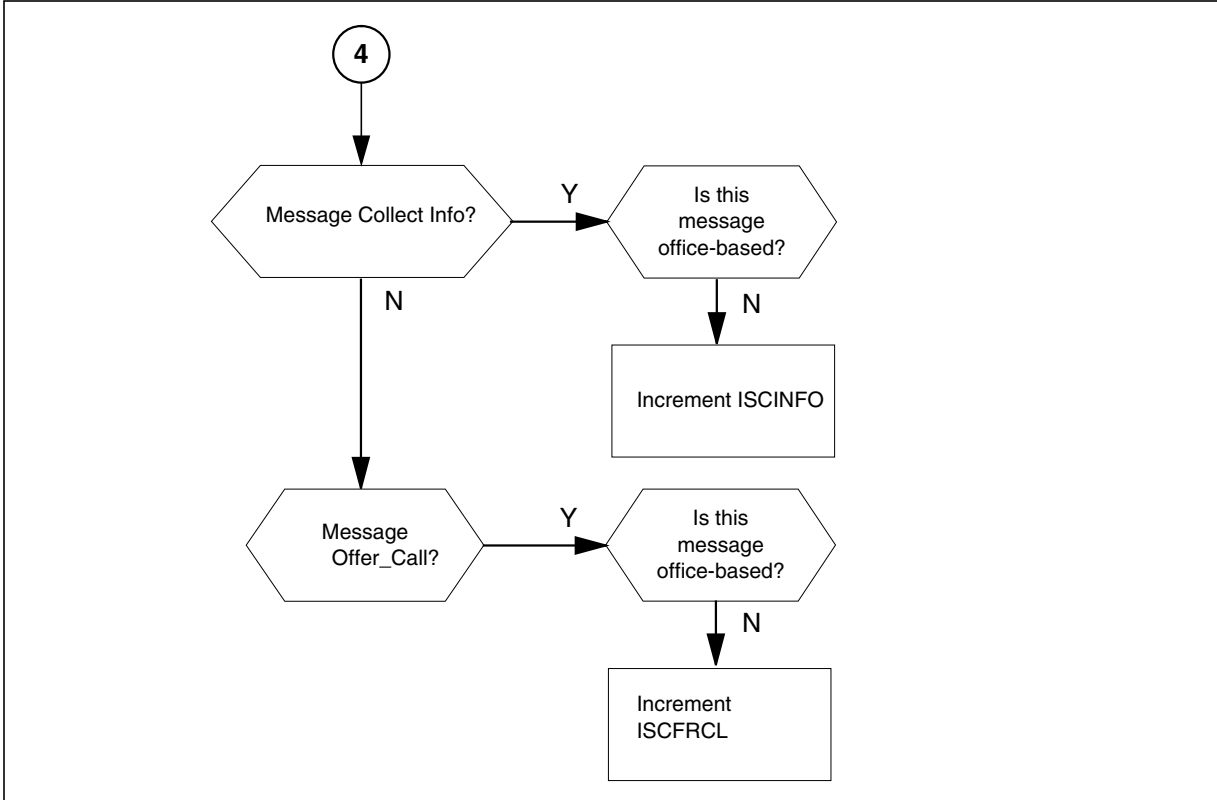
Logic flow for OM group AINICSUB registers (continued)



Logic flow for OM group AINICSUB registers (continued)



Logic flow for OM group AINICSUB registers (continued)



Register ISAR

IS Analyze_Route (ISAR)

The ISAR register counts analyze_route messages that the SSP receives from the SCP in a transaction that an subscribed message initiates.

Register ISAR release history

The NA008 product release introduced the ISAR register.

Related registers

The IOAR register counts the analyze_route messages that the SSP receives from the SCP in a transaction that an of ce-based message initiates.

Registers ISAR + IOAR = total Analyze_Route messages.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

10.1 Register ISCINFO

Interactive Subscribed Collect_Information (ISCINFO)

The ISCINFO register counts the Collect_Information messages received in response to a line-subscribed trigger encounter

Register ISCINFO release history

The NA010 release introduced the ISCINFO register.

Related registers

The IOCINFO register counts the Collect_Information messages that the SSP receives when the SSP hits an of ce subscribed trigger .

The validation formula for this register is

$ISCINFO + IOCINFO = \text{total Collect_Information messages}$

Related logs

There are no related logs.

Extension registers

There are no extension registers.

10.2 Register ISCON

Register IS Continue (ISCON) counts continue messages the SSP receives from the SCP, in a transaction that a subscribed message initiates.

Register ISCON release history

The NA008 product release introduced the ISCON register.

Related registers

Register IOCON counts the continue messages the SSP receives from the SCP in a transaction that an of ce-based message initiates. Registers $ISCON + IOCON = \text{total continue messages}$.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

10.3 Register ISAUTHT

Register IS Authorize_Termination (ISAUTHT) counts Authorize_Termination messages the SSP receives from the SCP in a transaction that a subscribed message initiates.

Register ISAUTHT release history

The NA008 product release introduced the ISAUTHT register.

Related registers

There are no related registers.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register ISFC

Register IS Forward_Call (ISFC) counts Forward_Call messages the SSP receives from the SCP in a transaction that a subscribed message initiates.

Register ISFC release history

The NA008 product release introduced the ISFC register.

Related registers

There are no related registers.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register ISDISC

Register IS Disconnect (ISDISC) counts the disconnect messages the SSP receives from the SCP in a transaction that a subscribed message initiates.

Register ISDISC release history

The NA008 product release introduced the ISDISC register.

Related registers

Register IODISC counts the disconnect messages the SSP receives from the SCP in a transaction that an of ce-based message initiates. Registers IODISC + ISDISC = total disconnect messages

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register ISSTR

Register IS Send_To_Resource (ISSTR) counts the Send_To_Resource messages the SSP receives from the SCP in a transaction that a subscribed message initiates.

Register ISSTR release history

The NA008 product release introduced the ISSTR register.

Related registers

Register IOCRE counts the Cancel_Resource_Event messages the SSP receives from the SCP in a transaction that an of ce-based message initiates.

Register IOSTR counts the Send_To_Resource messages the SSP receives from the SCP in a transaction that an of ce-based message initiates.

Register ISRCLR counts the Resource_Clear messages the SSP sends to the SCP in a transaction that a subscribed message initiates.

Register IORCLR counts the Resource_Clear messages the SSP sends to the SCP in a transaction that an of ce-based message initiates.

Validation formulas for the related registers follow:

- $IOCRE + ISCRE = \text{total Cancel_Resource_Event messages}$
- $IOSTR + ISSTR = \text{total Send_To_Resource messages}$

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register ISCRE

Register IS Cancel_Resource_Event (ISCRE) counts the Cancel_Resource_Event messages the SSP receives from the SCP in a transaction that a subscribed message initiated.

Register ISCRE release history

The NA008 product release introduced the ISCRE register.

Related registers

Register IOCRE counts the Cancel_Resource_Event messages the SSP receives from the SCP in a transaction that an of ce-based message initiates.

Register ISSTR counts the Send_To_Resource messages the SSP receives from the SCP in a transaction that a subscribed message initiates.

Register IOSTR counts the Send_To_Resource messages the SSP receives from the SCP in a transaction that an of ce-based message initiates.

Register ISRCLR counts the Resource_Clear messages the SSP sends to the SCP in a transaction that a subscribed message initiates.

Register IORCLR counts the Resource_Clear messages the SSP sends to the SCP in a transaction that an of ce-based message initiates.

Validation formulas for related registers follow:

- $IOCRE + ISCRE = \text{total Cancel_Resource_Event messages}$
- $ISSTR + IOSTR = \text{total Send_To_Resource messages}$

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register ISCITR

Register IS Call_Info_To_Resource (ISCITR) counts Call_Info_To_Resource messages the SSP receives from the SCP in a transaction that a subscribed message initiates.

Register ISCITR release history

The NA008 product release introduced the ISCITR register.

Related registers

Register IOCITR counts the Call_Info_To_Resource messages the SSP receives from the SCP in a transaction that an of ce-based message initiates. Registers $IOCITR + ISCITR = \text{total Call_Info_To_Resource messages}$

Register IOCIFR counts the Call_Info_From_Resource messages the SSP sends to the SCP in a transaction that an of ce-based message initiates.

Register ISCIFR counts the Call_Info_From_Resource messages the SSP sends to the SCP in a transaction that a subscribed message initiates.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register ISSN

Register IS Send_Notification (ISSN) counts the Send_Notification messages the SSP receives from the SCP in a transaction that a subscribed message initiates.

Register ISSN release history

The NA008 product release introduced the ISSN register.

Related registers

Register IOSN counts the Send_Notification messages the SSP receives from the SCP in a transaction that an of ce-based message initiates. Registers IOSN + ISSN = total Send_Notification messages.

Register IOTN counts the Termination_Notification messages the SSP sends to the SCP in a transaction that an of ce-based message initiates.

Register ISTN counts the Termination_Notification messages the SSP sends to the SCP in a transaction that a subscribed message initiates.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register ISRRBE

Register IS Request_Report_BCM_Event (ISRRBE) counts Request_Report_BCM_Event messages the SSP receives from the SCP in a transaction that a subscribed message initiates. Registers ISRRBE + IORRBE = total Request_Report_BCM_Event messages.

Register ISRRBE release history

The NA008 product release introduced the ISRRBE register.

Related registers

There are no related registers.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register ISCLOSI

Register IS Close (ISCLOSI) counts close messages the SSP receives from the SCP in a transaction that a subscribed message initiates.

Register ISCLOSI release history

The NA008 product release introduced the ISCLOSI register.

Related registers

There are no related registers.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register ISOFRCL

Register Interactive, Subscribed, Offer_Call (ISOFRCL) counts Offer_Call messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

Register ISCLOSI release history

The NA011 product release introduces the ISOFRCL register.

Related registers

There are no related registers.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

OM group AINNCR

OM description

Advanced intelligent networks non-call-related (AINNCR) counts AIN Service Enablers non-call-related messages. These messages pass between the service control point (SCP) and the service switching point (SSP).

Note: A non-call-related (NCR) message refers to a message that does not affect call processing.

The SSP can send messages that are the result of more than one type of trigger or event. A separate OM register provides a count for each trigger and event type. An OM register increments when the system correctly sends or receives a message that corresponds to that OM register. The system correctly sends a message when the system encodes the message into the transaction capability application part (TCAP) protocol. The system receives a message correctly when the system decodes the message from the TCAP protocol.

To decode a TCAP message involves several stages of error checking. The system counts the message after the message parameters are decoded. The system decodes messages even when errors are present in the message parameters. The system does not count the message when the system detects an error in the TCAP package or component.

Errors in the TCAP package or component are as follows:

- all fatal protocol errors
- errors as a result of a bad group of message, package or component type
- invalid response message
- bad correlation identifiers
- duplicated messages

OM group AINNCR contains 11 registers that count all non-call-related AIN Service Enablers messages. Messages entered as R02 in tables TRIGDIG or TRIGINFO are counted.

Release history

OM group AINNCR was introduced in NA008.

Registers

The following figure illustrates OM group AINNCR registers as they appear on the MAP terminal display.

MAP terminal display of OM group AINNCR registers

NACG	NAOVFW	NAGCR	NAGCRS
NUPREQ	NUPDAT	NMFC	NMSUCC
NSREP	NUPD	NUSUCC	

Group structure

OM group AINNCR provides one tuple per of ce.

Key eld:

There is no Key eld

Info eld:

There is no Info eld

Associated OM groups

The following associated OM groups provide message counts for AIN Service Enablers:

- AIN outgoing of ce-based messages (AINOGOFF) counts the AIN Service Enablers of ce-based messages the SSP sends to the SCP . This OM group monitors the outgoing traf c to the SCP .
- AIN incoming of ce-based messages (AINICOFF) counts AIN Service Enablers of ce-based messages the SCP sends to the SSP. This OM group monitors the incoming traf c to the SSP
- AIN outgoing subscription-based messages (AINOGSUB) counts the AIN Service Enablers subscription-based messages. These messages are sent from the SSP to the SCP. This OM group monitors the outgoing traf c to the SCP.
- AIN incoming subscription-based messages (AINICSUB) counts the AIN Service Enablers subscription-based messages the SCP sends to the SSP. This OM group monitors the incoming subscription traf c to the SSP .
- Advanced intelligent networks (AIN) is the platform for AIN traf c and maintenance measurements. The OM group AIN counts messages entered as R01 in tables TRIGDIG or TRIGINFO.
- AIN automatic code gapping (AINACG) provides operational measurements for the automatic code gapping (ACG) feature in the SSP. This OM group monitors the blocking of AIN R0.1 queries by ACG, ACG control list over o ws, and changes made to the ACG control lists.

The associated OM group validation formulas are as follows:

- total of AINNCR group = total non-call-related messages
- AINNCR registers NAOVFW + NAGCRS + NUPDAT + NMSUCC + NSREP + total of AINOFSUB group + total of AINOGOFF group = total outgoing messages
- AINNCR registers NACG + NAGCR + NUPREQ + NMFC + NUPD + NUSUCC + total of AINICSUB group + total of AINICOFF group = total incoming messages

Associated functional groups

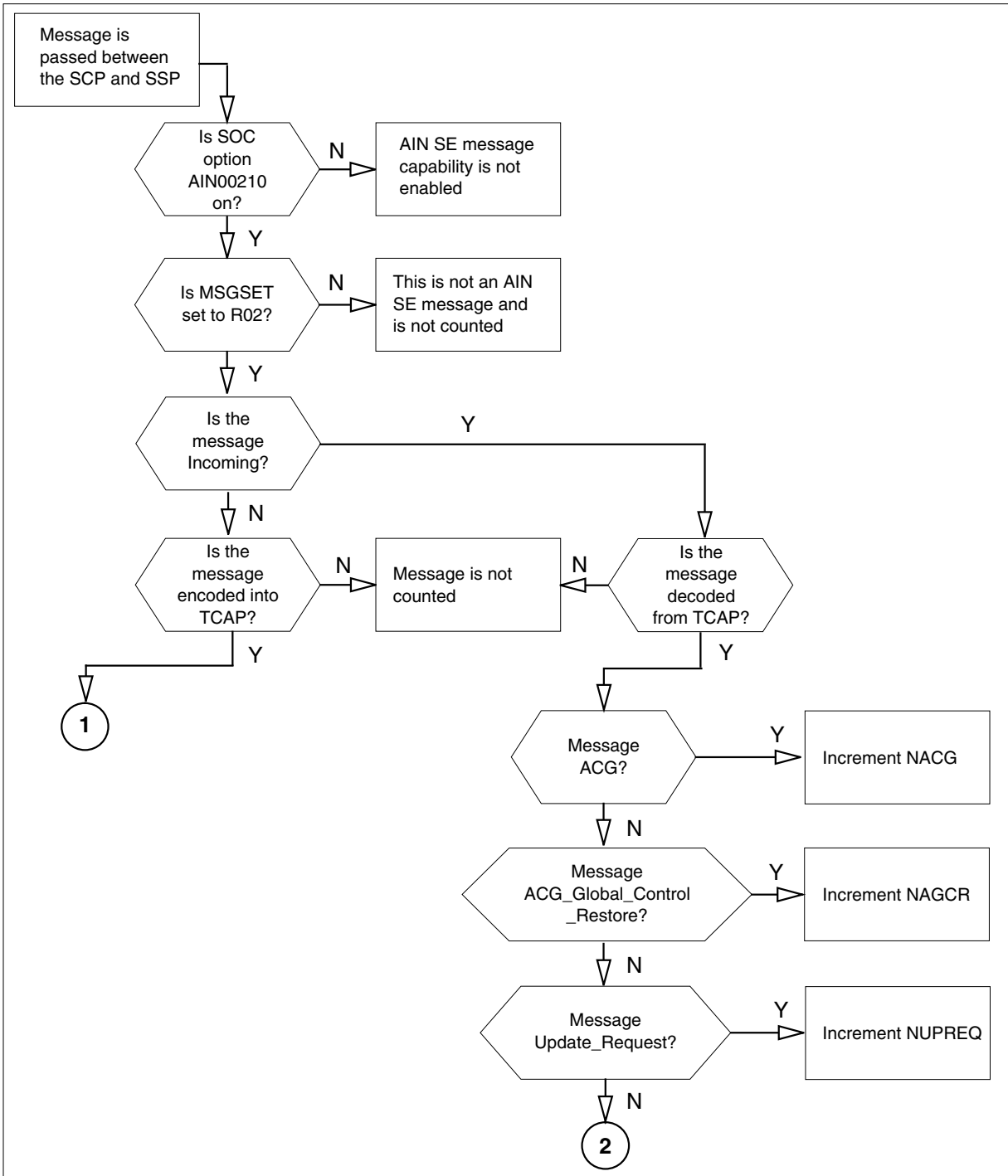
There are no correct associated functional groups.

