

Critical Release Notice

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

Bookmarks used in this NTP highlight the changes between the baseline NTP and the current release. The bookmarks provided are color-coded to identify release-specific content changes. NTP volumes that do not contain bookmarks indicate that the baseline NTP remains unchanged and is valid for the current release.

Bookmark Color Legend

Black: Applies to new or modified content for the baseline NTP that is valid through the current release.

Red: Applies to new or modified content for NA017 that is valid through the current release.

Blue: Applies to new or modified content for NA018 (SN05 DMS) that is valid through the current release.

Green: Applies to new or modified content for SN06 (DMS) that is valid through the current release.

Purple: Applies to new or modified content for SN07 (DMS) that is valid through the current release.

Attention!

Adobe® Acrobat® Reader™ 5.0 or higher is required to view bookmarks in color.

Publication History

December 2004

Standard release 11.04 for software release SN07 (DMS).

Volume 1

Modified Chapter 2 for CR Q0823552-02.

Volume 2

Modified Chapter 40 and Chapter 43 for CR Q0823552-02.

September 2004

Standard release 11.03. 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 11.02 are as follows:

Volume 1

Chapter 4, Agent support modified according to CR Q00893694

Volume 2

No changes

Volume 3

Chapter 13, OM group AIN modified according to CR Q00765666.

Chapter 14, OM group AINICOFF modified according to CR Q00765666.

Chapter 15, OM group AINICSUB modified according to CR Q00765666.

Chapter 17, OM group AINOGOFF modified according to CRs Q00765666 and Q00527425-04

Chapter 19, OM group AINOGSB2 modified according to CRs Q00765666 and Q00527425-04

Chapter 21, AIN message tracing tool, 21.3 Supported messages and parameters, Table 913 modified according to CR Q00527425-04.

Chapter 23, TSTQUERY tool, 23.3 Supported messages and parameters, Table 933 modified according to CR Q00527425-04.

March 2004

Standard release 11.02 for software release SN06 (DMS). Changes were made to the following sections:

Volume 1

Chapter 2, Development Summary
Chapter 3, Call Model
Chapter 4, Agent support
Chapter 5, Functional overview
Chapter 6, Generic SSP procedures
Chapter 8, Originating call model events
Chapter 9, Terminating call model triggers
Chapter 14, STR processing with an SSP resource
Chapter 16, STR connection to a remote IP
Chapter 17, Connect_to_Resource
Chapter 19, Error handling
Chapter 20, Limitations
Chapter 22, AIN/DMS-100 interactions (A and B)
Chapter 23, AIN/DMS-100 interactions (C)
Chapter 24, AIN/DMS-100 interactions (C)

Volume 2

Chapter 1, AIN/DMS-100 interactions (I to R)
Chapter 2, AIN/DMS-100 interactions (S to Z)
Chapter 4, Other interactions
Chapter 8, Engineering considerations for PRI looparounds
Chapter 10, Data schema
Chapter 11, Software optionality control
Chapter 12, Datafilling for the general office
Chapter 14, Trigger group provisioning interface
Chapter 15, Trigger item provisioning interface
Chapter 39, Trunk Group Trigger
Chapter 41, Analyze_Route response
Chapter 46, Forward_Call response

Volume 3

Chapter 6 Billing
Chapter 7 AMA structures and modules
Chapter 17 OM group AINOGOFF
Chapter 19 OM group AINOGSB2
Chapter 21 AIN message tracing tool
Chapter 23 TSTQUERY tool
Chapter 25 Other CI commands for AIN
Chapter 49 Game100

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DMS-100 Family

Advanced Intelligent Network Service Enablers

Service Implementation Guide Volume 3 of 3

SN06 (DMS) Standard 11.02 March 2004

DMS-100 Family

Advanced Intelligent Network Service Enablers

Service Implementation Guide Volume 3 of 3

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About this document

When to use this document

This document is the primary source of information for the DMS-100 SSP AIN Service Enablers product.

The document is a response to a customer request that Nortel Networks consolidate descriptive information into one document. This document maintains the nature of the documents most frequently used in the past, especially those related to provisioning the AIN Service Enablers SSP for triggers, responses, and post-response translations.

Electronically stored documents

For each electronically stored version of this document, there is one electronic master copy that is accessible to all approved users. All other copies, hard or soft, are considered uncontrolled.

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 released again 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 the version of this document that 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.

Structure of this document

The document is structured as follows:

Part 1: Introduction. This part provides an overview of the AIN Service Enablers product, including the call model and agent support. This part also provides a product developments summary since NA007.

Part 2 Functional Description: This part provides a functional overview of:

- AIN Service Enablers
- the generic SSP procedures
- supported triggers and events
- the Send_To_Resource interface to the Intelligent Peripheral (STR-IP)
- SCP messaging
- use of AIN Service Enablers for toll-free service

Part 3: Interactions. This part lists and describes general trigger and event interactions, and AIN Service Enablers interactions with AIN Essentials, STR-IP, toll-free service, and Automatic Code Gapping (AGC).

Part 4: Planning and Engineering. This part describes AIN hardware requirements and outlines the technical specification such as standards, performance measurements, capacity allocation, messaging requirements, and error handling.

Part 5: Provisioning. This part contains the provisioning information that was formerly in the Provisioning Cookbook and the Response Translations Guide. These documents were incorporated into the same format for this document. The chapters in this section provide examples of trigger, response, and post-response translations datafill.

Part 6: Billing. This part describes Automatic Message Accounting (AMA) as it applies to AIN and illustrates the module codes.

Part 7: Operations, administration and maintenance. This part describes OMs and logs that are supported by AIN Service Enablers, and also describes the network management feature called Automatic Call Gapping. Several chapters in this part provide information on the command interface (CI) tools for this product.

Part 8: Requirements and support. This part presents the mapping of AIN Service Enablers to the Bellcore specifications, and describes some elements of product support.

Part 9: Terms and references. This part contains the terms and references for this document.

Document scope

This document describes AIN Service Enablers in terms of Functional Sets (FS) and Functional Subsets (FSS).

FS and FSS example

The following example illustrates how FS and FSS definitions help describe AIN Service Enablers functionality.

The Network_Busy Event FS represents the function of a particular event, the Network_Busy (NB) event, and consists of the following FSSs:

- NB Event Detection and Processing FSS, to let the SSP detect the event
- Network_Busy Event Request Message and Processing FSS, to let the SSP generate a query message to the SCP
- Generic Analyze_Route Message and Processing FSS, to let the SSP process one of the possible responses from the SCP
- Disconnect Message and Processing FSS, to let the SSP process another of the possible responses from the SCP

Notice that the NB Event Detection and Processing FSS is specific to the FS. It provides an integral unit of AIN functionality that enables a unique service-related feature.

Other FSSs, such as the Generic Analyze_Route Message and Processing FSS and the Disconnect Message and Processing FSS, are used by other FSs.

FS and FSS definitions

FSs and FSSs are groups of functionally associated requirements for the Service Switching Point (SSP), the SSP/SCP interface, and the SSP/IP interface. The elements of an FSS or FSSs contribute to a common purpose or action (functionality). FS and FSS definitions comply with Bellcore documents GR-1298, GR-1299 and GR-1129, as well as toll-free service document GR-2892.

An FSS possesses an integral unit of AIN functionality that either enables a unique service-related feature on an SSP, or provides a common base for other functional groups. Each FSS is a group of specifically related Bellcore requirements.