Associated functionality codes

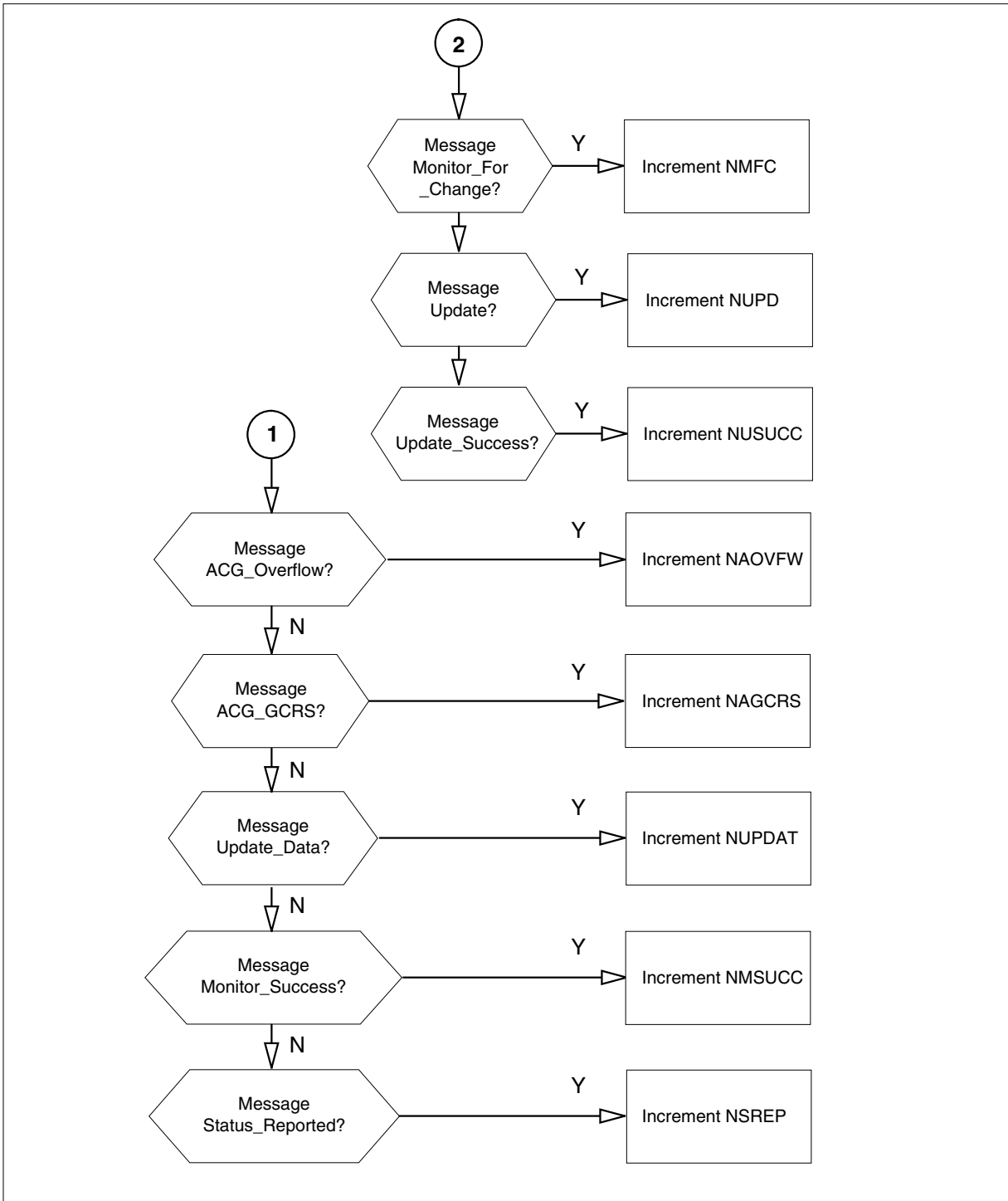
There are no correct associated functionality codes.

The following figure illustrates the logical flow for OM group AINNCR registers.

Logic flow for OM group AINNCR registers



Logic flow for OM group AINNCR registers (continued)



Register NACG

Register N Automatic_Code_Gap (NACG) counts Automatic_Code_Gap messages the SSP receives from the SCP.

The following are validation formulas for register NACG:

- $\text{AINNCR registers NACG} + \text{NAGCR} + \text{NUPREQ} + \text{NMFC} = \text{total of all incoming, non-call-related messages}$
- $\text{AINNCR registers NACG} + \text{NAGCR} + \text{NUPREQ} + \text{NMFC} + \text{total of AINICSUB group} + \text{total of AINICOFF group} = \text{total incoming messages}$
- $\text{AINNCR registers NACG} + \text{NUPREQ} + \text{NAGCR} + \text{NMFC} = \text{total of all incoming, unsolicited, non-call-related messages}$

Register NACG release history

Register NACG was introduced in NA008.

Associated registers

There are no associated registers

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register NAOVFW

Register N ACG_Over o w (NAOVFW) counts ACG_Over o w messages sent from the SSP sends to the SCP.

The following are validation formulas for register NAOVFW:

- $\text{AINNCR registers NAOVFW} + \text{NAGCRS} + \text{NUPDAT} + \text{NMSUCC} + \text{NSREP} = \text{total of all outgoing non-call-related messages}$
- $\text{AINNCR registers NAOVFW} + \text{NAGCRS} + \text{NUPDAT} + \text{NMSUCC} + \text{NSREP} + \text{total of AINOFSUB group} + \text{total of AINOGOFF group} = \text{total outgoing messages}$

Register NAOVFW release history

Register NAOVFW was introduced in NA008.

Associated registers

There are no associated registers.

Associated logs

There are no associated logs.

Extension registers

There are not extension registers.

Register NAGCR

Register N ACG_Global_Control_Restore (NAGCR) counts ACG_global_control_restore messages the SSP receives from the SCP.

The following are validation formulas for register NAGCR:

- AINNCR registers $NAGCR + NACG + NUPREQ + NMFC$ = total of all incoming, non-call-related messages
- AINNCR registers $NAGCR + NACG + NUPREQ + NMFC$ + total of AINICSUB group + total of AINICOFF group = total incoming messages
- AINNCR registers $NAGCR + NACG + NUPREQ + NMFC$ = total of all incoming, unsolicited, non-call-related messages

Register NAGCR release history

Register NAGCR was introduced in NA008.

Associated registers

There are no associated registers.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register NAGCRS

N ACG_Global_Control_Restore_Success (NAGCRS) counts ACG_global_control_restore_success messages the SSP sends to the SCP.

The following are validation formulas for register NAGCRS:

- AINNCR registers $NAGCRS + NAOVFW + NUPDAT + NMSUCC + NSREP$ = total of all outgoing non-call-related messages
- AINNCR registers $NAGCRS + NAOVFW + NUPDAT + NMSUCC + NSREP$ + total of AINOFSUB group + total of AINOGOFF group = total outgoing messages

Register NAGCRS release history

Register NAGCRS was introduced in NA008.

Associated registers

There are no associated registers.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register NUPREQ

Register N Update_Request (NUPREQ) counts Update_Request messages the SSP receives from the SCP.

The following are validation formulas for register NUPREQ:

- $\text{AINNCR registers NUPREQ} + \text{NAGCR} + \text{NACG} + \text{NMFC} = \text{total of all incoming, non-call-related messages}$
- $\text{AINNCR registers NUPREQ} + \text{NACG} + \text{NAGCR} + \text{NMFC} + \text{total of AINICSUB group} + \text{total of AINICOFF group} = \text{total incoming messages}$
- $\text{AINNCR registers NUPREQ} + \text{NAGCR} + \text{NACG} + \text{NMFC} = \text{total of all incoming, unsolicited, non-call-related messages}$

Register NUPREQ release history

Register NUPREQ was introduced in NA008.

Associated registers

There are no associated registers.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register NUPDAT

Register N Update_Data (NUPDAT) counts Update_Data messages the SSP sends to the SCP.

The following are validation formulas for register NUPDAT:

- $\text{AINNCR registers NUPDAT} + \text{NAGCRS} + \text{NAOVFW} + \text{NMSUCC} + \text{NSREP} = \text{total of all outgoing non-call-related messages}$
- $\text{AINNCR registers NUPDAT} + \text{NAGCRS} + \text{NAOVFW} + \text{NMSUCC} + \text{NSREP} + \text{total of AINOFSUB group} + \text{total of AINOGOFF group} = \text{total outgoing messages}$

Register NUPDAT release history

Register NUPDAT was introduced in NA008.

Associated registers

There are no associated registers.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register NMFC

Register N Monitor_For_Change (NMFC) counts Monitor_For_Change messages the SSP receives from the SCP.

The following are validation formulas for register NMFC:

- $\text{AINNCR registers NMFC} + \text{NACG} + \text{NAGCR} + \text{NUPREQ} + \text{total of AINICSUB group} + \text{total of AINICOFF group} = \text{total incoming messages}$
- $\text{AINNCR registers NMFC} + \text{NAGCR} + \text{NUPREQ} + \text{NACG} + \text{total of AINICSUB group} + \text{total of AINICOFF group} = \text{total incoming messages}$
- $\text{AINNCR registers NMFC} + \text{NAGCR} + \text{NACG} + \text{NUPREQ} = \text{total of all incoming, unsolicited, non-call-related messages}$

Register NMFC release history

Register NMFC was introduced in NA008.

Associated registers

There are no associated registers.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers,

Register NMSUCC

Register N Monitor_Success (NMSUCC) counts Monitor_Success messages sent from the SSP sends to the SCP.

The following are validation formulas for register NMSUCC:

- $\text{AINNCR registers NMSUCC} + \text{NAGCRS} + \text{NUPDAT} + \text{NAOVFW} + \text{NSREP} = \text{total of all outgoing non-call-related messages}$
- $\text{AINNCR registers NMSUCC} + \text{NAGCRS} + \text{NAOVFW} + \text{NUPDAT} + \text{NSREP} + \text{total of AINOgsub group} + \text{total of AINOgOFF group} = \text{total outgoing messages}$

Register NMSUCC release history

Register NMSUCC was introduced in NA008.

Associated registers

There are no associated registers.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register NSREP

Register N Status_Reported (NSREP) counts Status_Reported messages the SSP sends to the SCP.

The following are validation formulas for register NSREP:

- $\text{AINNCR registers NSREP} + \text{NAGCRS} + \text{NUPDAT} + \text{NMSUCC} + \text{NAOVFW} = \text{total of all outgoing non-call-related messages}$
- $\text{AINNCR registers NSREP} + \text{NAGCRS} + \text{NAOVFW} + \text{NUPDAT} + \text{NMSUCC} + \text{total of AINOGSUB group} + \text{total of AINOGOFF group} = \text{total outgoing messages}$

Register NSREP release history

Register NSREP was introduced in NA008.

Associated registers

There are no associated registers.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register NUPD

N Update (NUPD) counts Update messages sent from the SCP to the SSP.

Register NUPD release history

Register NUPD was introduced in NA009.

Associated registers

NUSUCC

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register NUSUCC

N Update_Success (NUSUCC) counts Update_Success messages sent from the SSP to the SCP.

Register NUPD release history

Register NUPD was introduced in NA009.

Associated registers

NUPD

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

OM group AINOGOFF

OM description

Advanced intelligent network outgoing of ce-based (AINOGOFF)

OM group AINOGOFF counts AIN Service Enablers of ce-based messages sent from the service switching point (SSP) to the service control point (SCP). OM group AINOGOFF monitors outgoing traffic to the SCP.

The SSP can send messages that are the result of more than one kind of trigger or event. A separate OM register provides a count for each trigger and event type. OM registers increment when the system sends or receives a message that corresponds to the register. A message is considered successful when it is encoded into the transaction-capability application part (TCAP) protocol. The system receives a message correctly when the message decodes from the TCAP protocol.

To decode a TCAP message involves several error checks. After the message parameters are decoded, the TCAP package counts the message when it detects no errors in the message parameters. When the TCAP package or component detects an error, a message is not counted.

The following errors can be found in the TCAP package or its components:

- all fatal protocol errors
- errors as a result of a bad group of messages, packages or component types
- invalid response message
- bad correlation identifiers
- duplicated messages

OM group AINOGOFF contains 10 registers that count call-related, outgoing, of ce-based, Service Enablers messages. The registers count messages entered as R02 in tables TRIGDIG or TRIGINFO.

The following of ce-based triggers can be subscribed:

- Specific_Digit_String
- N11

Release history

OM group AINOGOFF was introduced in NA008.

Registers

The following figure illustrates OM group AINOGOFF registers as they appear on the MAP terminal display.

OM group AINOGOFF registers

TOIASDS	TOIAN11	EONB	EOOCB	
	EOONA	EOOANS	IOTN	IOCIFR
	IORCLR	IOCLOSO		

Group structure

The OM group AINOGOFF provides one tuple for each of ce.

Key eld:

There is no key eld.

Info eld:

There is no key eld.

Associated OM groups

The following associated OM groups provide AIN Service Enablers message counts:

- The OM group AIN incoming of ce-based (AINICOFF) counts AIN Service Enablers of ce-based messages the service control point (SCP) sends to the service switching point (SSP). This OM group monitors the incoming traf c to the SSP .
- The OM group AIN outgoing subscription-based (AINOGSUB) counts the AIN Service Enablers subscription-based messages the SSP sends to the SCP. This OM group monitors the outgoing traf c to the SCP .
- The OM group AIN incoming subscription-based (AINICSUB) counts the AIN Service Enablers subscription-based messages the SCP sends to the SSP. This OM group monitors the incoming subscription traf c to the SSP.
- The OM group AIN non-call-related (AINNCR) counts AIN messages. This OM group counts the AIN messages that pass between the SSP and SSP on a non-call-related basis.

- The OM group Advanced intelligent networks (AIN) is the platform for AIN traffic and maintenance measurements. The OM group AIN counts messages entered as R01 in tables TRIGDIG or TRIGINFO.
- AIN automatic code gapping (AINACG) provides operational measurements for the automatic code gapping (ACG) feature in the SSP. This OM group monitors the following:
 - AIN R0.1 queries that ACG blocks
 - ACG control list overflows
 - changes to the ACG control lists

The validation formulas for associated OM groups follow:

- total of AINOGOFF group + total of AINOFSUB group = total outgoing call-related Service Enablers messages
- AINOGOFF registers TOIASDS + TOIAN11 + AINOFSUB registers TSIAPFC + TSIASFC + TSIACDP + TSNBAFR + TSOFCBCB + TSONANA + TSOAHI + TSICOHD + TSICSIT = total of all originating Service Enabler trigger detection point (TDP) messages.
- AINOGOFF registers EONB + EOONA + EOOANS + EOOCB + AINOFSUB registers ESNB + ESOANS + ESONA + ESOCB + ESTBSY + ESTNA = total Service Enablers event detection point (EDP) messages
- total of AINOGOFF group + total of AINOFSUB group + total of AINICOFF group + total of AINICFSUB group = total call-related messages
- total of AINOGOFF group + total of AINOFSUB group + AINNCR registers NAOVFW + NAGCRS + NUPDAT + NMSUCC + NSREP = total outgoing messages
- AINOGOFF registers TOIASDS + TOIAN11 + AINOFSUB registers TSIAPFC + TSIASFC + TSIACDP = total Info_Analyzed messages

Associated functional groups

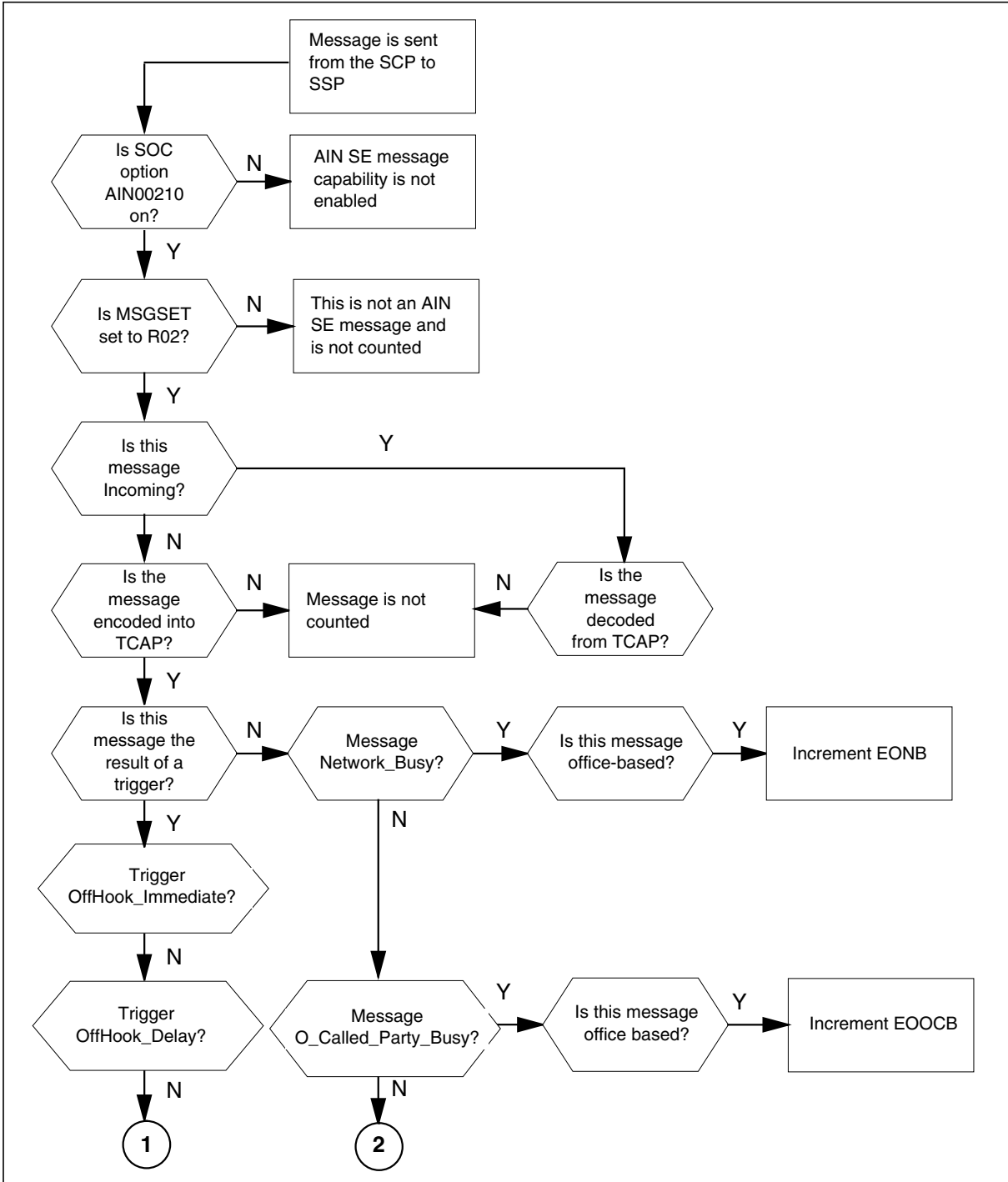
There are no applicable associated functional groups.