An FS consists of several FSSs and represents a stand-alone function, such as an event, or a building-block used to create a stand-alone function, such as a generic message processing.

Document structure and organization

Major sections or chapter titles in this document comply with the FS that is being implemented. Subsections comply to the FSSs within that FS. Subsections can also contain additional information that is not included in the FSSs.

Structure and organization example

In keeping with FS definitions, this document describes events in two chapters; one for the originating call model and one for the terminating call model.

Section 8.3 , “Network_Busy event,” on page 383 describes the Network_Busy event, which implements the Network_Busy Event FS. Chapter 8 contains one section for each event it describes. Since each event implements an FS, the chapter has a section for each FS.

The Network_Busy event section contains six subsections:

- Arming the Network_Busy event
- NB event detection and processing
- Network_Busy event request message and processing
- Analyze_Route message and processing
- Disconnect message and processing
- Send_To_Resource message and processing

Each subsection represents either an FSS that makes up the FS, or additional information.

References in this document

The following documents are referred to in this document:

- 297-1001-455, *Office Parameters Reference Manual (volumes 1, 2)*
- 297-1001-825, *DMS-100 Glossary*
- 297-1411-350, *E911 Emergency Service*
- 297-1421-010, *Subscriber Services Product Guide*
- 297-2051-104, *MDC SMDI Setup and Operation*
- 297-2401-360, *ISDN Primary Rate Interface Translation Guide*
- 297-5161-021, *Advanced Intelligent Network Essentials Service Implementation Guide*
- 297-5161-510, *AIN Release 0.1 SSP Complete Maintenance Guide*
- 297-8003-350, *North American DMS-100 Translations Guide*

- 297-8003-808, *North American DMS-100 Service Order Reference Manual*
- 297-8003-814, *North American DMS-100 Operational Measurements Reference Manual*
- 297-8003-840, *North American DMS-100 Log Reports Reference Manual*
- 297-8003-855, *NA DMS-100 Office Parameters Reference Manual*
- 297-8981-021, *DMS-100/200 LRN-LNP Service Implementation Guide*

What precautionary messages mean

The types of precautionary messages used in Nortel Networks 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 precautionary messages follow.

ATTENTION Information needed to perform a task

ATTENTION

When 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 is lost when you remove a card from the active unit.

DANGER

Possibility of personal injury



DANGER

Risk of electrocution

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 fixed parameters

Commands and fixed 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 way:

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:

Busy the CTRL on the inactive plane by typing the following

>BSY CTRL ctrl_no

and then press 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 Overview of AIN response translations

Service providers can implement AIN response translations using either the established (legacy) translations methods or simplified translations.

The purpose of the overall AIN response translation simplification effort is to reduce the high cost of ownership associated with response translation for the AIN platform. Simplification addresses both the public side of response translation and public network access support for private line and trunk agents.

The following points describe the information available for both legacy and simplified AIN response translations:

- Chapter 2: “AIN response translations for public agents” on page 47 describes legacy AIN response translations for agents that are either public lines or public trunks.
- Chapter 3: “AIN simplified response translations for public agents” on page 101 describes AIN simplified response translations for public agents.
- Chapter 4: “AIN response translations for private agents” on page 151 describes legacy AIN response translations for private trunk and line agents.
- Chapter 5: “AIN simplified response translations for private agents” on page 193 describes AIN simplified response translations for private trunk and line agents.

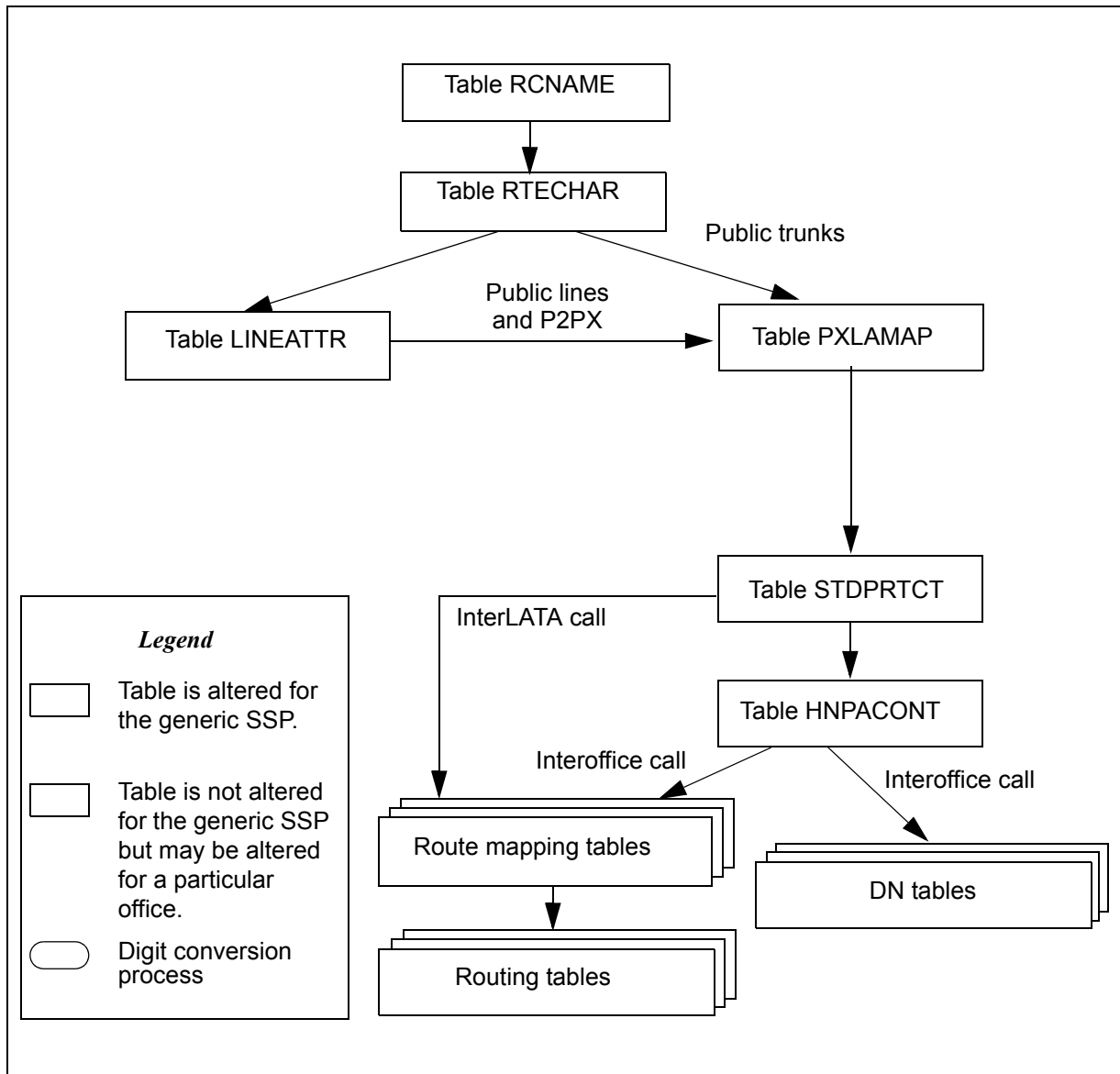
2 AIN response translations for public agents

**CAUTION****Possible loss of service**

Incorrect translations can result in call failures or automatic message accounting (AMA) losses. To minimize the number of call failures, alter translations only during low-traffic periods.

This chapter describes the additional datafill required for AIN response translations when triggering agents are public lines or public trunks.

Figure 1 on page 48 outlines the different tables needed for AIN response translations for public agents and the relationship between these tables.

Figure 1 AIN table relationships for public agents - without simplification

The generic SSP referenced in Figure 1 has the following characteristics:

- The generic SSP is an equal-access end office (EAE0). An EAE0 was selected because it requires more data than tandem office. Tandem offices can also use this document because the data required is generally a subset of the EAE0 data.
- The generic SSP supports calls from a network access point (NAP); that is, the generic SSP supports incoming public trunks using EAMF signaling or Transit Network Selection (TNS) for Signaling System Number 7 (SS7) facilities. This implies that the datafill is present to support 0ZZXXX calls.

- The generic SSP does not have routing based on bearer capability (package NTX767 or NTX768). This assumption was made to simplify the datafill explanations. Bearer capability is detailed in sections on modification of generic SSP data.
- The generic SSP supports a variety of AIN services that allow all types of national and international calls in the AIN response, including operator and carrier calls. If the AIN services do not support all call types, the data for the unsupported call type is not required.
- The generic SSP supports the private lines and private trunks. Though not explicitly stated, the office also supports public lines and trunks.
- The generic SSP routes all public numbers in the public environment.
- The generic SSP supports only triggering at a Public Office Dialing Plan (PODP) trigger for all AIN supported agents.
- The generic SSP supports only one public dialing plan used in AIN response translation. The generic SSP does not span LATA boundaries.
- The generic SSP does not require class of service screening during AIN response translation.
- The generic SSP supports 10-digit outpulsing of home numbering plan numbers. The network supports 10-digit dialing from public trunks.
- As of NA003, the SSP supports a 7-digit subscriber number in the CalledPartyID returned by the SCP, as well as national and international numbers in the CalledPartyID.
- The generic SSP supports overriding line attributes when an agent triggers on SDS and receives an Analyze_Route response message or uses default routing. Overriding line attributes are used during response processing in place of the originator's line attributes, allowing the customer to overcome the toll restrictions imposed by the originator's line attributes. See Section 30.2.3 "Step 3: Datafilling for line attribute response processing" on page 767 to provision overriding line attributes for a trigger item. See Section 30.3.4 "Step 4: Datafilling table PODPATTR (optional)" on page 788 to provision overriding line attributes for a trigger group.

2.1 Datafill public lines and public trunks without simplification

This section details the additional datafill required to support AIN response translations without activating the simplification feature.

2.1.1 Table RCNAME

Translation and routing of AIN responses is based on attributes found in the intelligent information elements (herein referred to as routing characteristics). Prior to translation, these attributes are mapped onto tables RCNAME and RTECHAR.

Table RCNAME (routing characteristic name) contains a list of names that are associated with a group of routing characteristics in Table RTECHAR.

Once an alphanumeric entry is placed into table RCNAME, that alphanumeric can be used as an RCNAME key in any of the following:

- translation mapping tables (such as table XLAMAP and table PXLAMAP)
- route mapping tables (such as subtable RTEMAP, table OFRTMAP, and table IBNMAP)
- Table RTECHAR

Note: Though there are other tables that contain RCNAME, they are not documented here because they are not relevant to AIN response processing.

The routing characteristic tables should be datafilled in the following order:

1. Table RCNAME
2. The translation mapping tables and the routing mapping tables
3. Table RTECHAR

ATTENTION

Table RTECHAR should be datafilled after table RCNAME, the translation mapping tables, and the routing mapping tables. Failure to datafill in the order listed above results in call failure for calls using previous routing characteristics that correspond to an old RCNAME.

2.1.1.1 Recommended datafill for table RCNAME

The required data for Table RCNAME for AIN response processing depends on the additional entries required for table RTECHAR as described in Section 2.1.2.1 “Routing characteristics” on page 51.

Table 1 shows the data that would be present for a generic SSP. Details on the associated routing characteristics are provided in the following chapter.

Table 1 Generic SSP data

Type of access	RCNAME
National call	NACALL
National carrier call	NACAR
International call	INCALL
International carrier call	INCAR

Table 1 Generic SSP data (Continued)

Subscriber Call	SUBCALL
Subscriber Carrier Call	SUBCAR
International operator	INOPER
International carrier operator	INCAROP
National carrier operator	NACAROP
Carrier operator	CAROP
Bell operating company operator call	BOCOP

2.1.1.2 Modifying generic RCNAME data for office or AIN service

Modification of table RCNAME depends on the modification of table RTECHAR. See Section 2.1.2.5 “Modifying generic RTECHAR data for an office or AIN service” on page 60.

2.1.2 Table RTECHAR

Table RTECHAR (routing characteristics) allows the DMS to translate and route on attributes found in intelligent information elements. The attributes (herein referred to as characteristics) that are applicable to AIN during response processing are described in this chapter.

This chapter describes table RTECHAR under the following headings:

- Routing characteristics
- Combining routing characteristics
- Recommended datafill to support AIN response processing

2.1.2.1 Routing characteristics

There are four routing characteristic types:

- Bearer capability
- Called party number
- Operator System Access
- Transit Network Selection

2.1.2.1.1 Bearer capability The bearer capability (BC) determines the type of transmission service accessible to the user. The BC of the call is not altered by AIN response processing. Thus, the BC routing characteristic is maintained.

Before querying the SCP, the BC is maintained while processing the SCP response. Table 2 contains examples of Bearer Capabilities that are supported for AIN.

Table 2 Bearer capability characteristics

Bearer capability (as per TR-NWT-001285)	Characteristic
Speech	(BC SPEECH))
3.1 kHz audio	(BC 3_1KHZ)
56kbps	(BC 56KDATA)
64kbps	(BC 64KDATA)

Note: Bearer capability is used as a routing characteristic only if the DMS has package NTX767 or NTX768.

2.1.2.1.2 Called party number The called party number (CDN) type indicates the intended use of the corresponding digits. AIN response processing currently supports the following CDN types:

- NIL indicates that either digits are not present or that the type of number is indeterministic for digits that are present.
- National (NA) indicates a number in either the 10-digit public format or N11 format.
- International (IN) indicates that the number is an international 7- to 12-digits.
- Subscriber (L) indicates that a number is in 7-digit public format.

Note: AIN response processing currently does not support a private network (NET) number or a private abbreviated (ABBR) number.

The CalledPartyID parameter must use the AINDigits parameter format. Parameter AINDigits contains the “nature of number” field. It is this field that is used to identify the CDN characteristic. See TR-NWT-001285, *Switching Control Point Interface*.

Table 3 illustrates the characteristics of the “nature of number” field.

Table 3 Characteristics of the nature of number field

Nature of number	Characteristic
National (significant) number/ National (significant) number, operator requested	(CDN NA)

Table 3 Characteristics of the nature of number field (Continued)

Nature of number	Characteristic
International number/ International number, operator requested	(CDN IN)
Subscriber number/ Subscriber number, operator requested	(CDN L)
No address present, operator requested	(CDN NIL)
No address present, cut-through call to carrier.	(CDN NIL)
Note: The 950+ Nature of Number Called Party numbers are 7-digits numbers datafilled as Subscriber CDN type. However, the call is routed as national number.	