Associated functionality codes

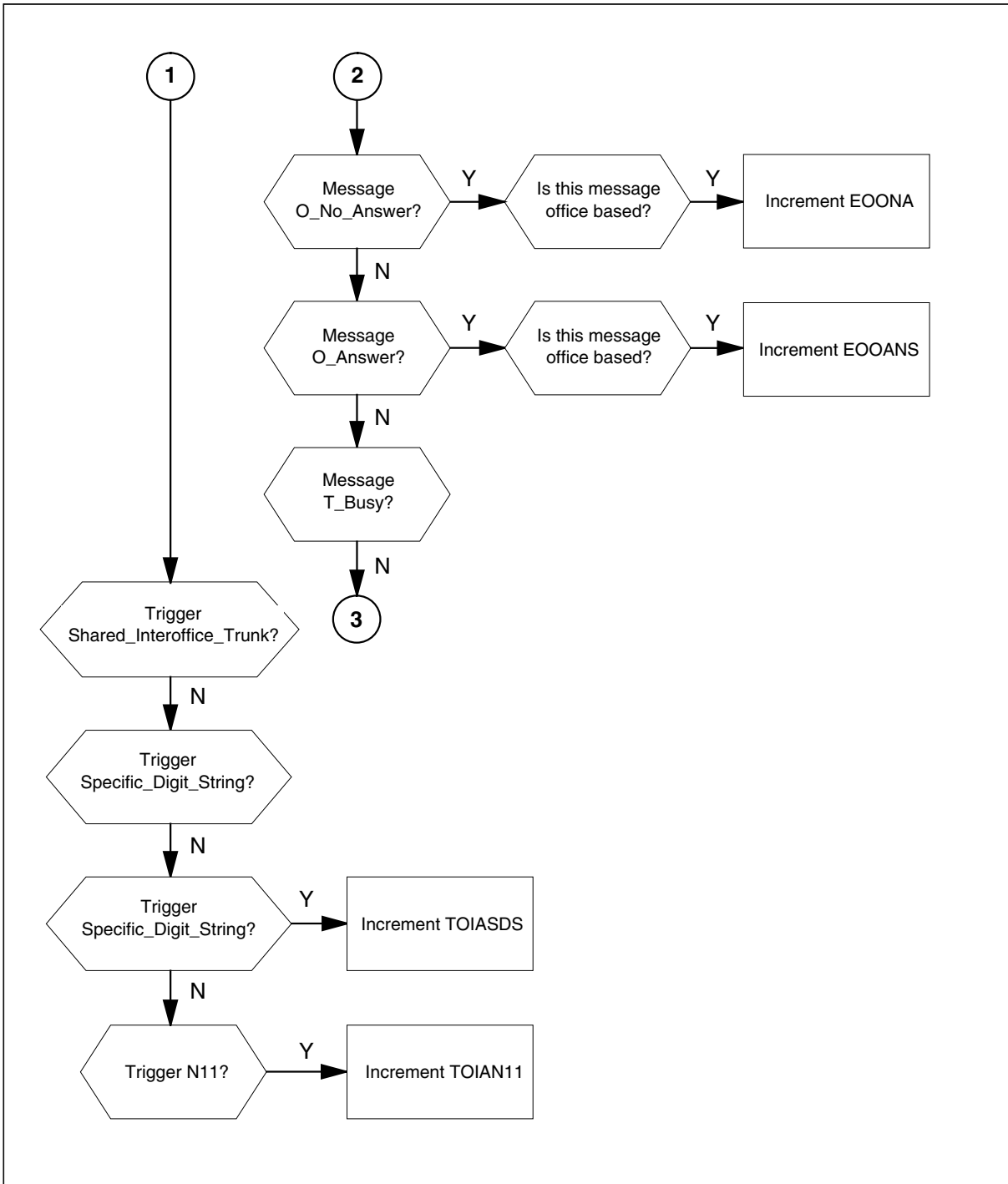
There are no applicable associated functionality codes.

The following figure illustrates the logical flow for OM group AINOGOFF registers.

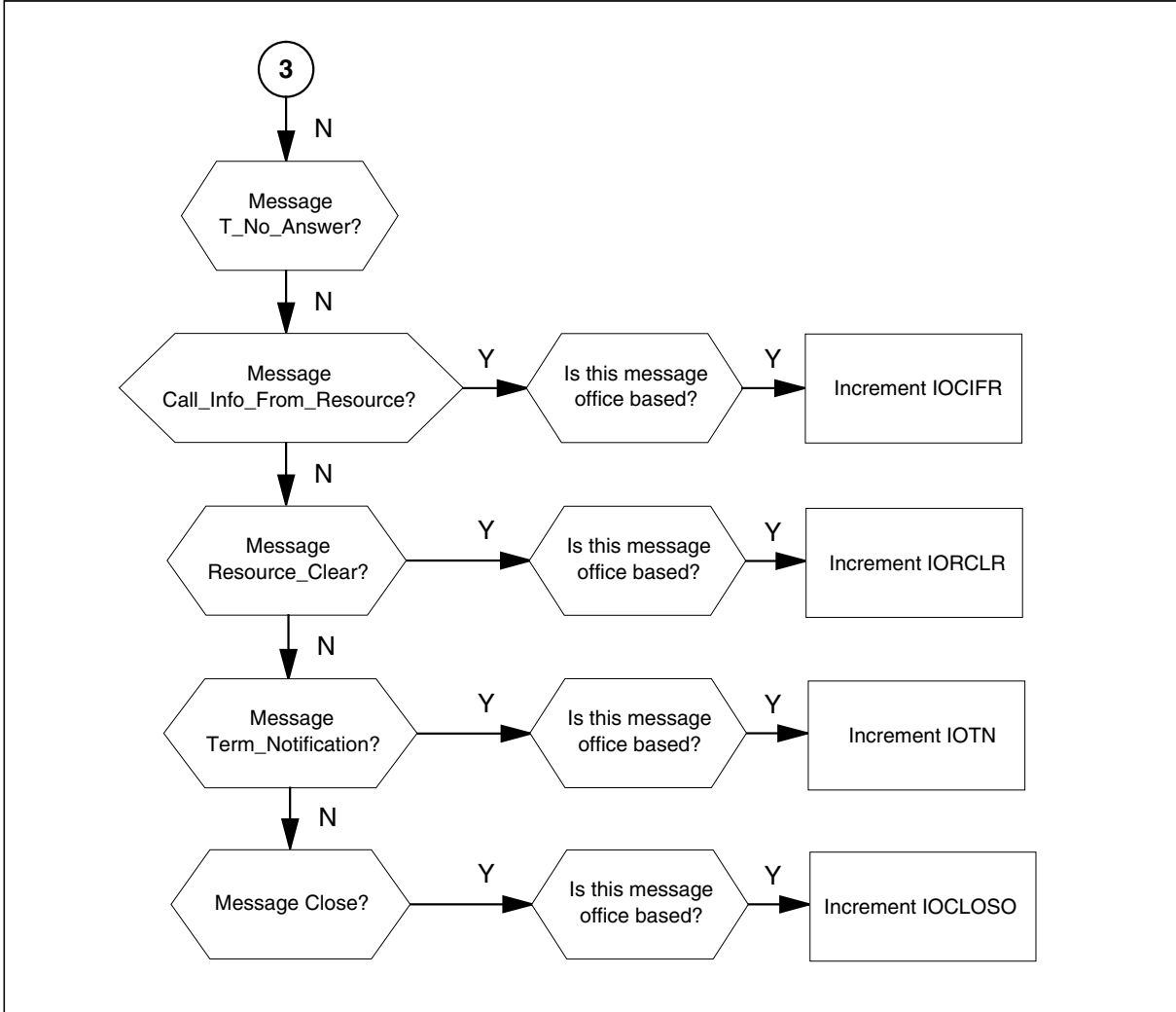
OM group AINGOFF registers



OM group AINOGOFF registers (continued)



OM group AINGOFF registers (continued)



Register TOIASDS

TO Info_Analyzed for Speci c_Digit_String (T OIASDS)

Register TOIASDS counts Info_Analyzed messages the SSP sends to the SCP. These messages are a result of a Speci c_Digit_String trigger at the Info_Analyzed trigger detection point

Register TOIASDS release history

Register TOIASDS was introduced in NA008.

Associated registers

There are no associated registers.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register TOIAN11

TO Info_Analyzed for N11 TOIAN11

Register TOIAN11 counts Info_Analyzed messages the SSP sends to the SCP. The messages are a result of a N11 trigger at the Info_Analyzed trigger detection point.

Register TOIAN11 release history

Register TOIAN11 was introduced in NA008.

Associated registers

There are no associated registers.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register EONB

EO Network_Busy (EONB)

Register (EONB) counts the number of Network_Busy messages the SSP sends to the SCP. These messages are a result of a Network_Busy event request.

Register EONB release history

Register EONB was introduced in NA008.

Associated registers

Register ESNB counts Network_Busy messages the SSP sends to the SCP. The messages are a result of a Network_Busy event request.

The validation formulas for associated registers follow:

- AINOGSCUB register ESNB + AINOGOFF registers EONB + TSNBAFR = total Network_Busy messages
- AINOGOFF registers EONB + EOONA + EOOANS + EOOCB + AINOGSUB registers ESNB + ESOANS + ESONA + ESOCB + ESTBSY + ESTNA = total Service Enablers event detection point (EDP) messages

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register EOOCB

EO O_Called_Party_Busy (EOOCB)

Register EOOCB counts O_Called_Party_Busy messages the SSP sends to the SCP. These messages are a result of an O_Called_Party_Busy event request.

Register EOOCB release history

Register EOOCB was introduced in NA008.

Associated registers

Register ESOCB counts O_Called_Party_Busy messages the SSP sends to the SCP. These messages are a result of an O_Called_Party_Busy event request. AINGOSUB registers ESOCB + TSOCBCB + AINOGOFF register EOOCB = total O_Called_Party_Busy messages.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register EOONA

EO O_No_Answer (EOONA)

Register EOONA counts O_No_Answer messages the SSP sends to the SCP. These messages are a result of an O_No_Answer event request.

Register EOONA release history

Register EOONA was introduced in NA008.

Associated registers

Register ESONA counts O_No_Answer messages the SSP sends to the SCP. These messages are a result of a O_No_Answer event request. AINOGSUB registers ESONA + TSONANA + EOOANA = total O_No_Answer messages.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register EOOANS

EO O_Answer (EOOANS)

EO O_Answer (EOOANS) counts O_Answer messages sent from the SSP to the SCP. These messages are a result of an O_Answer event request.

Register EOOANS release history

Register EOOANS was introduced in NA008.

Associated registers

Register ESOANS counts O_Answer messages the SSP sends to the SCP. These messages are a result of a O_Answer event request. AINOGSUB register ESOANS + AINOGOFF register EOOANS = total O_Answer messages.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register IOTN

IO Termination_Notification (IOTN)

Register IOTN counts Termination_Notification messages the SSP sends to the SCP, in a transaction that initiates by an of ce-based message.

Register IOTN release history

Register IOTN was introduced in NA008.

Associated registers

Register ISTN counts Termination_Notification messages sent from the SSP to the SCP, in a transaction that a subscribed message initiates.

Register IOSN counts Send_Notification messages received at the SSP from the SCP, in a transaction that an of ce-based message initiates.

Register ISSN counts Send_Notification messages received by the SSP from the SCP, in a transaction that a subscribed message initiates.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register IOCIFR

IO Call_Info_From_Resource (IOCIFR)

Register IOCIFR counts Call_Info_From_Resource messages the SSP sends to the SCP in a transaction that an of ce-based message initiates.

Register IOCIFR release history

Register IOCIFR was introduced in NA008.

Associated registers

Register ISCIFR counts Call_Info_From_Resource messages the SSP sends to the SCP, in a transaction that a subscribed message initiates. AINOGSUB register ISCIFR + AINOGOFF register IOCIFR = total Call_Info_From_Resource messages.

Register IOCITR counts Call_Info_To_Resource messages received at the SSP from the SCP, in a transaction that an of ce-based message initiates.

Register ISCITR counts Call_Info_To_Resource messages received by the SSP from the SCP, in a transaction that a subscribed message initiates.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register IORCLR

IO Resource_Clear (IORCLR)

Register IORCLR counts Resource_Clear messages sent from the SSP to the SCP, in a transaction an of ce-based message initiates IO Resource_Clear .

Register IORCLR release history

Register IORCLR was introduced by NA008.

Associated registers

Register ISRCLR counts Resource_Clear messages sent from the SSP to the SCP, in a transaction that initiates by a subscribed message. AINOFSUB register $ISRCLR + AINOGOFF$ register IORCLR = total Resource_Clear messages.

Register IOSTR counts Send_To_Resource messages received at the SSP from the SCP, in a transaction that an of ce-based message initiates.

Register IOCRE counts Cancel_Resource_Event messages received at the SSP from the SCP, in a transaction that an of ce-based message initiates.

Register ISSTR counts Send_To_Resource messages received by the SSP from the SCP, in a transaction that a subscribed message initiates.

Register ISCRE counts Cancel_Resource_Event messages received by the SSP from the SCP, in a transaction that a subscribed message initiates.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register IOCLOSO

IO Close IOCLOSO

Register IOCLOSO counts Close messages the SSP sends to the SCP, in a transaction that an of ce-based message initiates.

Register IOCLOSO release history

Register IOCLOSO was introduced in NA008.

Associated registers

Register ISCLOSO counts Close messages the SSP sends to the SCP, in a transaction that a subscribed message initiated. AINOFSUB register $ISCLOSO + AINICOFF$ register IOCLOSI + AINICSUB register $ISCLOSI + AINOGOFF$ register IOCLOSO = total closed messages.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

OM group AINOGSUB

OM description

OM group advanced intelligent networks outgoing subscription-based (AINOGSUB), counts AIN Service Enablers subscription-based messages sent by the service switching point (SSP) to the service control point (SCP). OM group AINOGSUB monitors outgoing traffic to the SCP.

The SSP can send messages that are the result of more than one type of trigger or event. A separate OM register provides a count for each trigger and event type. OM registers increment when the system sends or receives a message that corresponds with the register. A correct message is sent when the system encodes the message into transaction capability application part (TCAP) protocol. A correct message is received when the system decodes the message from TCAP protocol.

The system performs several stages of error checks to decode a TCAP message. The system decodes the message parameters and counts the messages. The system counts a message even when errors are present in the message parameters. The system does not count a message when the system detects an error in the TCAP package or its components.

The following errors can be detected in a TCAP package or its components:

- all fatal protocol errors
- errors as a result of a bad group of messages, packages or component types
- an invalid response message
- bad correlation identifiers
- duplicated messages

OM group AINOGSUB contains 20 registers that count call-related, outgoing, subscribed, Service Enablers messages. The registers count messages entered as R02 in tables TRIGDIG or TRIGINFO.

The following triggers are subscribed to by line or group:

- Off-Hook_Immediate
- Off-Hook_Delay
- Shared_Interface_Trunk
- Public_Feature_Code
- Specific_Feature_Code
- Customized_Dialing_Plan

- automatic e xible routing (AFR)

Note: Trigger AFR can be of ce-based or subscribed. All messages sent as a result of this trigger are counted as subscribed.

- O_Called_Party_Busy
- O_No_Answer
- Termination_Attempt

Release history

OM group AINOGSUB was introduced in NA008.

Registers

The following figure illustrates OM group AINOGSUB registers as they appear on the MAP terminal display.

OM group AINOGSUB registers

TSOAOHI	TSICOH	TSICSIT	TSIAPFC
TSIASFC	TSIACDP	TSNBAFR	ESNB
TSOCBCB	ESOCB	TSOANA	ESONA
ESOANS	TSTATTA	ESTBSY	ESTNA
ISCIFR	ISRCLR	ISCLOSO	ISTN

Group structure

OM group AINOGSUB can provide one tuple per of ce.

Key eld:

There is no Key eld.

Info eld:

There is no Info eld.

Associated OM groups

The following associated OM groups provide AIN Service Enablers message counts:

- OM group AIN outgoing of ce-based (AINOGOFF) counts AIN Service Enablers of ce-based messages the SSP sends to the SCP . OM group AINOGOFF monitors the outgoing traf c to the SCP .
- OM group AIN incoming of ce-based (AINICOFF) counts AIN Service Enablers of ce-based messages the (SCP) sends to the (SSP). OM group AINICOFF monitors the incoming traf c to the SSP .