2.1.2.1.3 Operator system access The operator system access (OSA) indicates the required operator by type of access:

- Public/Principle (PUBP) access is used to direct the call to an operator when there is no carrier parameter specified in the response. Note that the operator this call is being routed to may either be the local exchange carrier (LEC) operator or the carrier operator, depending on the nature of the call and the translation set up.
- Public/Principle (PUBP) access is used to direct the call to an operator when the carrier that will be used in translation is a LEC. Note that the operator this call is being routed to may either be the LEC operator or the carrier operator, depending on the nature of the call and the translation setup.
- Public/Alternate (PUBA) access is used to direct the call to a carrier operator when the carrier that will be used in translation is NOT an LEC.

Note: Private/Principle access, which is used to direct calls to a private network attendant system or a private branch exchange (PBX), is not supported by AIN.

AIN uses the CalledPartyID parameter (“nature of number” field) to indicate that an operator is required. The type of operator that is required depends on the following:

- The SCP can return one or more carriers in the form of PrimaryCarrier, AlternateCarrier, and SecondAlternateCarrier. The SSP translates using each carrier in turn until a facility is selected or the SSP detects that the carrier is busy. Routing characteristics associated with each carrier are selected before the translation of each carrier.
- If the carrier that will be used in the translation is not an LEC (identified by 0110), then the carrier operator is required.

- If the carrier that will be used in translation is an LEC, then the PUBP operator is required.
- If there was no carrier parameter presented in the response, then the PUBP operator is required.

Table 4 shows the characteristics of each type of operator.

Table 4 Type of operator characteristics

Type of operator	Characteristic
Operator (also referred to as the public/principle operator)	(OSA PUBP)
Carrier operator (also referred to as the public/alternate operator)	(OSA PUBA)

2.1.2.1.4 Transit network selection Transit network selection (TNS) is used in interswitch calls to indicate the type of facility that the user wants to select:

- Nationally-Standardized (NA) indicates a call in the public network using public carriers.
- User-Specified Network indicates a call in the private environment using private facilities.

Note: AIN supports only Nationally-Standardized (NA).

In AIN the presence of TNS is determined in the following manner:

- The SCP can return one or more carriers in the form of PrimaryCarrier, AlternateCarrier, and SecondAlternateCarrier. The SSP translates using each carrier in turn until a facility is selected or the SSP detects that the carrier is busy. Routing characteristics associated with each carrier are selected before the translation of each carrier.
- If the carrier that is used in the translations is not an LEC (identified by 0110), the transit network selection of NA is required.
- If the carrier that will be used in translation is an LEC, then the transit network selection is not required.
- If there is no carrier parameter specified in the response, then the transit network selection is not required.

Table 5 shows the type of network characteristics.

Table 5 Type of network characteristics

Type of network	Characteristic
Nationally Standardized	(TNS NA)

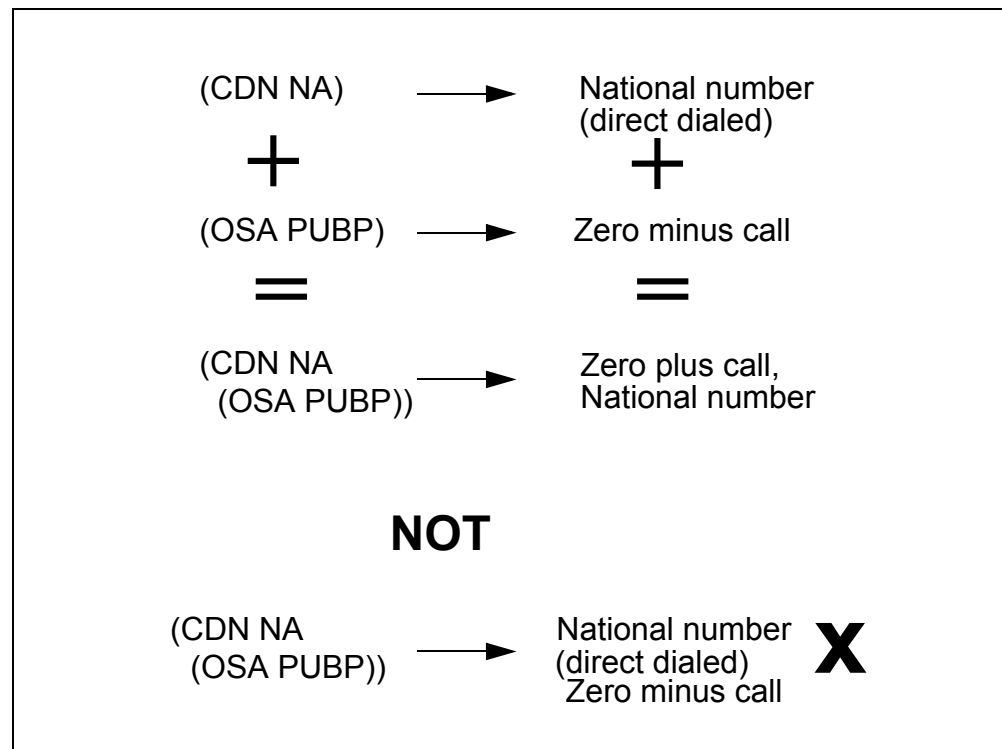
2.1.2.2 Combining routing characteristics

A call can have one or more routing characteristics. The combination of several characteristics usually introduces a different call type rather than individual characteristics.

For example,

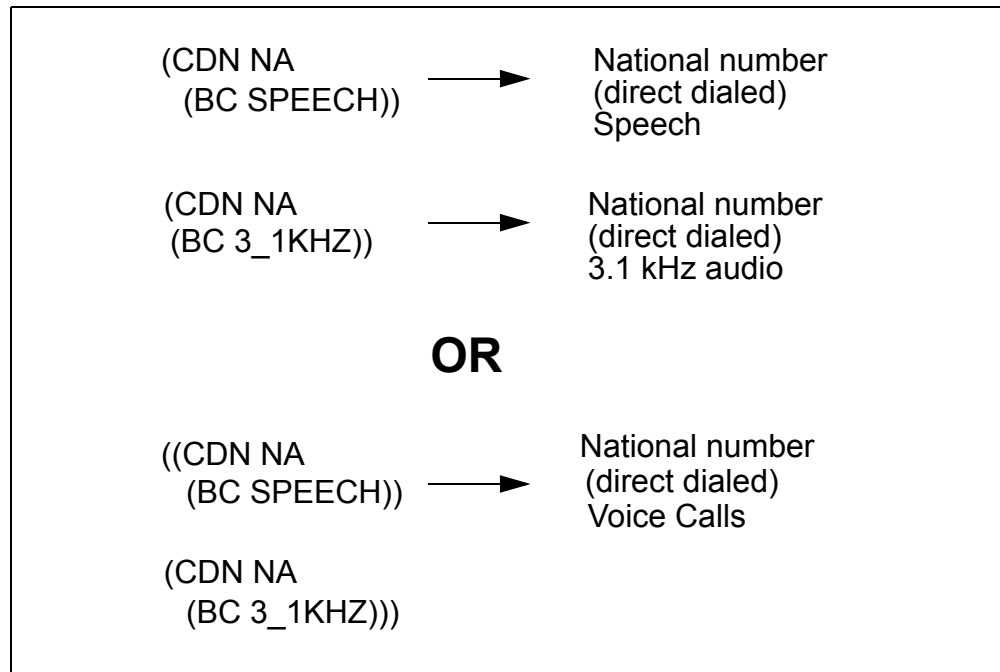
- A called party number of NA with no other routing characteristics translates as a 10-digit national number.
- An operator system access with no other routing characteristics translates as a zero minus call. The operator enters the number the user wants to call.
- When a called party number is present in conjunction with an operator system access, the call translates as a zero plus call. The call routes to an operator, but the operator does not need to enter the number as it has already been provided.
- The call does not translate as a zero minus, national number because there is no such call type.

Figure 2 on page 56 illustrates this example.

Figure 2 Example #1: combining routing characteristics

In some instances, different combinations could be treated identically. It is up to the operating company to determine whether or not the differential factor identifies a new call type.

Figure 3 on page 57 shows another possible combination.

Figure 3 Example #2: combining routing characteristics

Though both methods are correct, the one shown in Figure 3 is preferred because it minimizes datafill in the tables that use RCNAME.

2.1.2.3 Routing characteristic combinations supported by AIN response processing

Table 6 on page 58 illustrates the possible routing characteristic combinations determined from an AIN response. Each bearer capability is compatible with all combinations and is not shown here for simplicity.

Table 6 Combinations supported by AIN response processing

Type of access	Routing characteristic combinations		
National call	(CDN NA)		
National carrier call	(CDN NA)		(TNS NA)
Subscriber call	(CDN L)		
Subscriber carrier call	(CDN L)		(TNS NA)
International call	(CDN IN)		
International carrier call	(CDN IN)		(TNS NA)
International operator	(CDN IN)	(OSA PUBP)	
International carrier operator	(CDN IN)	(OSA PUBA)	(TNS NA)
National carrier operator	(CDN NA)	(OSA PUBA)	(TNS NA)
Carrier operator		(OSA PUBA)	(TNS NA)
BOC operator—zero minus call		(OSA PUBP)	
BOC operator—zero plus national call	(CDN NA)	(OSA PUBP)	
BOC operator—zero plus subscriber call	(CDN L)	(OSA PUBP)	

2.1.2.4 Recommended datafill to support AIN response processing

Datafill is highly influenced by office and AIN services. This section first documents generic RTECHAR data and, then, documents how to modify the generic RTECHAR data based on office and AIN services.



CAUTION

Incorrect translations possible

Missing datafill in table RTECHAR can produce incorrect translations.

A tuple in table RTECHAR represents the routing characteristics returned in an Analyze_Route, Forward_Call, or Send_To_Resource to an IP and the routing characteristic (BC) that is signaled in from the originating agent and used during response translations. When a tuple does not exist in table RTECHAR with the same routing characteristics as those used during

response processing, an RCNAME cannot be derived and the response cannot be translated correctly. A DFIL log (DFIL320) is generated to indicate a missing tuple.

The generic RTECHAR datafill provided in the examples is based on the following:

- The generic SSP is an equal-access end office (EAEO).
- The generic SSP supports calls from a network access point (NAP); that is, this SSP supports incoming public trunks using EAMF signaling or TNS for SS7 facilities.
- The generic SSP does not have routing services based on bearer capability (package NTX767 or NTX768).
- The generic SSP supports a variety of AIN services that allow all types of national and international calls in the AIN response, including operator and carrier calls.

Table 7 on page 59 illustrates the RCNAMES and routing characteristic combinations for various access types.

Table 7 Routing characteristic combinations by access type

Type of access	RCNAME	Routing characteristic combination
National call	NACALL	(CDN NA \$) \$
National carrier call	NACAR	(CDN NA (TNS NA) \$) \$
Subscriber call	SUBCALL	(CDN L) \$)
Subscriber carrier call	SUBCAR	(CDN L (TNS NA) \$) \$
International call	INCALL	(CDN IN \$) \$
International carrier call	INCAR	(CDN IN (TNS NA) \$) \$
International operator	INOPER	(CDN IN (OSA PUBP) \$) \$
International carrier operator	INCAROP	(CDN IN (OSA PUBA) (TNS NA) \$) \$
National carrier operator	NACAROP	(CDN NA (OSA PUBA) (TNS NA) \$) \$
Subscriber carrier operator	SUBCAROP	(CDN L (OSA PUBA) (TNS NA) \$) \$
Carrier operator	CAROP	(OSA PUBA (TNS NA) \$) \$
Bell operating company operator call	BOCOP	(CDN NA (OSA PUBP) \$) (CDN L (OSA PY\$) (OSA PUBP \$) \$

2.1.2.5 Modifying generic RTECHAR data for an office or AIN service

The generic RTECHAR data is a superset of AIN functionality with the exception of bearer capability. Some of the routing characteristic combinations can be further grouped to minimize the datafill in the associated mapping tables.

The following subsections describe in detail the modification of generic RTECHAR data depending on the office type or AIN service.

2.1.2.5.1 Offices that do not support a NAP For offices that do not support calls from a NAP, it is possible to group national calls (NACALL) and national carrier calls (NACAR). Similarly, international calls (INCALL) and international carrier calls (INCAR) could also be grouped.

Table 8 on page 60 shows routing characteristic combination for offices that do not support a NAP.

Table 8 Combinations for non-NAP supporting offices

Type of access	RCNAME	Routing characteristic combination
National call & national carrier call	NACALL	(CDN NA \$) (CDN NA (TNS NA) \$) \$
Subscriber call & Subscriber carrier call	SUBCALL	(CDN L \$) (CDN L (TNS NA \$) \$
International call & international carrier call	INCALL	(CDN IN \$) (CDN IN (TNS NA) \$) \$

The datafill in Table 8 would replace the NACALL, NACAR, INCALL, and INCAR entries in generic RTECHAR data. All other entries specified in generic RTECHAR data remain unaltered.

2.1.2.5.2 Offices that support bearer capability routing If the office supports bearer capability routing (package NTX767 or NTX768), Bearer Capability must also be datafilled in Table RTECHAR. The following is an example of how a national call entry would expand based on Bearer Capability.

Table 9 illustrates some combinations for national call entries.

Table 9 Combinations for national call entries

Type of access	RCNAME	Routing characteristic combinations
National call (Voice call)	NACALL	(CDN NA \$) (CDN NA (BC 3_1KHZ) \$) \$

Table 9 Combinations for national call entries

Type of access	RCNAME	Routing characteristic combinations
National call (56 kbps)	NA56K	(CDN NA (BC 56KDATA) \$) \$
National call (64 kbps)	NA64K	(CDN NA (BC 64KDATA) \$) \$

Note: The 56 kbps calls are separated from the 64 kbps calls because PTS trunks support 56 kbps calls but do not support 64 kbps calls. Each entry in generic RTECHAR would need to be expanded in a way similar to the national call.

2.1.2.5.3 AIN services that do not allow international numbers

If the AIN services do not allow an international number in the response, then the tuples in Table 10 on page 61 may be removed from generic RTECHAR datafill.

Table 10 Combinations for services that do not support international numbers

Type of access	RCNAME	Routing characteristics and combinations
International call	INCALL	(CDN IN \$) \$
International carrier call	INCAR	(CDN IN (TNS NA) \$) \$
International operator	INOPER	(CDN IN (OSA PUBP) \$) \$
International carrier operator	INCAROP	(CDN IN (OSA PUBA) (TNS NA) \$) \$

All other entries in generic RTECHAR data would remain unaltered.