- OM group AIN incoming subscription-based (AINICSUB) counts the AIN Service Enablers subscription-based messages the SCP sends to the SSP. This OM group monitors the incoming subscription traffic to the SSP.
- OM group AIN non-call-related (AINNCR) counts the AIN messages that pass between the SSP and SSP on a non-call-related basis.
- OM group advanced intelligent networks (AIN) is the platform for AIN traffic and maintenance measurements. OM group AIN counts messages entered as R01 in tables TRIGDIG or TRIGINFO.
- OM group AIN automatic code gapping (AINACG) provides operational measurements for the automatic code gapping (ACG) feature in the SSP. This OM group monitors AIN R0.1 queries ACG blocks, ACG control list overflows, and changes made to the ACG control lists.

The associated OM group validation formulas are as follows:

- total of AINOFSUB group + total of AINOFF group = total outgoing call-related Service Enabler messages
- AINOFF registers TOIASDS + TOIAN11 + AINOFSUB registers TSIAPFC + TSIASFC + TSIACDP + TSNBAFR + TSOFCBCB + TSONANA + TSOAOHI + TSICOHD + TSICSIT = total originating basic call model (BCM) Service Enablers trigger detection point (TDP) messages
- AINOFF registers EONB + EONA + EOOANS + EOOCB + AINOFSUB registers ESNB + ESONA + ESOANS + ESOFCB + ESTBSY + ESTNA = total Service Enablers event detection point (EDP) messages
- total of AINOFSUB group + total of AINICSUB group + total of AINIOFF group + total of AINOFF group = total call-related messages
- total of AINOFSUB group + total of AINOFF group + AINNCR registers NAOVFW + NAGCRS + NUPDAT + NMSUCC + NSREP = total outgoing messages
- AINOFF registers TOIASDS + TOIAN11 + AINOFSUB registers TSIAPFC + TSIASFC + TSIACDP = total Info_Analyzed messages
- AINOFF register EONB + AINOFSUB registers ESNB + TSNBAFR = total Network_Busy messages

Associated functional groups

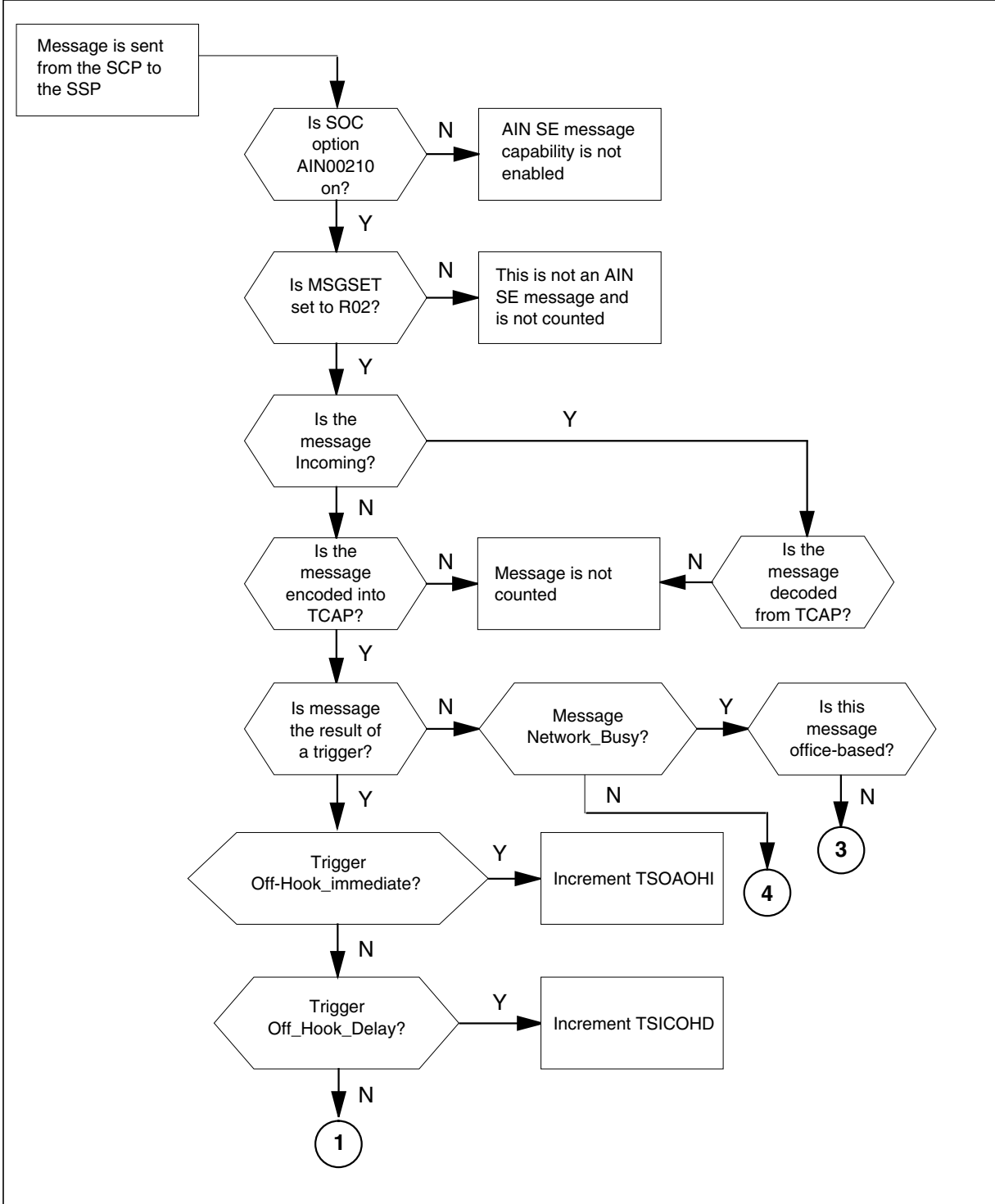
There are no associated functional groups.

Associated functionality codes

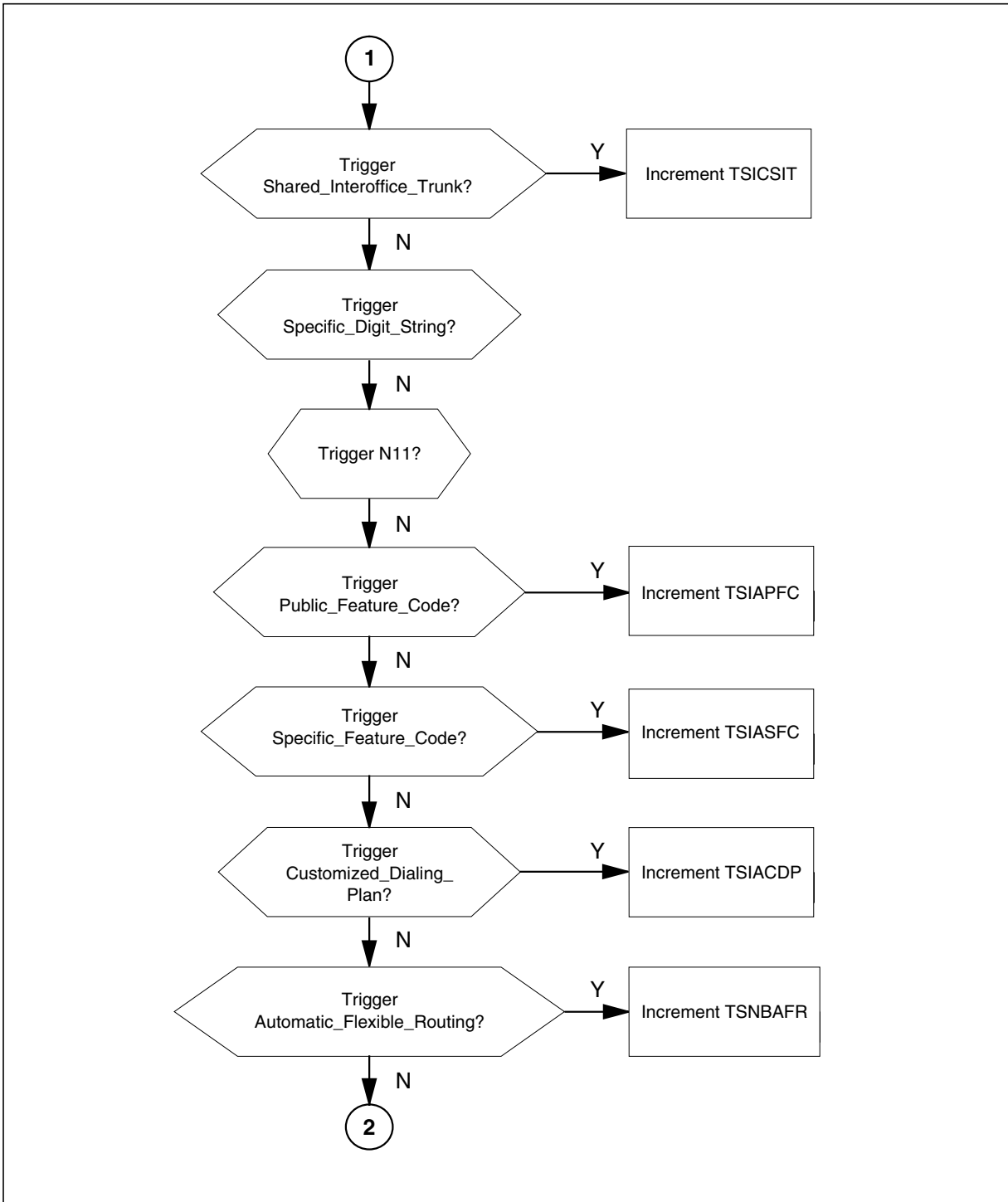
There are no associated functionality codes.

The following figure illustrates the logical flow of OM group AINOGSUB registers.

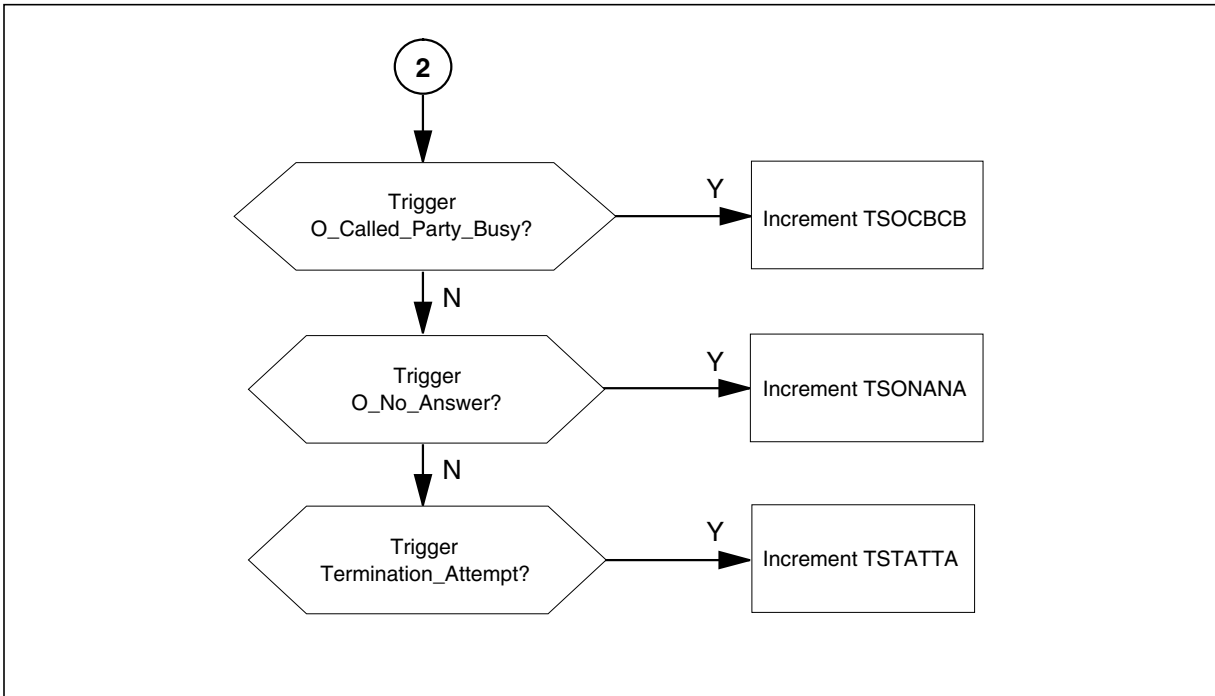
OM group AINOGSUB registers logic flow



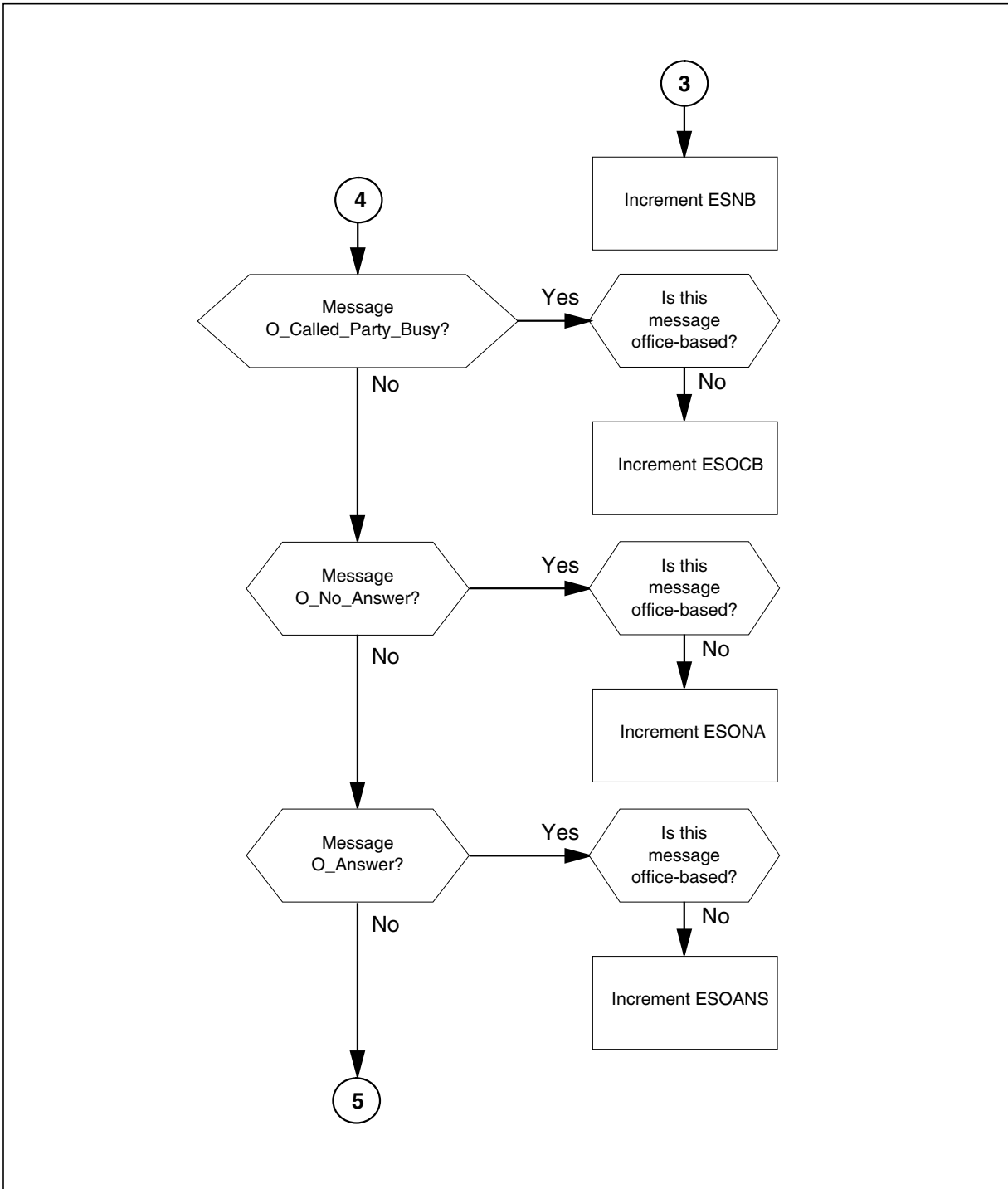
OM group AINOGSUB registers logic ow (continued)



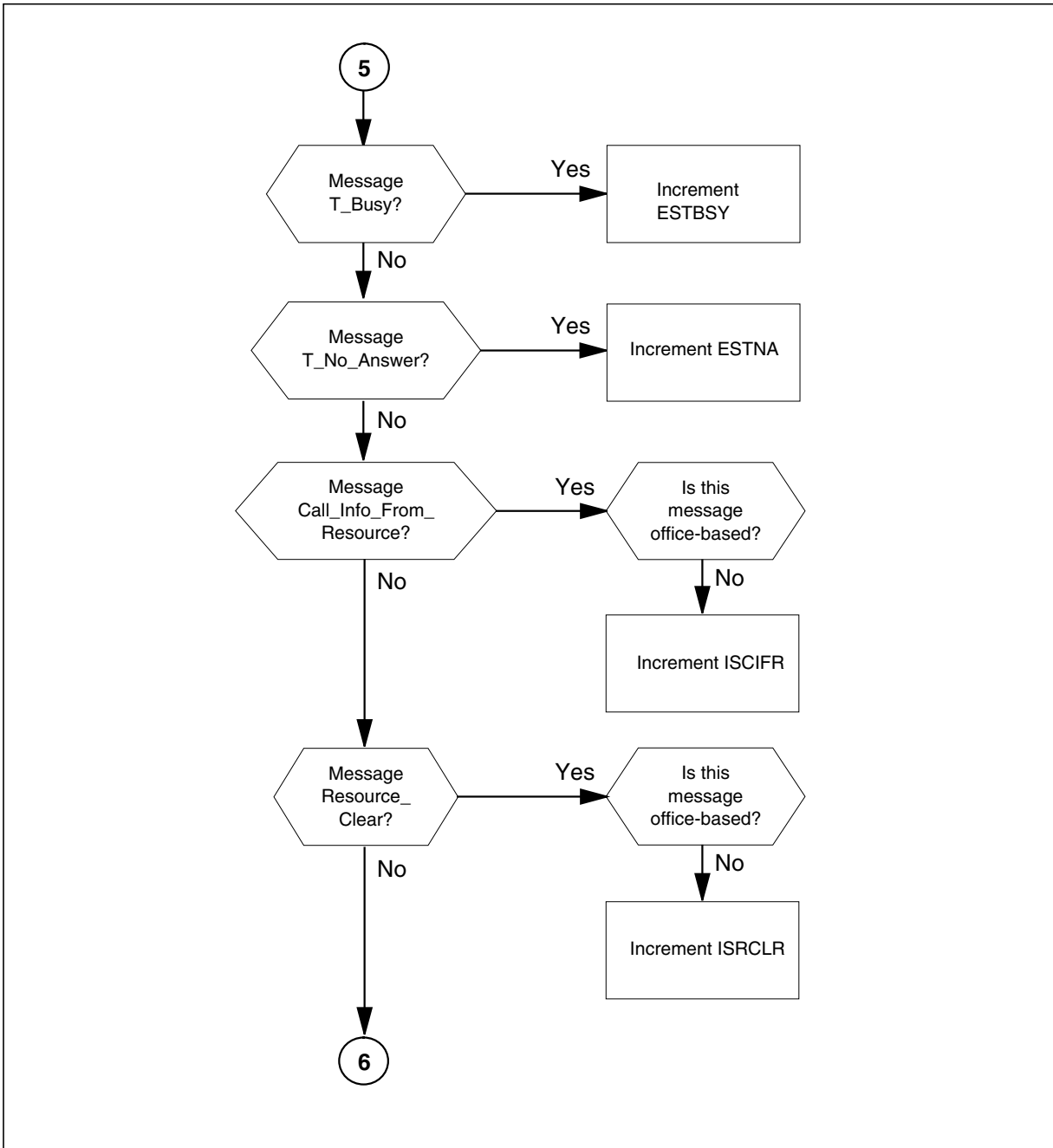
OM group AINOGSUB registers logic ow (continued)

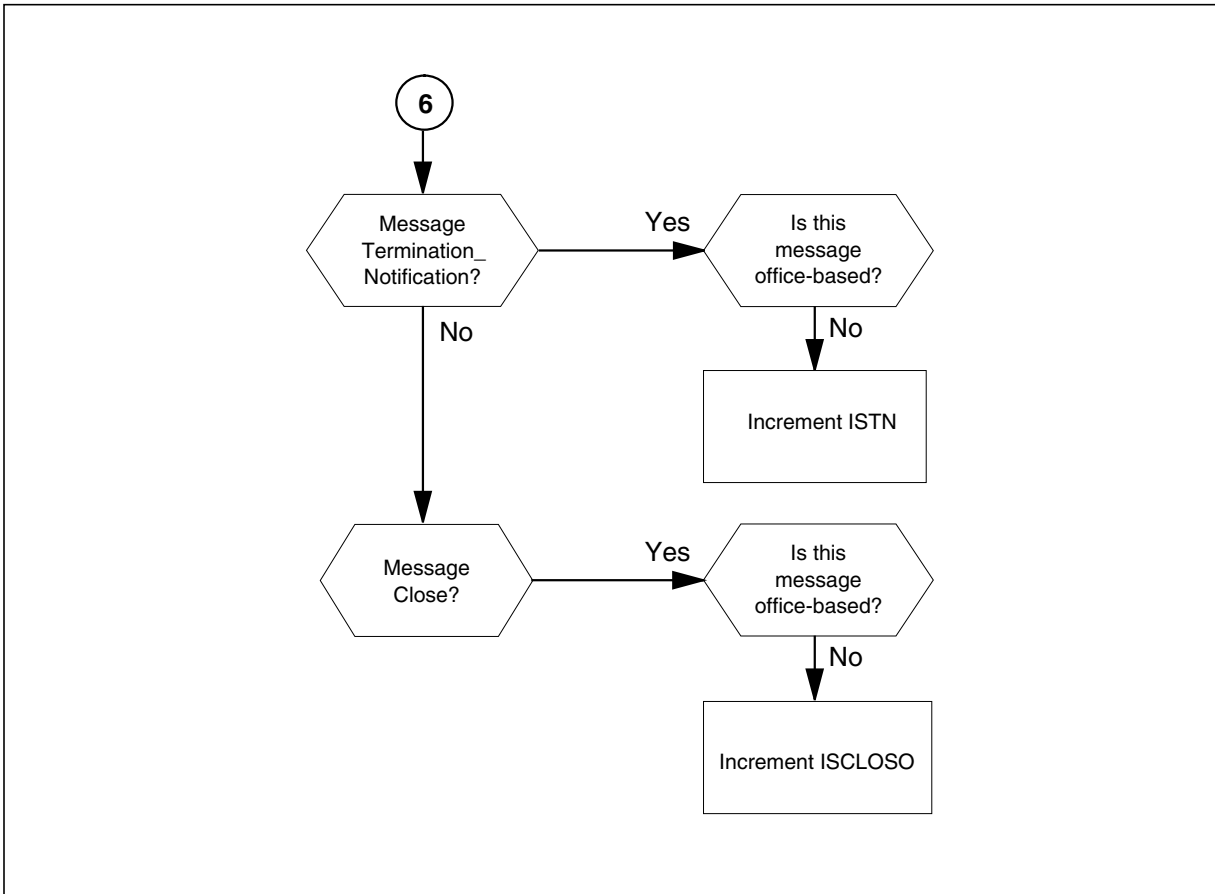


OM group AINOGSUB registers logic ow (continued)



OM group AINOGSUB registers logic ow (continued)



OM group AINOGSUB registers logic o w**Register TSOAOHI**

TS Origination_Attempt at the Off-Hook_Immediate (TSOAOHI)

Register TSOAOHI counts Origination_Attempt messages that the SSP sends to the SCP, as a result of trigger Off-Hook_Immediate at the Origination_Attempt trigger detection point (TDP).

Register TSOAOHI release history

Register TSOAOHI was introduced in NA008.

Associated registers

There are no associated registers.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register TSICOHD

TS Info_Collected message for the Off-Hook_Delay (TSICOHD)

Register TSICOHD counts Info_Collected messages the SSP sends to the SCP, as a result of an Off-Hook_Delay trigger.

Register TSICOHD release history

Register TSICOHD was introduced in NA008.

Associated registers

There are no associated registers.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register TSICSIT

TS Info_Collected message for the Shared_Interof ce_T runk (TSICSIT)

Register TSICSIT counts Info_Collected messages the SSP sends to the SCP, as a result of a Shared_Interof ce_T runk trigger at the Info_Collected TDP.

Register TSICSIT release history

Register TSICSIT was introduced in NA008.

Associated registers

There are no associated registers.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register TSIAPFC

TS Info_Analyze message for the Public_Feature_Code (TSIAPFC)

Register TSIAPFC counts Info_Analyzed messages the SSP sends to the SCP, as a result of a Public_Feature_Code trigger at the Info_Analyzed TDP.

Register TSIAPFC release history

Register TSIAPFC was introduced in NA008.

Associated registers

There are no associated registers.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register TSIASFC

TS Info_Analyze message for the Specific_Feature_Code (TSIASFC)

Register TSIASFC counts Info_Analyzed messages the SSP sends to the SCP, as a result of a Specific_Feature_Code trigger at the Info_Analyzed TDP.

Register TSIASFC release history

Register TSIASFC was introduced in NA008.

Associated registers

There are no associated registers.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register TSIACDP

TS Info_Analyze message for the Customized_Dialing_Plan (TSIACDP)

Register TSIACDP counts Info_Analyzed messages the SSP sends to the SCP, as a result of a Customized_Dialing_Plan trigger at the Info_Analyzed TDP.

Register TSIACDP release history

Register TSIACDP was introduced in NA008.

Associated registers

There are no associated registers.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register TSNBAFR

TS Network_Busy message for the AFR (TSNBAFR)

Register TSNBAFR counts Network_Busy messages the SSP sends to the SCP, as a result of an automatic flexible routing (AFR) trigger at the Network_Busy TDP.

Register TSNBAFR release history

Register TSNBAFR was introduced in NA008.

Associated registers

There are no associated registers.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register ESNB

Register ES Network_Busy (ESNB) counts Network_Busy messages the SSP sends to the SCP, as a result of a Network_Busy event request.

Register ESNB release history

Register ESNB was introduced in NA008.

Associated registers

Register EONB counts the number of Network_Busy messages the SSP sends to the SCP, as a result of a Network_Busy event request. AINOGOFF register $EONB + AINOGSUB$ registers $ESNB + TSNBAFR =$ total Network_Busy messages.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register TSOCBCB

TS O_Called_Party_Busy for the O_Called_Party_Busy (TSOCBCB)

Register (TSOCBCB) counts O_Called_Party_Busy messages the SSP sends to the SCP, as a result of an O_Called_Party_Busy trigger.

Register TSOBCB release history

Register TSOBCB was introduced in NA008.

Associated registers

There are no associated registers.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register ESOCB

ES O_Called_Party_Busy message for the O_Called_Party_Busy (ESOCB) counts the number of O_Called_Party_Busy messages sent from the SSP to the SCP as a result of a O_Called_Party_Busy EDP-R.

Register ESOCB release history

Register ESOCB was introduced in NA008.

Associated registers

EOOCB counts O_Called_Party_Busy messages sent from the SSP to the SCP, as a result of an O_Called_Party_Busy event request. AINOGOFF register
EOOCB + AINOGSUB registers ESOCB + TSOBCB = total
O_Called_Party_Busy messages.

Associated logs

None

Extension registers

None

Register TSONANA

TS O_No_Answer message for the O_No_Answer (TSONANA) counts the number of O_No_Answer messages sent from the SSP to the SCP as a result of an O_No_Answer trigger.

Register TSONANA release history

Register TSONANA was introduced in NA008.

Associated registers

There are no associated registers.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register ESONA

Register ES O_No_Answer (ESONA) counts O_No_Answer messages the SSP sends to the SCP, as a result of an O_No_Answer event request.

AINOGOFF register EOONA + AINOFSUB registers ESONA + TSONANA = total O_No_Answer messages

Register ESONA release history

Register ESONA was introduced in NA008.

Associated registers

Register EOONA counts O_No_Answer messages the SSP sends to the SCP, as a result of an O_No_Answer event request. AINOGOFF register EOONA + AINOFSUB registers ESONA + TSONANA = total O_No_Answer messages.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register ESOANS

Register ES O_Answer (ESOANS) counts O_Answer messages the SSP sends to the SCP, as a result of an O_Answer event request.

AINOGOFF register EOOANS + AINOFSUB register ESOANS = total O_Answer messages

Register ESOANS release history

Register ESOANS was introduced in NA008.

Associated registers

Register EOOANS counts O_Answer messages the SSP sends to the SCP, as the result of an O_Answer event request. AINOGOFF register EOOANS + AINOFSUB register ESOANS = total O_Answer messages.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register TSTATTA

TS Termination_Attempt for the Termination_Attempt (TSTATTA) counts Termination_Attempt messages the SSP sends to the SCP, as a result a Termination_Attempt trigger.

Register TSTATTA release history

Register TSTATTA was introduced in NA008.

Associated registers

There are no associated registers.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register ESTBSY

Register ES T_Busy (ESTBSY) counts T_Busy messages the SSP sends to the SCP, as a result of a T_Busy event request.

Register ESTBSY release history

Register ESTBSY was introduced in NA008.

Associated registers

There are no associated registers.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register ESTNA

Register ES T_No_Answer (ESTNA) counts T_No_Answer messages the SSP sends to the SCP, as a result of a T_No_Answer event request.

Register ESTNA release history

Register ESTNA was introduced in NA008.

Associated registers

There are no associated registers.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register ISTN

Register IS Termination_Notification (ISTN) counts Termination_Notification messages the SSP sends to the SCP, in a transaction that subscribed message initiates.

Register ISTN release history

Register ISTN was introduced in NA008.

Associated registers

Register IOTN counts Termination_Notification messages the SSP sends to the SCP, in a transaction an of ce-based message initiates. $\text{AINOGOFF register IOTN} + \text{AINOGSUB register ISTN} = \text{total Termination_Notification messages}$.

Register IOSN counts Send_Notification messages the SSP receives from the SCP, in a transaction an of ce-based message initiates.

Register ISSN counts Send_Notification messages received by the SSP from the SCP, in a transaction that a subscribed message initiates.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register ISCIFR

IS Call_Info_From_Resource (ISCIFR) counts Call_Info_From_Resource messages the SSP sends to the SCP, in a transaction that a subscribed message initiates.

Register ISCIFR release history

Register ISCIFR was introduced in NA008.

Associated registers

Register IOCIFR counts Call_Info_From_Resource messages the SSP sends to the SCP, in a transaction that an of ce-based message initiates. $\text{AINOGOFF register IOCIFR} + \text{AINOGSUB register ISCIFR} = \text{total Call_Info_From_Resource messages}$.

Register IOCITR counts Call_Info_To_Resource messages the SSP receives from the SCP, in a transaction that an of ce-based message initiates.

Register ISCITR counts Call_Info_To_Resource messages received by the SSP from the SCP, in a transaction that a subscribed message initiates.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register ISRCLR

Register IS Resource_Clear (ISRCLR) counts Resource_Clear messages the SSP sends to the SCP, in a transaction that a subscribed message initiates.

Register ISRCLR release history

Register ISRCLR was introduced in NA008.

Associated registers

Register IORCLR counts Resource_Clear messages the SSP sends to the SCP, in a transaction that an of ce-based message initiates. $\text{AINOGOFF register IORCLR} + \text{AINOGSUB register ISRCLR} = \text{total Resource_Clear messages.}$

Register IOSTR counts Send_To_Resource messages the SSP receives from the SCP, in a transaction that an of ce-based message initiates.

Register ISSTR counts Send_To_Resource messages received by the SSP from the SCP, in a transaction that a subscribed message initiates.

Register IOCRE counts Cancel_Resource_Event messages the SSP receives from the SCP, in a transaction that an of ce-based message initiates.

Register ISCRE counts Cancel_Resource_Event messages received by the SSP from the SCP, in a transaction that a subscribed message initiates.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

Register ISCLOSO

Register IS Close (ISCLOSO) counts Close messages the SSP sends to the SCP, in a transaction that a subscribed message initiates.

Register ISCLOSO release history

Register ISCLOSO was introduced in NA008.

Associated registers

IOCLOSO counts Close messages the SSP sends to the SCP, in a transaction that a subscribed message initiates. AINOGSUB register ISCLOSO + AINICOFF register IOCLOSI + AINICSUB register ISCLOSI + AINOGOFF register IOCLOSO = total closed messages.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

OM group FTROM

OM description

Feature data block OM

OM group FTROM is introduced by feature AIN OMs for Telco Engineering (AU2731). OM group FTROM provides information to assist in switch resource engineering. It is recommended that OM group FTROM be used only for this purpose.

Release history

OM group FTROM was introduced in NA009.

Registers

The following figure illustrates OM group FTROM registers as they appear on the MAP terminal display.