2.1.2.5.4 AIN services that do not allow operator numbers If the AIN services do not allow operator calls in the response, the tuples in Table 11 may be removed from generic RTECHAR datafill.

Table 11 Combinations for services that do not allow operator numbers

Type of access	RCNAME	Routing characteristic combinations
International operator	INOPER	(CDN IN (OSA PUBP) \$) \$
International carrier operator	INCAROP	(CDN IN (OSA PUBA) (TNS NA) \$) \$
National carrier operator	NACAROP	(CDN NA (OSA PUBA) (TNS NA) \$) \$
Subscriber carrier operator	SUBCAROP	(CDN L (OSA PUBA) (TNS NA) \$) \$
Carrier operator	CAROP	(OSA PUBA (TNS NA) \$) \$

Table 11 Combinations for services that do not allow operator numbers

Type of access	RCNAME	Routing characteristic combinations
Bell operating company operator call	BOCOP	(CDN NA (OSA PUBP) \$) (CDN L (OSA PUBP) \$) (OSA PUBP \$) \$

All other entries in generic RTECHAR data would remain unaltered.

2.1.3 Digits used in AIN response translations

When a public agent triggers and receives an Analyze Route or a Forward call response from the SCP with digits specified, translation and routing processing should take place to translate the digits and route the call. Depending on the nature of the response, digits to translate can have different format.

Table 12 on page 62 summarizes the digits used in response translations for various carrier and called party number combinations. The maximum number of digits supported is 18.

Table 12 Digits used in AIN translation

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits used in translations for an end office	Digits used in translations for an access tandem
National number	10D	XXX	10XXX+(10)D	0XXX+(10)D
Subscriber number	7D	XXX	10XXX+(7)D	0XXX+(7)D
International number	7-15D	XXX	10XXX+(7-12)D	0XXX+(7-12)D
No address present, operator requested	0D	XXX	10XXX	0XXX
National number, operator requested	10D	XXX	10XXX+(10)D	0XXX+(10)D
Subscriber number, operator requested	7D	XXX	10XXX+(7)D	0XXX+(7)D
International number, operator requested	7-15D	XXX	10XXX+(7-12)D	0XXX+(7-12)D
National number	10D	XXXX	101XXXX+(10)D	XXXX+(10)D
Subscriber number	7D	XXXX	101XXXX+(7)D	XXXX+(7)D
International number	7-15D	XXXX	101XXXX+(7-12)D	XXXX+(7-12)D
No address present, operator requested	0D	XXXX	101XXXX	XXXX

Table 12 Digits used in AIN translation (Continued)

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits used in translations for an end office	Digits used in translations for an access tandem
National number, operator requested	10D	XXXX	101XXXX+(10)D	XXXX+(10)D
Subscriber number, operator requested	7D	XXXX	101XXXX+(7)D	
International number, operator requested	7-15D	XXXX	101XXXX+(7-12)D	
National number	10D	Not present	(10)D	
Subscriber number	7D	Not present	(7)D	
International number	7-15D	Not present	(7-12)D	
No address present, operator requested	0D	Not present	0	
National number, operator requested	10D	Not present	(10D)	
Subscriber number, operator requested	7D	Not present	(7)D	
International number, operator requested	7-15D	Not present	(7-12)D	
950+ Call	7D	Not present	(7)D	
Carrier cut-through	Not present	XXX	10XXX	N/A
Carrier cut-through	Not present	XXXX	101XXXX	N/A

2.1.4 Table PXLAMAP

When a public agent triggers and receives an Analyze Route or a Forward call response from the SCP with digits specified, translation and routing functions should take place to translate the digits and route the call. The digits coming into the SCP response are not in a format that can reuse the originator's public pretranslator (digits could be in 10D format whereas local dialing supports only 7D format, no international access code is prefixed for international

calls). Table PXLAMAP (pretranslator mapping) is used to map to new pretranslators into the public environment to allow the DMS to translate differently given a RCNAME and a pretranslator.

Table PXLAMAP allows the operating company to alter translation through the following methods:

- The XLA selector directs the call to use a new pretranslator name.
- The POSITION selector provides access to a routing position if there are no address digits to translate on. Note that this selector is not supported by the current AIN release.
- The ROUTE selector provides direct access to a route list element when there are no address digits to translate on. Note that this selector is not supported by the current AIN release.
- The PREFIX selector activates the Response Translations Simplification. Digit conversion process is used in conjunction with the XLA selector to specify an exception pretranslator.

Note 1: This selector can be used only if the Response Translations Simplification feature is active.

Note 2: If no tuple is present for an RCNAME and an STDPRTNM the Response Translations Simplification digit conversion process is activated by default.

AIN response processing supports only the XLA and PREFIX selectors.

2.1.4.1 Recommended datafill to support AIN response processing

The generic PXLAMAP datafill provided here is based on the following:

- The service switching point (SSP) is an equal-access end office (EAEO).
- This office supports a variety of AIN services that allow all types of national and international calls in the AIN response, including operator and carrier calls.
- The pretranslator names to be mapped are derived from the following:
 - All public line attributes for AIN supported agents
 - All public trunk groups for AIN supported agents
 - All private LINEATTRs that are used in AIN response processing, as defined in Section 4.1.6 “Table LINEATTR” on page 170.

The RCNAMES used in Table 13 are from the generic RTECHAR example. If an office modified table RTECHAR data, the following example should be modified accordingly.

Table 13 Recommended PXLAMAP datafill

RCNAME	XLANAME (Note)	Data
NACALL	P621	(XLA NAT) \$
NACAR	P621	(XLA NAT) \$
SUBCALL	P621	(XLA NAT) \$
SUBCAR	P621	(XLA NAT) \$
INCALL	P621	(XLA INT) \$
INCAR	P621	(XLA INT) \$
INOPER	P621	(XLA IOP) \$
INCAROP	P621	(XLA ICOP) \$
NACAROP	P621	(XLA NCOP) \$
SUBCAROP	P621	(XLA NCOP) \$
CAROP	P621	(XLA CAOP) \$
BOCOP	P621	(XLA NAOP) \$
NACALL	PTRK	(XLA NAT) \$
SUBCALL	PTRK	(XLA NAT) \$
NACAR	PTRK	(XLA NAPC) \$
SUBCAR	PTRK	(XLA NAPC) \$
INCALL	PTRK	(XLA INT) \$
INCAR	PTRK	(XLA NAPC) \$
Note: Assume P621 is the public translator for a public line and PTRK is the pretranslator for a public trunk.		

Though it is not necessary to separate the national and national carrier calls for lines, it is necessary to separate them for public trunks. Details of the new translator names and their function are provided in the next chapter.

The above entries for P621 need to be duplicated for each line pretranslator name. The new pretranslator names would be reused for each line pretranslator

because there is only one dialing plan. Similarly, duplication of the PTRK entries would be required for public trunks.

The new pretranslator names (for example, NAT) would need to be datafilled in table STDPRTCT before datafilling table PXLAMAP.

2.1.4.2 Modifying generic table PXLAMAP data for office or AIN service

If the AIN services do not support international or operator calls, the tuples with RCNAMEs reflecting these call types are required.

If the office supports only individual or customer group triggers, table PXLAMAP would require only the pretranslator for each subscribed agent. For office-based triggers, every pretranslator of each agent would be required.

2.1.4.2.1 Datafill for multiple public dialing plans If there is more than one dialing plan, additional new pretranslators would be required to support the additional dialing plans.

Note: The number of new pretranslators depends on several factors.

The example in Table 14 depicts sample datafill for two lines in different LATAs. Assume that the international carriers are the same for both LATAs.

Table 14 Sample datafill for two lines in different LATAs

RCNAME	XLANAME	Data
NACALL	P621	(XLA NAT) \$
NACALL	P622	(XLA NAT2) \$
NACAR	P621	(XLA NAT) \$
NACAR	P622	(XLA NAT2) \$
INCALL	P621	(XLA INT) \$
INCALL	P622	(XLA INT) \$
INCAR	P622	(XLA INT) \$
INCAR	P622	(XLA INT) \$

Note: The same pretranslator can be used for all international calls. Different pretranslators are used for national calls to differentiate among inter-LATA and intra-LATA calls.

2.1.4.2.2 Mapping RCNAMEs to reuse pretranslators The generic datafill shows seven new pretranslators for a line originator. Depending on the office, these can be further reduced to four pretranslators. The main difference is that the generic datafill allows a different carrier operator to be selected based on whether the 10XXX was dialed. If different carrier operators are not required, the generic datafill can be modified as in Table 15 for the a line originator.

Table 15 Modified generic datafill

RCNAME	XLANAME	Data
NACALL	P621	(XLA NAT) \$
NACAR	P621	(XLA NAT) \$
SUBCALL	P621	(XLA NAT) \$
SUBCAR	P621	(XLA NAT) \$
INCALL	P621	(XLA INT) \$
INCAR	P621	(XLA INT) \$
INOPER	P621	(XLA IOP) \$
INCAROP	P621	(XLA IOP) \$
NACAROP	P621	(XLA NCOP) \$
SUBCAROP	P621	(XLA NCOP) \$
CAROP	P621	(XLA NCOP) \$
BOCOP	P621	(XLA NCOP) \$
NACALL	PTRK	(XLA NAT) \$

2.1.5 Table STDPRTCT

Table STDPRTCT and its subtable STDPRT are the main tables used in translating different call types. In the past, different call types were identified through unique digits datafilled in a standard pretranslator.

2.1.5.1 Recommended datafill for tables STDPRTCT and STDPRTCT.STDPRT

Any new pretranslator to map to in table PXLAMAP should be defined in table STDPRTCT before.

The generic STDPRTCT datafill provided in Table 16 on page 68 is based on the following:

- The generic SSP is an equal-access end office (EAEO).
- The generic SSP supports a variety of AIN services that allow all types of national and international calls in the AIN response, including operator and carrier calls.
- The datafill used in the previous STDPRTCT example is used as reference material.

The RCNAMES used in Table 16 on page 68 are from the generic RTECHAR example. If an office modifies table RTECHAR data, the following example should be modified accordingly.

Table 16 Generic STDPRTCT datafill

STDPRTCT	
NAT	(1) (1234) ... (national calls)
	Subtable STDPRT
	The entry for the carrier below is similar to the destination provided in the MCI1 translator for national calls.
	10488 10488 EA DD 5 T NA 488 Y OFRT 700 5 15 N
	9501542 9501542 FGB DD 0 C542 Y OFR3 542 7 7
	... other carriers ... (similar datafill as pretranslators for carrier, NA call)
	2 410 N DD 0 NA
	411 411 T NP 0 OFRT 1 3 3 NONE
	412 510 N DD 0 NA
	... other N11 ...
	... Note that the standard North American entries are interleaved.
	The following entry is required for home area codes that do not require billing.
	613 613 N NP 0 NA

Table 16 Generic STDPRTCT datafill (Continued)

STDPRTCT	
INT	(1) (123) (international calls)
	Subtable STDPRT
	The entry for the carrier below is similar to the destination provided in the MCI1 recursive translator for international calls. 10488 10488 EA DD 5 T IN 488 Y OFRT 701 5 15 N
	... other carriers ... (same datafill as pretranslators for carrier, IN call)
	The entry below is similar to the P621 translator for international direct dialed calls. 2 9 N DD 0 IN
NAOP	(1) (122) ... (national operator call)
	Subtable STDPRT
	The entry below is similar to the P621 translator for national operator calls. 2 9 P OA 0 NA TOPS
IOP	(1) (12) ... (international operator call)
	Subtable STDPRT
	The entry below is similar to the P621 translator for international operator calls. 2 9 P OA 0 IN TOPS
NCOP	(1) (127) ... (national carrier operator call)
	Subtable STDPRT
	The entry for the carrier below is similar to the destination provided in the MCI1 translator for national carrier operator call. 10488 10488 EA OA 5 T NA 488 Y OFRT 700 5 15 N
	... other carriers... (similar datafill as pretranslators for carrier)
CAOP	(1) (127) ... (operator carrier call—no address present)
	Subtable STDPRT
	The entry for the carrier below is similar to the destination provided in the MCI1 translator for “00” carrier operator call. 10488 10488 EA OA 5 T NO 488 Y OFRT 700 5 5 N
	... other carriers ... (similar datafill as pretranslators for carrier, “00” operator call)

Table 16 Generic STDPRTCT datafill (Continued)

STDPRTCT	
ICOP	(1) (125) ... (international carrier operator call)
	Subtable STDPRT
	The entry for the carrier below is similar to the destination provided in the MCI1 translator for international operator calls. 10488 10488 EA OA 5 T IN 488 Y OFRT 701 5 15 N
	... other carriers ... (similar datafill as pretranslators for carrier, IN operator call)
NAPC	(1) (125) ... (NAP or access carrier call)
	Subtable STDPRT
	The entry for the carrier below is similar to the destination provided in the PTRK 0ZZ XXX call. 488 488 ET DD 3 MCI Y OFRT 900 3 15
	... other carriers ... (similar datafill OZZ XXX call)

2.1.5.2 Modifying generic STDPRTCT data for an office or an AIN service

Most switches do not differentiate between carrier operator–no address and national carrier operator within STDPRTCT. If your office does not need to differentiate, only one of NCOP or CAOP needs to be datafilled.

Some AIN services may not need to support operator calls, and so the operator pretranslators may not be required.

2.1.6 10-digit dialing in the home numbering plan

Table HNPACONT and its subtable HNPACODE is probably the most straightforward to datafill for AIN response processing. In most instances, the tuples are already present.

The entry in table HNPACONT and subtable HNPACODE allows for 10-digit dialing of a number in the home numbering plan.

The generic HNPACONT datafill provided in Table 17 is based on the fact that the generic SSP does not currently support dialing of the home NPA.

Table 17 Generic datafill example

HNPACONT

Table 17 Generic datafill example

613	984 1 (270) (1) (84) (0)
	Subtable HNPACODE
	613 613 HNP A 0

**CAUTION**

Other table changes are required if 10-digit HNP A dialing is not supported in the network.

The previous example allows for 10-digit translation of a home numbering plan number (HNP A). If other switches in the network cannot support 10-digit dialing, then additional entries in the routing table are required to delete the HNP A.

2.1.7 Route mapping tables

The route mapping tables direct the call to a new route based on the RCNAME and a route derived by translations.

2.1.7.1 Recommended datafill to support AIN response processing

Additional datafill for the route mapping tables is not required in the generic SSP because it already meets the following conditions:

- The generic SSP does not have routing based on bearer capability.
- The generic SSP supports 10-digit outpulsing of home numbering plan numbers.