OM group FTROM registers

```

FTROM

CLASS:    ACTIVE
START:1998/01/14 13:00:00 WED; STOP: 1998/01/14 13:04:59
WED;
SLOWSAMPLES:      3 ; FASTSAMPLES:      30 ;

      KEY (FTR_NAME)
      INFO (FTR_DATA_SIZES_INFO)
           FTRHI      FTRSEIZ  FTRSEIZ2

```

Group structure

OM group FTROM

Key eld:

FTR_NAME

Info eld:

SMALL, MEDIUM, LARGE, X_LARGE, or CRITICAL

Associated OM groups

OM group EXT

Associated functional groups

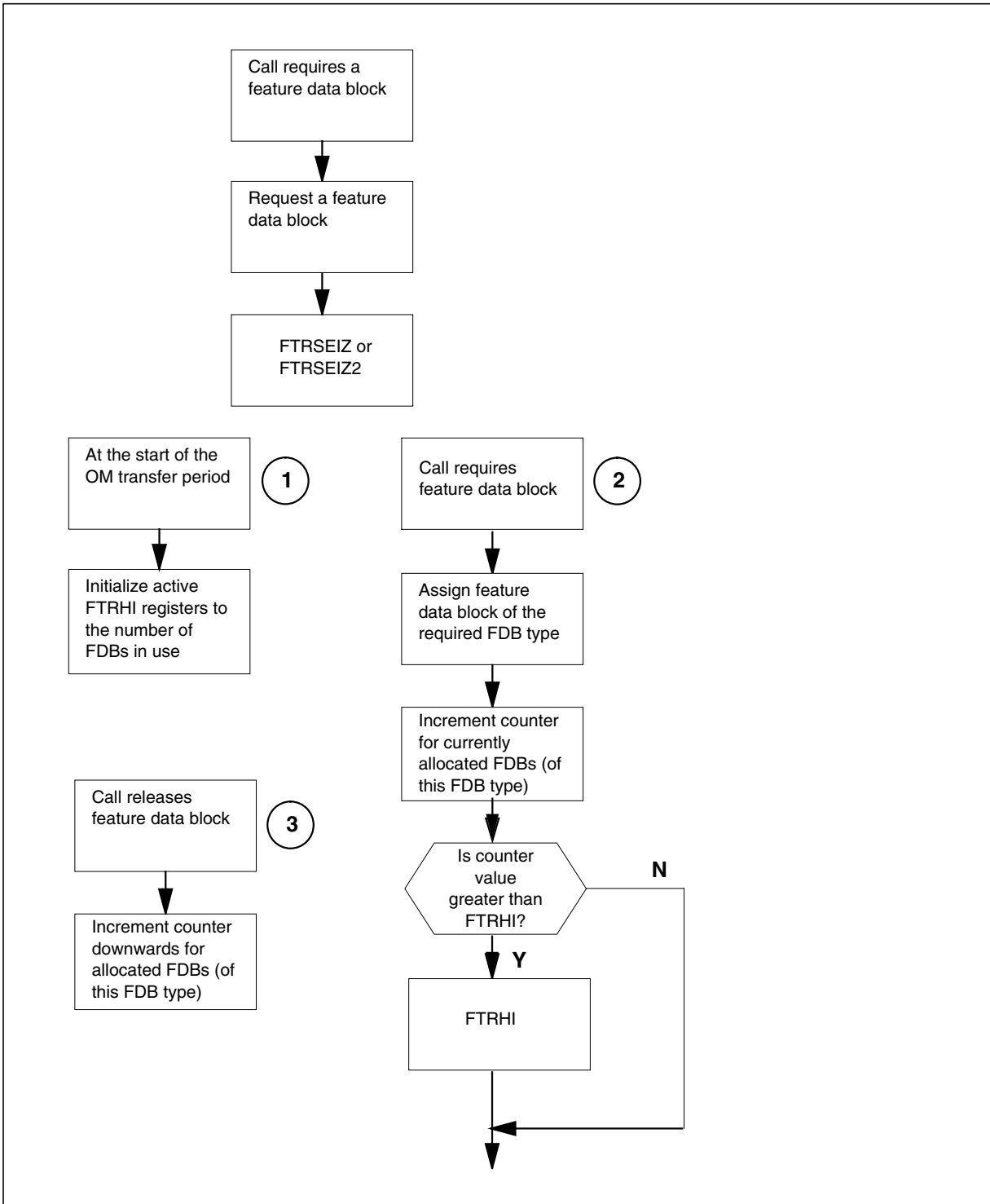
None

Associated functionality codes

None

The following figure illustrates the logical flow of OM group FTROM registers.

OM group FTROM registers logic o w



Register FTRHI

Register maximum number of FDBs in simultaneous use

Register FTRHI records the maximum number of simultaneously allocated FDBs of a specific type, during an OM transfer period.

Register FTRHI release history

Register FTRHI was introduced in NA009.

Associated registers

EXTHI

Associated logs

None

Extension registers

None

Validation formula

None

Register FTRSEIZ

Register number of successful FDB allocations

Register FTRSEIZ records the number of successfully allocated FDBs of a specific type, during an OM transfer period.

Register FTRSEIZ release history

Register FTRSEIZ was introduced in NA009.

Associated registers

EXTSEIZ, EXTSEIZ2

Associated logs

None

Extension registers

FTRSEIZ2

Validation formula

Total of all tuples with info field SMALL = EXTSEIZ for tuple SMALL_FEATURE_DATA.

Total of all tuples with info field MEDIUM = EXTSEIZ for tuple MEDIUM_FEATURE_DATA.

Total of all tuples with info eld LARGE = EXTSEIZ for tuple
LARGE_FEATURE_DATA.

Total of all tuples with info eld X_LARGE =EXTSEIZ for tuple
X_LARGE_FEATURE_DATA.

Total of all tuples with info eld CRITICAL = EXTSEIZ for tuple
CRITICAL_FEATURE_DATA.

11. Trouble locating for LRN-LNP

ATTENTION

LNP is based on AIN Essentials. You must be familiar with AIN before using this document. For a list of relevant AIN documents, please see “About this document”.

This chapter provides advanced troubleshooting information and procedures for LRN-LNP.

**CAUTION****Possible loss of service**

The information and procedures in this chapter are for experienced maintenance personnel only. You must know how to use tools for troubleshooting translations problems. You must also know how to use and interpret the reporting subsystems for logs and OMs.

The following tools are useful in investigating and troubleshooting LRN-LNP problems:

- AINTRACE
- CALLTRAK
- DISPCALL
- QLRN
- QPDN
- TRAVER
- TSTQuery
- XPMIST

11.1 LRN-LNP advanced trouble locating procedures

This section provides advanced troubleshooting procedures for LRN-LNP.

11.1.1 Task list

The following list provides the names of all the procedures in this document. To find the appropriate trouble locating procedure, look for the name in the left column and go to the page number in the right column.

Procedure	Page
"Calls to a portable NXX do not complete"	page 497
"Calls to a number in transition do not complete"	page 500
"Incoming trunk LNP calls to a portable NXX do not complete"	page 503

This chapter contains procedures for locating and clearing troubles in LNP. For each trouble, there is a procedure containing the following:

- explanatory and context-setting information
- summary flowchart
- step-action instructions

11.1.1.1 Explanatory and context-setting information

In each procedure, the sections titled "Application," "Definition," and "Action" contain important explanatory notes and context-setting information. Read these sections before you try to clear the trouble. The section titled "Common procedures" lists the names of common procedures that you may be asked to perform as you follow the step-action instructions. Go to these common procedures only when directed to do so.

11.1.1.2 Summary flowchart

The flowchart is only a summary of the main actions, decision points, and possible paths you can take. Do not use the summary flowchart to perform the procedure. Instead, use it to preview what you will be doing and to help prepare for it. For example, if you see that these instructions involve another office, you know to advise that office before you begin the step-action instructions.

11.1.1.3 Step-action instructions

The step-action instructions tell you how to locate and clear a trouble. Normally, you perform the steps in order, but you may be directed to return to a previous step and repeat a sequence. The successful completion of a step may depend on previous steps; therefore, always perform the steps in the order specified.

The step-action instructions provide the command syntax and machine output you use or see while performing this procedure. For help on DMS commands or output (for example, problems logging into a utility), see *Commands Reference Manual*.

11.2 Calls to a portable NXX do not complete

The following sections provide a definition and a procedure for handling a problem in which a call to a portable NXX does not complete.

11.2.1 Application

Use this procedure to troubleshoot a problem in which a call to a portable NXX does not complete.



CAUTION

Possible loss of service

The information and procedures in this chapter are for experienced maintenance personnel only. You must know how to use tools for troubleshooting translations problems. You must also know how to use and interpret the reporting subsystems for logs and OMs.

11.2.2 Definition

This condition indicates that the subscriber cannot complete outgoing calls using the features of AIN software and the SCP database to query for routing and billing information. This situation occurs when an originating call is to a portable NXX, and the dialed number may not be ported. To route the call, the network must complete the following:

- a database query to find the local routing number (if the number is ported out)
- stop a database query if the number is resident
- return original dialed number if the number is not ported out

If the SCP does not reply within a certain period of time, the system invokes network time-out and sends the call to AIN final treatment.

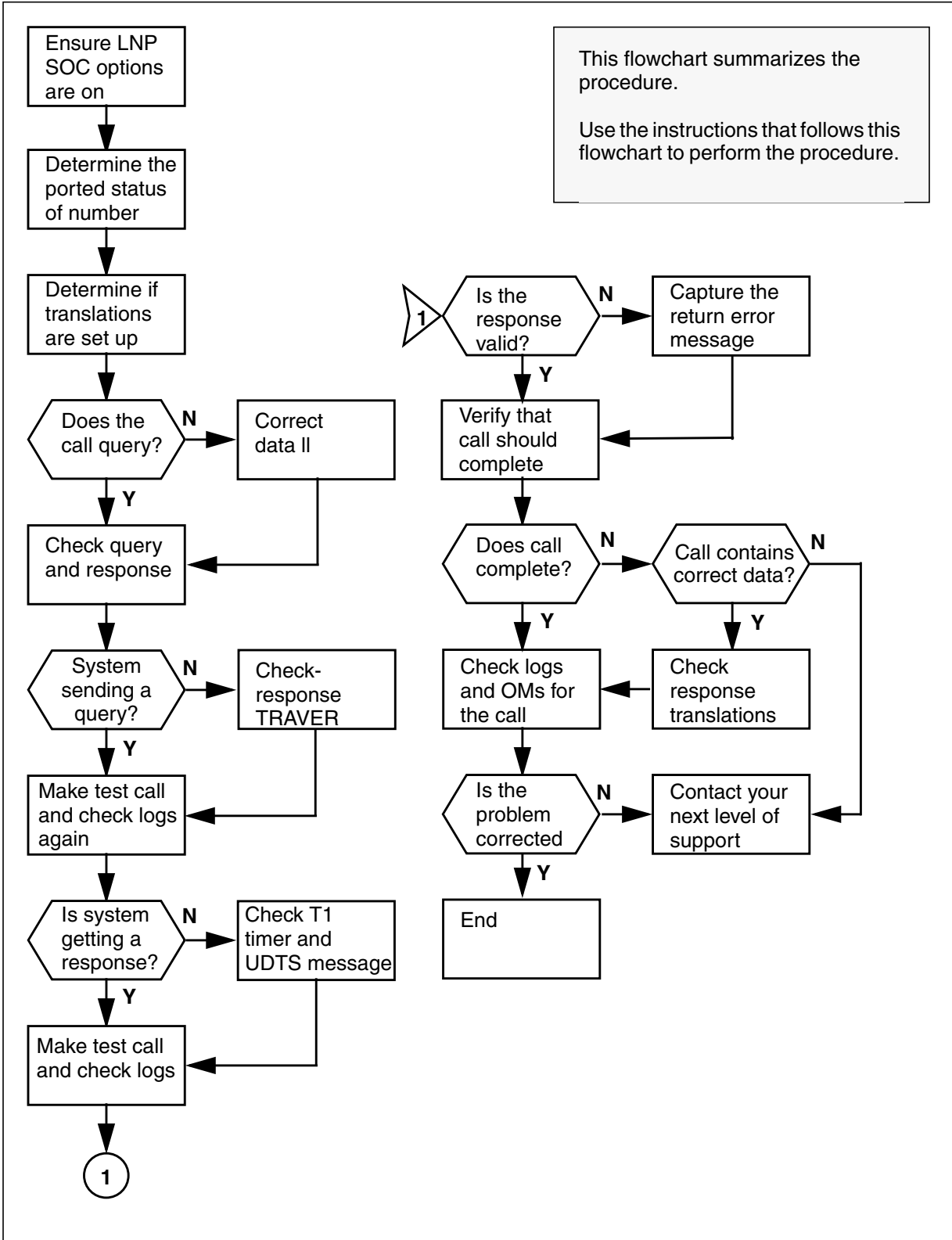
11.2.3 Common procedures

None

11.2.4 Action

This procedure contains a summary flowchart and a list of specific steps for checking a “calls to a portable NXX do not complete” trouble report for an AIN subscriber. Use the following flowchart as an overview of the procedure. Follow the specific steps to perform the procedure.

Figure 138 Summary of Calls to a portable NXX do not complete



Procedure 1 Calls to a portable NXX do not complete**Step Action and response**

- 1 Verify that the LNP SOC options are in the ON state.
If one or more LNP SOC options are not on, do step 2.
If all options are on, do step 3.
- 2 Turn the LNP options on so that functionality is available.
- 3 Determine the ported status of the dialed number. You can get this information from the SCP database, QLRN, and the Service Order group. You need to determine the following information:
 - a the status according to of ce records
 - b the status according to the SCP database
- 4 Use TRAVER to determine if translations are set for the call to query.
If the call does not query, do step 5.
If the call does query, do step 6.
- 5 Correct data II.
- 6 Use the AINTRACE tool to verify that the system is sending a query message and is receiving a valid response.
If the system is not sending the query, do step 7.
If the system is sending the query, do step 8.
- 7 Input the response TRAVER command with data from the SCP that you obtained at step 3.
- 8 Make a test call.
- 9 Check the LNP, C7SCCP, EXT, and AIN OM groups. Correct any software resource problems or problems with the SS7 network.
If a query launches and the system does not receive a response message, do step 10.
If a query launches and the system receives a response, do step 11.
- 10 Check the LNP OM group to determine if the T1 timer is expiring. If the T1 timer is not expiring check the C7SCCP OM group to determine if the system receives a UDTS message. If the system is receiving a UDTS message, use C7TU to capture the UDTS message.
- 11 Make a test call.

- 12 Check the LNP OMs to verify that the system is receiving a valid response message.
If LNP OMs indicate an invalid response message, do step 13.
If there is no indication of a problem with the response message, do step 14.
- 13 Use C7TU or a protocol analyzer to capture the return error message.
Go to step 15.
- 14 Use information from the response TRAVEL in step 6 to create a response TRAVEL to verify that the call should complete.
If the response TRAVEL output indicates that the call does not complete, do step 15.
If the response TRAVEL output indicates that the call does not complete and the response contains the correct data, do step 16.
If the response TRAVEL output indicates that the call completes, do step 17.
- 15 If the response TRAVEL indicates that the call cannot complete with the information that the far-end sends back in the response message, verify that the response message contains the correct data.
Go to step 19.
- 16 Correct the response translations.
Go to step 19.
- 17 Make a test call.
- 18 Check for log reports generated for the call. If the system generates no logs, check the EXT OM group for over o w counts.
Go to step 20.
- 19 Contact your next level of support.
If any of the previous steps do not indicate any problems, then the problem probably resides somewhere else in the network. The last step is to use XPMIST or CALLTRAK (MSGTRACE) to capture the outgoing IAM message to verify that the switch correctly populates the IAM message with LNP information.
- 20 You have completed this procedure.

11.3 Calls to a number in transition do not complete

The following sections provide a definition and a procedure for handling a problem in which calls to a number in transition do not complete.

11.3.1 Application

Use this procedure to troubleshoot a problem in which a call to a number in transition fails to complete.



CAUTION

Possible loss of service

The information and procedures in this chapter are for experienced maintenance personnel only. You must know how to use tools for troubleshooting translations problems. You must also know how to use and interpret the reporting subsystems for logs and OMs.

11.3.2 Definition

This condition means that the subscriber cannot receive incoming calls using the features of LNP software and the SCP database to query for routing and billing information. This situation occurs when the subscriber is in the process of moving from one service provider to another.

From a maintenance point of view, the operating company personnel needs to know the following:

- the location of the physical jumper in the switch
- the port option

If the SCP does not reply within a certain period of time, the system invokes a network time-out and sends the call to AIN default treatment.

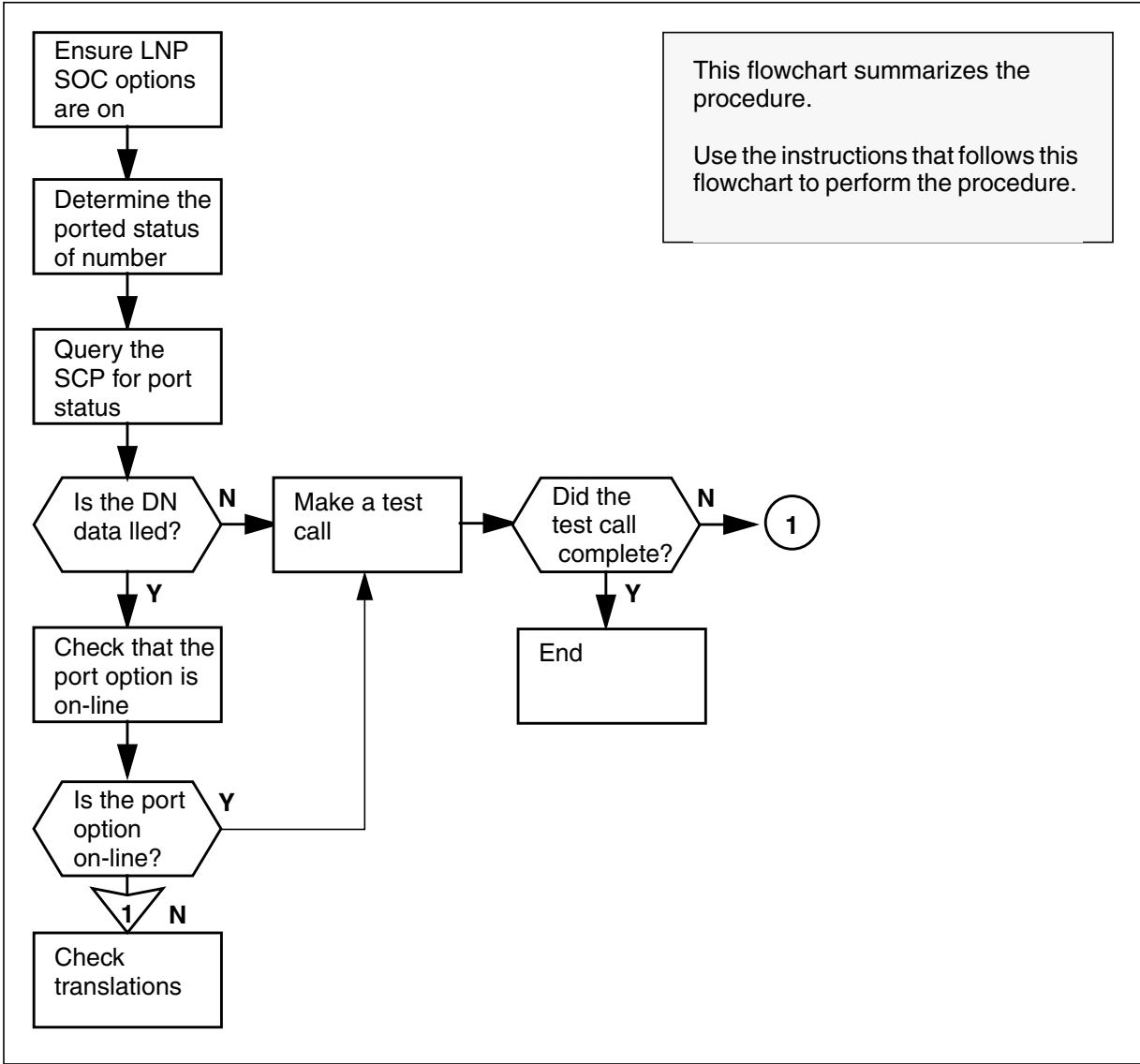
11.3.3 Common procedures

None

11.3.4 Action

This procedure contains a summary flowchart and a list of specific steps for checking a “calls to a number in transition do not complete” trouble report for an LNP subscriber. Use the flowchart as an overview of the procedure. Follow the specific steps to perform the procedure.

Figure 139 Summary of Calls to a number in transition do not complete



Procedure 2 Calls to a number in transition do not complete

Step Action and response

- 1 Verify that the LNP SOC options are in the ON state.
If one or more LNP SOC options are not on, do step 2.
If all options are on, do step 3.
- 2 Turn the LNP options on so that functionality is available.

- 3 Determine the ported status of the dialed number. You can get this information from the SCP database, QLRN, and the Service Order group. You need to determine the following information:
 - a the status according to of ce records
 - b the status according to the SCP database
- 4 Use the QLRN CI command to query the SCP for port status.
If the DN is data lled on the switch and the subscriber is in the process of porting to the new service provider, do step 5.
If the DN is blank, do step 6.
- 5 Check that the port option is on-line.
If the port option is not on-line, do step 7.
If the port option is on-line, do step 6.
- 6 Make a test call.
If the test call completes, do step 9.
If the test call does not complete, do step 7.
- 7 Refer to the translations group within your company to place the port option on-line.
Go to step 9.
- 8 Contact the next level of support.
- 9 You have completed this procedure.

11.4 Incoming trunk LNP calls to a portable NXX do not complete

The following sections provide a de nition and a procedure for handling a problem in which incoming trunk LNP calls to a portable NXX do not complete.

11.4.1 Application

Use this procedure to troubleshoot a problem in which an incoming trunk call fails to complete.



CAUTION

Possible loss of service

The information and procedures in this chapter are for experienced maintenance personnel only. You must know how to use tools for troubleshooting translations problems. You must also know how to use and interpret the reporting subsystems for logs and OMs.

11.4.2 Definition

This condition means that the subscriber cannot complete outgoing calls using the features of AIN software and the SCP database to query for routing and billing information.

If the SCP does not reply within a certain period of time, the system invokes a network time-out and sends the call to AIN normal treatment.

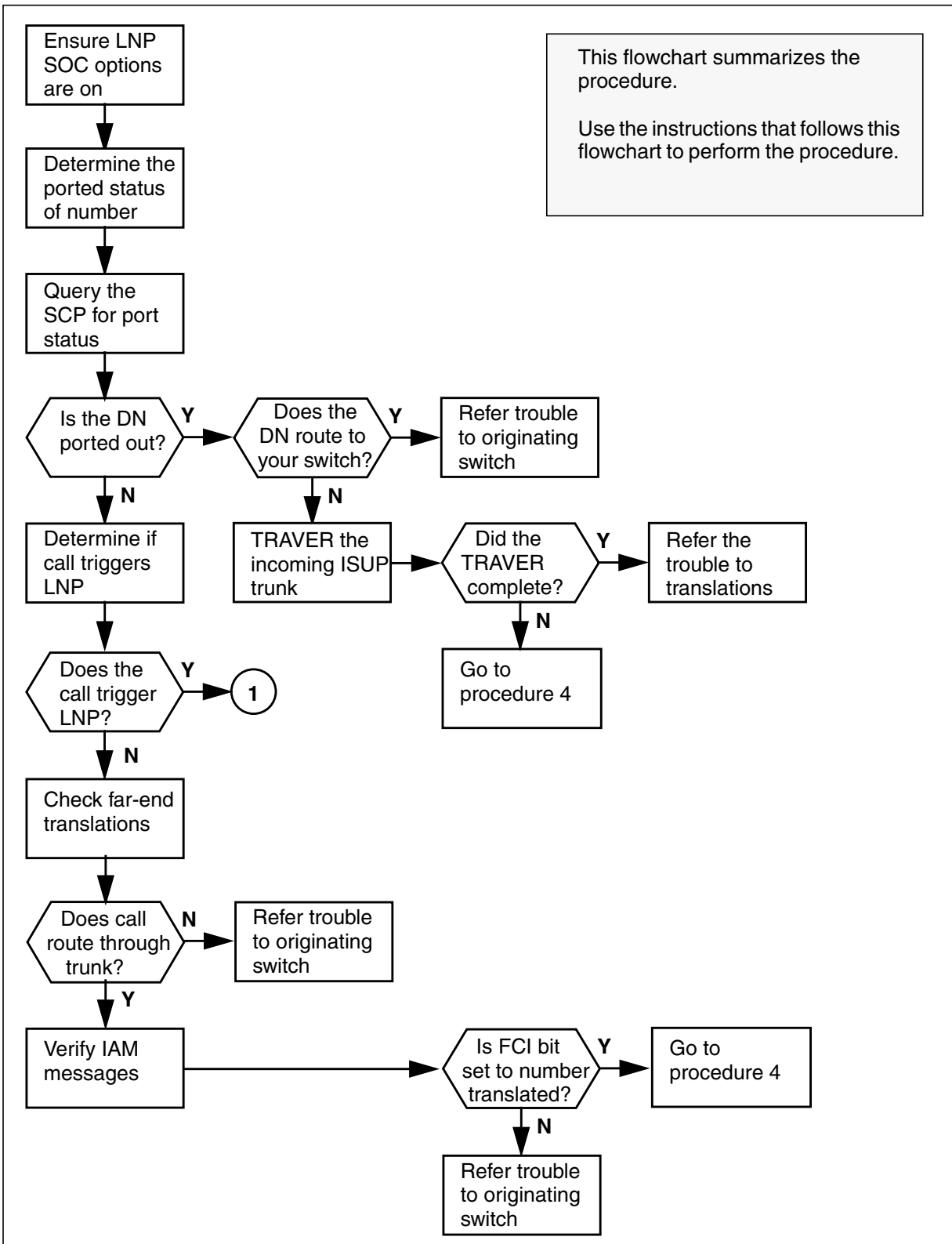
11.4.3 Common procedures

None

11.4.4 Action

This procedure contains a summary flowchart and a list of specific steps for checking an “incoming trunk LNP calls to a portable NXX do not complete” trouble report for an AIN subscriber. Use the flowchart as an overview of the procedure. Follow the specific steps to perform the procedure.

Figure 140 Summary of Incoming trunk LNP calls to a portable NXX do not complete



Procedure 3 Incoming trunk LNP calls to a portable NXX do not complete

Step Action and response

- 1 Verify that the LNP SOC options are in the ON state.
If one or more LNP SOC options are not on, do step 2.
If all options are on, do step 3.
- 2 Turn the LNP options on so that functionality is available.
- 3 Determine the ported status of the dialed number. You can get this information from the SCP database, QLRN, and the Service Order group. You need to determine the following information:
 - a the status according to of ce records
 - b the status according to the SCP database
If the SCP indicates that the DN is ported out and the LRN does not route through your switch, do step 4.
If the SCP indicates that the DN is ported out and the LRN should route through your switch, do step 5.
If the SCP indicates that the DN is not ported out and the LRN should route through your switch, do step 8.
- 4 Refer the problem back personnel at the originating switch.
Go to step 14.
- 5 Use TRAVER on the incoming ISUP trunk. The results are different, depending on the roll of your switch in call routing:
 - a if your switch is the recipient, the TRAVER completes to the dialed DN
 - b if your switch is the intermediate, the TRAVER completes to the trunk agent
If the TRAVER does not complete, do step 6.
If the TRAVER completes, do step 7.
- 6 Refer the problem to your translation group.
Go to step 14.
- 7 Use "Calls to a portable NXX do not complete" on page 499 to complete trouble locating.
- 8 Use TRAVER to determine if the call completes normally without encountering the LNP trigger.
If the call completes without encountering the LNP trigger, do step 9.
If the TRAVER gets any other result, do step 13.

- 9 Use the LNP test call feature (LNPTST line option) to verify far end LNP translations.

 If the call does not route through the incoming trunk and SCP data returns an LRN that should route through your switch, do step 12.

 If the call routes through the incoming trunk, do step 10.
- 10 Verify IAM message contents for LNP-related parameters.

 If the FCI bit is not set to number translated, do step 12.

 If the FCI bit is set to number translated and TRAVER shows the call should complete, do step 11.
- 11 Use "Calls to a portable NXX do not complete" on page 499 to complete trouble locating.
- 12 Refer the problem back to translations personnel at the originating switch.

 Go to step 14.
- 13 Contact your next level of support.
- 14 You have completed this procedure.

12. Logs for LRN-LNP

ATTENTION

LNP is based on AIN Essentials. You must be familiar with AIN before using this document. For a list of relevant AIN documents, please see “About this document”.

This chapter describes the log reports associated with LRN-LNP. The following log reports provide useful information for maintaining LNP:

- LNP300
- LNP301
- LNP302
- LNP303
- LNP304
- LNP305
- LINE150
- LINE151

12.1 LNP logs

Table 4 on page 510 lists the log report for each LNP log, including the cause of the log and the recommended maintenance response. More information on

the individual log reports, and on the CCS7 logs that support LRN-LNP, are in the *Log Reports Reference Manual*, 297-8003-840.

Table 4 LNP log descriptions

Log	Cause	Action
LNP300	<p>The system generates the LNP300 log whenever the node cannot complete digit manipulation on the GAP parameter for the outgoing IAM. This condition only applies to outgoing MF trunks or outgoing ISUP trunks with the provisioned SPN option. In both cases, the system uses the ported DN for signaling instead of using the LRN.</p> <p>For more information on Digit Manipulation see the appropriate section in the LRN-LNP Service Implementation Guide.</p> <p>Whatever switch in the network, originating or intermediate, that needs to manipulate the GAP before outpulsing or signaling generates this log if the GAP cannot be safely manipulated.</p>	<p>Verify the translations that the LRN goes through. The system has determined that these translations are ambiguous. As a result of this ambiguity, the system is unable to make appropriate comparisons between the LRN and the GAP.</p>
LNP301	<p>The LNP301 log is generated when an LRN on an incoming IAM is not 10 digits and the full ten digits cannot be determined. It is possible that the LRN can be signaled from the previous switch in a manipulated form. When an LRN is present in an incoming IAM, it is compared against the HLRN of the office. This can only be accomplished if it is ten digits in length. So, for example, if a seven-digit LRN is received, it must be assumed that the NPA was stripped off and has to be derived in the current switch. If it is impossible to correctly determine what the NPA should be, an LNP301 log is generated.</p>	<p>If the LRN is less than seven digits, make sure that the preceding switch sends at least a seven-digit LRN.</p> <p>If the LRN is seven digits, make sure datafill is in place in table FNPA7DIG to generate the NPA. The switch bases the NPS on the NXX of the LRN and on the datafilled STS against the incoming trunk group.</p> <p>This log is only generated on intermediate or recipient switches where an LRN was signaled in on an incoming ISUP IAM and it cannot be expanded to ten digits successful</p>

Table 4 LNP log descriptions (Continued)

Log	Cause	Action
LNP302	<p>The system generates the LNP302 log whenever the querying switch receives an ISUP release message with cause_value of 26, "Misrouted call to a ported number".</p> <p>This log is generated in the scenario when User B dials User A, but the SCP doesn't know that User A has ported. The SCP when queried, incorrectly returns the LRN of the donor switch from which User A has ported. The originating switch accordingly attempts to route the call to the donor switch which receives an unallocated number treatment when it attempts to complete the call to User A. An ISUP Release message is then sent back to the originating switch with a cause value of "Misrouted call to a ported number". Upon receiving this ISUP Release message, the originating switch applies treatment and generates an LNP302 log to alert the technician of the database inconsistency.</p>	Verify that the number dialed by the calling party is a ported number and that the SCP database has up-to-date datafill to reflect that configuration.
LNP303	<p>The system generates the LNP303 log whenever a call attempts to route to a ported number in the recipient switch but receives unallocated number treatment.</p> <p>This is the same scenario that generates the LNP302 log above, but this log is generated at the recipient switch instead of the querying switch. The information that is contained in this log includes the calling party, the ported number, and the LRN.</p>	Verify that the number dialed by the calling party is a ported number and that the SCP database has up-to-date datafill to reflect that configuration.
LNP304	The system generates the LNP304 log whenever an LNP call encounters a VFG on a non-terminating switch and there is digit manipulation specified for the call.	Verify that the route to the VFG is set up properly. In order for an LNP call, which is not terminating at this switch, to encounter the VFG the digit manipulation specified in the routing table must have a value of zero.
LNP305	The LNP305 information log indicates a mismatch in the LATA/LA results of the pre-LNP query translations, as compared to the post-LNP query translations.	This is an information log and requires no action by the operating company personnel.

AIN Essentials SSP-specific logs may also be generated upon some error conditions during LRN-LNP call processing. AUD logs may be generated in

the case of software errors. These error conditions are limited to software and not protocol errors. AIN Essentials SSP-specific logs are also generated to report Automatic Code Gapping events.

12.2 LNP log examples

Figure 141, to Figure 145 are examples of LNP logs.

Figure 141 Example of LNP300 log

```
RTPT ** LNP300 SEP0312:12:08 1100 TBL GAP Digit Manipulation Error
LRN 9198712131    TRANS LRN    8722131
GAP 9198703112
ORIG CKT    9198703000
TERM CKT    TRUNK_OUT_GO 12
Unable to perform LNP digit manipulation on the GAP
```

Figure 142 Example of LNP301 log

```
RTPT ** LNP301 JUL 10 10:41:32 0420 TBL LRN reconstruction failed
LRN      8712131
ORIG CKT TRUNK_IN_COME 12
NPA can not be determined for LRN
```

Figure 143 Example of LNP302 log

```
RTPT ** LNP302 JUL 10 10:41:32 0420 TBL Misrouted Call to Ported DN
LRN = 2132760000
PORTED DN = 2781234
CALLING PTY = 6192785544
Unable to route call to Ported DN from Querying Switch.
```

Figure 144 Example of LNP303 log

```
RTPT ** LNP303 JUL 10 10:41:32 0420 TBL Unable to Terminate to Ported DN
LRN = 2132760000
PORTED DN = 2781234
CALLING PTY = 6192785544
Unable to route call to Ported DN at Recipient Switch.
```

Figure 145 Example of LNP304 log

```

** LNP304 JUN17 14:25:36 1800 TBL Unable to pass LNP info through VFG
   Called Pty      6136631088
   Ported DN      4164638001
   Orig Ckt       HOST 02 1 10 10      DN 4164631001
   DMI            88
   Table          IBNRT2
   Index          111
   LNP call cannot be routed through VFG because DMI > 0

```

Figure 146 LNP305 log example

```

COMD1CDN13AX ** LNP305 JAN01 03:16:01 9000 TBL LRN LATA XLA marking
mismatch
   LRN            6136631088
   Ported DN      4164631111
   Orig LATA NAME LATA1
   LATA XLA markings for Ported DN do not match LRN

```

12.3 LINE logs

There are two COT-related logs that require modification to interwork with LNP:

- LINE150—generated as a result of a successful trace
- LINE151—generated as a result of a partial trace

Two new fields are added to these logs:

- Jurisdiction Information Parameter (JIP)—the first field that displays the six-digit JIP
- JIP SOURCE—the second field is a text field that explains how the JIP digits are obtained

Table 5 on page 514 provides a summary of the possible scenarios for the population of JIP and JIP SOURCE fields

Table 5 Population of JIP and JIP SOURCE elds

Scenario			Reason	JIP	JIP SOURCE	
North American load		Intraswitch caller	HomeLrn found	SITE HOMELRN based on SITE information	HOMELRN USED	
			Redirection encountered	000000	REDIRECTION ENCOUNTERED-JIP UNRELIABLE	
	switch is LNP active	interswitch caller	SS7 signaling all the way	JIP	JIP SIGNED	
			SS7 signaling all the way, no JIP present	000000	NO SIGNED JIP PRESENT (see Note)	
			SS7 signaling all the way, JIP assigned to trunk	000000	NO SIGNED JIP PRESENT	
			interworking encountered	000000	INTERWORKING ENCOUNTERED JIP UNRELIABLE	
		switch is non-LNP			000000	LNP NOT APPLICABLE
	non-North American load	not applicable	not applicable	not applicable	000000	LNP NOT APPLICABLE
Note: In this case the HOME Location Routing Number (HLRN) is used.						

Table 6 on page 515 lists the log report for each LINE log, including the cause of the log and the recommended maintenance response. More information on the individual log reports, and on the CCS7 logs that support LRN-LNP, are in the *Log Reports Reference Manual*, 297-8003-840.

Table 6 LINE log descriptions

Log	Cause	Action
LINE150	The LINE subsystem generates this report when a customer originated trace(COT) has been performed successfully. A subscriber with the COT feature dialed the COT access code and thus initiated a trace of the last call received. LINE150 provides a dump of the incoming memory slot (IMS) associated with the COT subscriber. The field JIP displays the six digit value that uniquely identifies the originator's service provider. The JIP SOURCE field explains how the JIP digits were obtained.	No immediate action is required. This log provides call traces and is to be used as desired by the operating company.
LINE151	The LINE subsystem generates this report when a subscriber with the customer originated trace (COT) feature dials the COT access code and initiates a trace of the last call received. However, because the traced call was out-of-area or because the traced directory number was not a 7- or 10-digit number, the call trace information is incomplete. Other reasons for a LINE151 log out are outlined in the table at the end of this log.	No immediate action is required. This log provides call traces and is to be used as desired by the operating company.

12.3.1 LINE log examples

Figure 147 and Figure 148 are examples of LINE logs.

Figure 147 Example of LINE150 log

```

LINE150   mmmdd  hh:mm:ss  ssdd   INFO FULL COT TRACE
SUBSCRIBER LEN: len      SUBSCRIBER DN: dn
TRACE DUMP  TIME CALL RCVD: mmmdd  hh:mm:ss  DN: dn
INTRAOFFICE: x  ORIG ADDR TYPE: nnn typtxt
OUT OF AREA: x  CWT: x  PRIVATE: x  GIC: x
JIP: nnnnnn
JIP SOURCE: jipsrctxt

```

where

JIP is the 6-digit JIP from the originating switch
 JIP SOURCE is the text reason explaining how the JIP digits are obtained

Figure 148 Example of LINE151 log

```

LINE151 mmmdd hh:mm:ss ssdd INFO PART COT TRACE
SUBSCRIBER LEN: len      SUBSCRIBER DN: dn
TRACE DUMP  TIME CALL RCVD: mmmdd hh:mm:ss
DN/LEN/TRK: dn/len
INTRAOFFICE: x  ORIG ADDR TYPE: nnn typtxt
OUT OF AREA: x  CWT: x  PRIVATE: x  GIC: x
JIP: nnnnnn
JIP SOURCE: jipsrctxt
REASON: rsntxt

```

where

JIP is the 6-digit JIP from the originating switch
 JIP SOURCE is the text reason explaining how the JIP digits are obtained

12.3.2 LINE logs restrictions and limitations

The following restrictions and limitations apply:

- This feature relies upon the integrity of the signaled JIP.
- When LNP is not active, the JIP is still included with the incoming signaling for the interswitch case. If the call originates as an intraswitch and LNP is not active the JIP is displayed as 000000.
- If an LRN is assigned against an incoming trunk, it is not used, since it may not accurately reflect the JIP of the originating switch.
- When a trunk encounters interworking the JIP will be considered unreliable.
- If an intraswitch call encounters a redirection in an LNP active office the JIP will be considered reliable and populated.
- When SOC option LNP00200 is not enabled the JIP digits will be displayed as 000000.

13. Operational measurements for LRN-LNP

ATTENTION

LNP is based on AIN Essentials. You must be familiar with AIN before using this document. For a list of relevant AIN documents, please see “About this document”.

This chapter provides information about the operational measurements (OM) that support LRN-LNP.

OMs monitor and count the occurrences of events within the DMS SuperNode switch. This information is used for traffic provisioning, service monitoring, accounting, allocation, and market evaluation. OMs are also a useful source of information for fault indication, identification, and location.

You can schedule and route OMs to output devices by modifying the contents of specific system data tables using the table editor or command interpreter (CI) commands.

The OMs for LNP are as follows:

- LNP
 - LNPPORT
 - LNPPORT1
 - LNPQESC
 - LNPQESC1
 - LNPQFACG
 - LNPRFERR
 - LNPQFRTE
 - LNPQFSCP

- LNPQFSSP
- LNPQFT1
- LNPQLRNA
- LNPQLRNQ
- LNPQLRNR
- LNPQLRNV
- LNPQRY
- LNPQRY1
- LNPREL
- LNPRFCNT
- LNPRFDSC
- LNPRFSTR
- LNPUADNR
- LNPUAHOM
- TRMTCM2
 - TCMCCRG
 - TCMCCRM
 - TCMCCRP
 - TCMCCRH
 - TCMCCRT
 - TCMMTBL
 - TCMPODN
- TRMTFR3
 - FRMISRTE
 - FRQORREL

For detailed explanations of other individual OMs, including CCS7 OMs, refer to *Operational Measurements Reference Manual*, 297-8003-840. For detailed information about how to activate these OMs, refer to *Basic Administration Procedures*, 297-1001-300.

13.1 OM group LNP

OM group LNP, which holds LNP specific operational measurements, contains one tuple that keeps track of these counts on a switch-wide basis.

Description: OM group LNP counts number of LNP events that occur, including

- queries launched
- queries escaped
- query failures
- response failures
- calls misrouted to unallocated numbers

To calculate the total number of LNP queries performed by a switch, the formula is $LNPQRY1 * 32767 + LNPQRY + LNPQFSSP$

Release history: LNP was created in NA007.

The OM registers in the LNP group are divided as follows:

- registers incremented in a triggering switch
- registers incremented in a terminating switch
- registers used for QLRN purposes

13.1.1 LNP OM registers incremented in a triggering switch

Table 7 provides information on the OM registers incremented in a triggering switch. Information is provided on each individual register in the group, its release history, related registers and logs, and if applicable, a method of validating the register output.

Table 7 LNP OM registers incremented in a triggering switch

LNPQRY	<p>Description: The number of calls that encounter an LNP trigger that results in an LNP SCP query.</p> <p>Associated registers: None</p> <p>EXT registers: LNPQRY1</p> <p>Release history: LNPQRY was created in NA007.</p>
LNPQRY1	<p>Description: The number of calls that encounter an LNP trigger that results in an LNP SCP query. This register handles LNPQRY overflows.</p> <p>Associated registers: None</p> <p>Release history: LNPQRY1 was created in NA007.</p>

Table 7 LNP OM registers incremented in a triggering switch (Continued)

LNPQFT1	<p>Description: The number of calls that encounter an LNP trigger that results in an LNP SCP query, but that query failed due to T1 timer expiry.</p> <p>Associated registers: None</p> <p>Release history: LNPQFT1 was created in NA007.</p>
LNPRFERR	<p>Description: The number of calls that encounter an LNP trigger that results in an LNP SCP query, but that query failed because the response contained a fatal protocol error or application error.</p> <p>Associated registers: None</p> <p>Release history: LNPRFERR was created in NA007.</p>
LNPQFRTE	<p>Description: The number of calls that encounter an LNP trigger that result in an LNP SCP query, but the query cannot be launched because of a problem with SS7.</p> <p>Associated registers: None</p> <p>Release history: LNPQFRTE was created in NA007.</p>
LNPQESC	<p>Description: The number of calls that encounter an LNP trigger and that result in the trigger being escaped.</p> <p>Associated registers: None</p> <p>EXT registers: LNPQESC1</p> <p>Release history: LNPQESC was created in NA007.</p>
LNPQESC1	<p>Description: The number of calls that encounter an LNP trigger that result in the trigger being escaped. This is the extension register of LNPQESC.</p> <p>Associated registers: None</p> <p>Release history: LNPQESC1 was created in NA007.</p>
LNPQFACG	<p>Description: The number of queries blocked by ACG.</p> <p>Associated registers: None</p> <p>Release history: LNPQFACG was created in NA007.</p>
LNPQFSCP	<p>Description: This register is incremented if the SCP reported a fatal protocol error or application error in the query message.</p> <p>Associated registers: None</p> <p>Release history: LNPQFSCP was created in NA007.</p>

Table 7 LNP OM registers incremented in a triggering switch (Continued)

LNPQFSSP	<p>Description: This OM is pegged in the following two scenarios:</p> <ol style="list-style-type: none"> 1. DMS is unable to build the LNP query message (i.e. software resources or data unavailable). 2. DMS is unable to send the LNP query out onto the SS7 network. (i.e. problem with SS7 network, Local LNP subsystem down, LNP link or routeset down) <p>Associated registers: None</p> <p>Release history: LNPQFSSP was created in NA007.</p>
LNPRFCNT	<p>Description: The number of continue responses that the system receives.</p> <p>Associated registers: None</p> <p>Release history: LNPRFCNT was created in NA007.</p>
LNPRFDSC	<p>Description: The number of disconnect responses that the system receives.</p> <p>Associated registers: None</p> <p>Release history: LNPRFDSC was created in NA007.</p>
LNPRFSTR	<p>Description: The number of send to resource responses that the system receives.</p> <p>Associated registers: None</p> <p>Release history: LNPRFSTR was created in NA007.</p>
LNPPORT	<p>Description: The number of calls that encounter an LNP trigger where:</p> <ul style="list-style-type: none"> • the trigger results in an LNP SCP query, and • the SCP's response contained an LRN (not the dialed number) <p>Associated registers: None</p> <p>EXT registers: LNPPORT1</p> <p>Release history: LNPPORT was created in NA007.</p>

Table 7 LNP OM registers incremented in a triggering switch (Continued)

LNPPORT1	<p>Description: The number of calls that encounter an LNP trigger where:</p> <ul style="list-style-type: none"> • the trigger results in an LNP SCP query, and • the SCP’s response contained an LRN (not the dialed number) <p>This register is used only in case the LNPPORT overflows.</p> <p>Associated registers: None</p> <p>Release history: LNPPORT1 was created in NA007.</p>
LNPREL	<p>Description: The number of calls that encounter an LNP trigger where:</p> <ul style="list-style-type: none"> • the trigger results in an LNP SCP query, but • the call associated with that LNP query encountered an ISUP REL message with a cause of 26 <p>Associated registers: None</p> <p>Release history: LNPREL was created in NA007.</p>
<p>Note: Information that does not apply to the individual registers is omitted from that entry in the table.</p>	

13.1.2 LNP OM registers incremented in a terminating switch

Table 8 provides information on the OM registers incremented in a terminating switch. Information is provided on each individual register in the group, its release history, related registers and logs, and if applicable, a method of validating the register output.

Table 8 LNP OM registers incremented in a terminating switch

LNPUADNR	<p>Description: The number of calls that encounter an unallocated/vacant number indication in the donor switch following:</p> <ul style="list-style-type: none"> • an LNP query in this switch or • another switch as indicated by the TCNI in the FCI parameter with no “ported number” GAP <p>Associated registers: None</p> <p>Release history: LNPUADNR was created in NA007.</p>
----------	--

Table 8 LNP OM registers incremented in a terminating switch (Continued)

LNPUAHOM	<p>Description: The number of LNP calls that encounter unallocated/vacant indication when:</p> <ul style="list-style-type: none"> the switch's own LRN has been detected after an LNP query in this switch or after an LNP query in another switch as indicated by the TCNI in the FCI parameter and the "ported number" GAP <p>Associated registers: None</p> <p>Release history: LNPUAHOM was created in NA007.</p>
<p>Note: Information that does not apply to the individual registers is omitted from that entry in the table.</p>	

13.1.3 LNP OM registers used for QLRN purposes

Table 9 provides information on the registers used for QLRN purposes. Information is provided on each individual register in the group, its release history, related registers and logs, and if applicable, a method of validating the register output.

Table 9 LNP OM registers used for QLRN purposes

LNPQLRNQ	<p>Description: The number of queries sent by QLRN.</p> <p>Associated registers: TCMMSGOUT, TCINVKL (TCAPUSAG group).</p> <p>Validation formulas: 1 LNPQLRNQ = 1 TCMMSGOUT = 1 TCINVKL.</p> <p>Release history: LNPQLRNQ was created in NA008.</p>
LNPQLRNR	<p>Description: The number of responses received by QLRN.</p> <p>Associated registers: TCMMSGIN, TCQWPERM, TCRESPNS (TCAPUSAG group).</p> <p>Validation formulas: 1 LNPQLRNR = 1 TCMMSGIN = 1 TCPRESPNS.</p> <p>Release history: LNPQLRNR was created in NA008.</p>

Table 9 LNP OM registers used for QLRN purposes (Continued)

LNPQLRNV	<p>Description: The number of valid responses received by QLRN. A valid response includes the following information:</p> <ul style="list-style-type: none"> • routing number • calling party DN • office CLLI • data and start time • elapsed time <p>Associated registers: None</p> <p>Release history: LNPQLRNV was created in NA008.</p>
LNPQLRNA	<p>Description: The number of time the system prompts the customer for, and the customer chooses to, override ACG blocking controls.</p> <p>Associated registers: BLKCASCP, BLKCASMS, SCPOVLDO, SMSOVLDO (AINACG group). These registers mark information about ACG blocked queries.</p> <p>Validation formulas: 1 LNPQLRNA 1 (BLKCASCP + BLKCASMS + SCPOVLDO + SMSOVLDO) = 0</p> <p>QLRN increments one of the two registers when the system prompts the customer to continue if a blocking control is found.</p> <p>Release history: LNPQLRNA was created in NA008.</p>
<p>Note: Information that does not apply to the individual registers is omitted from that entry in the table.</p>	

13.1.4 OM group LNP example

Figure 149 shows an example of the register contents in the LNP group.

Figure 149 Example of OM group LNP

LNPQRY	LNPQRY1	LNPQFT1	LNPRFERR
LNPQFRTE	LNPQESC	LNPQESC1	LNPQFACG
LNPQFSCP	LNPQFSSP	LNPRFCNT	LNPRFDSC
LNPRFSTR	LNPPORT	LNPPORT1	LNPREL
LNPUADNR	LNPUAHOM	LNPQLRNQ	LNPQLRNR
LNPQLRNV	LNPQLRNA		

13.2 OM group TRMTCM2

OM group TRMTCM2 is a feature-related treatment extension. Registers in this OM group are automatically incremented whenever the corresponding

treatment is applied. Registers FRMISRTE and FRQORREL are FRSPR9 and FRSPR10 respectively in CSP07.

Associated OM groups: None

Release history: TRMTCM2 was created in BCS33.

Table 10 provides information on the OM registers incremented. Information is provided on each individual register in the group, its release history, related registers and logs, and if applicable, a method of validating the register output.

Table 10 LNP OM registers incremented in a triggering switch

TCMCCRG	<p>Description: The number of times a call routes to treatment CCRG (cumulative charge restriction for general subscribers).</p> <p>Associated registers: None</p> <p>Release history: TCMCCRG was created in CSP008.</p>
TCMCCRH	<p>Description: The number of times a call routes to treatment CCRH (cumulative charge restriction for PHS subscribers).</p> <p>Associated registers: None</p> <p>Release history: TCMCCRH was created in CSP008.</p>
TCMCCRM	<p>Description: The number of times a call routes to treatment CCRM (cumulative charge restriction for mobile subscribers).</p> <p>Associated registers: None</p> <p>Release history: TCMCCRM was created in CSP008.</p>
TCMCCRP	<p>Description: The number of times a call routes to treatment CCRP (cumulative charge restriction for payphone subscribers).</p> <p>Associated registers: None</p> <p>Release history: TCMCCRP was created in CSP008.</p>
TCMCCRT	<p>Description: The number of times a call routes to treatment CCRT (cumulative charge restriction for third-party billed calls).</p> <p>Associated registers: None</p> <p>Release history: TCMCCRT was created in CSP008.</p>

Table 10 LNP OM registers incremented in a triggering switch (Continued)

TCMPODN	<p>Description: The number of times a ported out directory number (PODN) treatment occurs.</p> <p>The operating company specifies PODN treatment for calls to a directory number with a native NPA-NXX that has moved to another switch.</p> <p>Associated registers: None</p> <p>Release history: TCMPODN was created in NA009.</p>
TCMMTBL	<p>Description: The number of times a mobile trouble treatment occurs.</p> <p>Associated registers: None</p> <p>Release history: TCMMTBL was created in BCS33.</p>
<p>Note: Information that does not apply to the individual registers is omitted from that entry in the table.</p>	

13.3 OM group TRMTFR3

OM group TRMTFR3 is a feature-related treatment extension. The system automatically increments registers in this OM group whenever the corresponding treatment applies. Registers FRMISRTE and FRQORREL are FRSPR9 and FRSPR10 respectively in CSP07.

Associated OM groups

- TRMTCM/TRMTCM2: customer-related miscellaneous treatments
- TRMTCU/TRMTCU2: customer unauthorized related treatments
- TRMTER: equipment related treatments
- TRMTFR/TRMTFR2: feature related treatments
- TRMTPR: protocol related treatments
- TRMTRS: resource shortage treatments

Release history: TRMTFR3 was created in NA007.

Table 11 provides information on the OM registers incremented. Information is provided on each individual register in the group, its release history, related registers and logs, and if applicable, a method of validating the register output.

Table 11 LNP OM registers incremented in a triggering switch

FRMISRTE	<p>Description: The number of call attempts to ported DN's that terminate to an unallocated number treatment in the terminating switch.</p> <p>Associated registers: None</p> <p>Release history: FRMISRTE was created in NA007.</p>
FRQORREL (Note 2)	<p>Description: The number of times a treatment applies to a call.</p> <p>This treatment builds and sends a REL message with a cause value of NP_QoR_Number_Not_Known.</p> <p>Associated registers: None</p> <p>Release history: FRQORREL was created in NA007.</p>
<p>Note 1: Information that does not apply to the individual registers is omitted from that entry in the table.</p> <p>Note 2: Since QoR is not applicable in North America the FRQORREL register is never pegged.</p>	

13.4 Recovery

LNP is not considered to significantly impact system recovery time during restarts.

Table and data structure initialization done at IPL time have little or no impact during other restart times.

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DMS-100 Family
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Publication number: 297-5161-510
Product release: NA013
Document release: Standard 12.01
Date: March 2000
Published in Canada