However, when routing based on BC is supported or 10-digit outpulsing of home numbering plan numbers is not supported, datafill is required for an office or an AIN service.

2.1.7.2 Routing based on bearer capability

The route mapping tables are currently used for routing based on bearer capability. Normally, the route derived from translations causes the use of standard facilities, which support mainly voice communication. For some data calls, ISUP or ISDN facilities are required. Route mapping tables allow the DMS to map the standard facilities to the intelligent signaling facilities for data bearer capability.

As AIN uses other characteristics in conjunction with BC, the RCNAME that is derived from the response will probably not be the same as the RCNAME derived initially.

2.1.7.2.1 Example 1 BC64K would be used initially; NA64K would be used to translate and route the AIN response, as in Table 18.

Table 18 Datafill for example 1

Type of access	RCNAME	Routing characteristic combinations
64kbps call	BC64K	(BC 64KDATA \$) \$
National Call (64kbps)	NA64K	(CDN NA (BC 64KDATA) \$) \$

2.1.7.2.2 Example 2 If BC64K is datafilled in a route mapping table to select intelligent signaling facilities, the same tuple would need to be datafilled for NA64K as in Table 19.

Table 19 Datafill for example 2

RCNAME	INDEX	NEW INDEX
BC64K	10	510
The following entry would be required:		
NA64K	10	510

2.1.7.3 Routing without 10-digit dialing of home numbering plan numbers

See Chapter 52:“Options for offices supporting only 7-digit dialing for home numbering plan” for details on the use of the RX selector.

2.2 Sample TRAVERs for public lines and trunks without simplification

This section contains TRAVER examples of various call types during AIN response translations without activating the Response Translations Simplification feature.

2.2.1 Additional data required for AIN response translations in TRAVERs

Table RCNAME and table RTECHAR are datafilled as specified in the recommended datafill to support AIN response translations in a generic SSP, as shown in Figure 4.

Figure 4 Table RCNAME

```
TABLE RCNAME
. NACALL
. NACAR
. SUBCALL
. SUBCAR
. INCALL
. INCAR
. INOPER
. INCAROP
. NACAROP
. SUBCAROP
. CAROP
. BOCOP
```

For the generic SSP, Figure 5 on page 73 shows the entries for table RTECHAR.

Figure 5 Table RTECHAR

```
TABLE RTECHAR
. NACALL (CDN NA $) $
. NACAR (CDN NA (TNS NA) $) $
. SUBCALL (CDN L $) $
. SUBCAR (CDN L (TNS NA) $ $)
. INCALL (CDN IN $) $
. INCAR (CDN IN (TNS NA) $) $
. INOPER (CDN IN (OSA PUBP) $) $
. INCAROP (CDN IN (OSA PUBA) (TNS NA) $) $
. NACAROP (CDN NA (OSA PUBA) (TNS NA) $) $
. SUBCAROP (CDN L (OSA PUBA) (TNS NA) $ $)
. CAROP (OSA PUBA (TNS NA) $) $
. BOCOP (CDN NA (OSA PUBP) $) (CDN L (OSA PUBP $) (CDN (OSA PUBP $) $
```

If the SSP supports routing based on bearer capability, the above RTECHAR entries would be modified, as shown in Figure 6.

Figure 6 Table RTECHAR modified

```
TABLE RTECHAR
. NACALL (CDN NA $) (CDN NA (BC 3_1KHZ) $) $
. NACAR (CDN NA (TNS NA) $) (CDN NA (TNS NA) (BC 3_1KHZ) $) $
. SUBCALL (CDN L $) (CDN L (BC3_1KHZ) $) $
. SUBCAR (CDN L $) (CDN L BC3_1KHZ $) $
. INCALL (CDN IN $) (CDN IN (BC 3_1KHZ) $) $
. INCAR (CDN IN (TNS NA) $) (CDN IN (TNS NA) (BC 3_1KHZ) $) $
. INOPER (CDN IN (OSA PUBP) $) (CDN IN (OSA PUBP) (BC 3_1KHZ) $) $
. INCAROP (CDN IN (OSA PUBA) (TNS NA) $)
(CDN IN (OSA PUBA) (TNS NA) (BC 3_1KHZ)) $
. NACAROP (CDN NA (OSA PUBA) (TNS NA) $)
(CDN NA (OSA PUBA) (TNS NA) (BC 3_1KHZ)) $
. SUBCAROP (CDN L (OSA PUBA) (TNS NA) $)
(CDN L (OSA PUBA) (TNS NA) (BC3_1KHZ)) $
. CAROP (OSA PUBA (TNS NA) $) (OSA PUBA (TNS NA) (BC 3_1KHZ) $) $
. BOCOP (CDN NA (OSA PUBP) $) (OSA PUBP $) (CDN L (OSA PUBP) $)
(CDN NA (OSA PUBP) (BC 3_1KHZ) $) (CDN L (OSA PUBP) (BC3_1KHZ) $)
(OSA PUBP (BC 3_1KHZ) $)$
```

The entries shown in Figure 7 on page 74 map the RCNAME and pretranslator to obtain a new pretranslator based on call type.

Figure 7 Table PXLAMAP

```
TABLE PXLAMAP
. NACALL P722 ( XLA NAT)$
. NACALL P622 ( XLA NAT)$
. NACAR P722 ( XLA NAT)$
. SUBCALL P722 (XLA NAT)$
. SUBCALL P622 (XLA NAT)$
. SUBCAR P722 (XLA NAT)$
. INCALL P622 ( XLA INT)$
. INCAR P622 ( XLA INT)$
. INCAROP P622 ( XLA ICOP)$
. NACAROP P622 ( XLA NCOP)$
. SUBCAROP P622 (XLA NCOP)$
```

The new entries are pretranslators, as shown in Figure 8.

Figure 8 Table STDPRTCT

```

TABLE STDPRTCT
NAT ( 1) ( 0) 0
. SUBTABLE STDPRT
. 10234 10234 EA DD 5 T NA MCI Y OFRT 963 3 15 N
. 613 613 N NP 0 NA
. 819 819 N DD 0 NA
INT ( 1) ( 0) 0
. SUBTABLE STDPRT
. 10234 10234 EA DD 5 T IN MCI Y OFRT 700 5 25 Y
. 10488 10488 EA DD 5 T IN ITT Y OFRT 900 5 20 N
. 2 9 N DD 0 IN
INCOP ( 1) ( 0) 0
. SUBTABLE STDPRT
. 10234 10234 EA OA 5 T IN MCI Y OFRT 700 6 25 Y
NCOP ( 1) ( 0) 0
. SUBTABLE STDPRT
. 10488 10488 EA OA 5 T NA ITT Y OFRT 963 5 20 N

```

The entry shown in Figure 9 allows for 10-digit dialing of home numbering plan.

Figure 9 Table HNPACONT

```

TABLE HNPACONT
613 20 15 ( 0) ( 1) ( 0) ( 0) 0
. SUBTABLE HNPACODE
. 613 613 HNPA 0

```

2.2.2 National call - returned number on the same SSP

The command line assumes that the originator is an IBN line 613 622 1243 and the CalledPartyID = National Number 6136221243. TRAVER 10 provides a sample TRAVER output for a national call, when the returned number is on the same SSP.

Figure 10 TRAVER for a national call (returned number on the same SSP)

```

>traver 1 6136221243 n cdn na 6136221243 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 01 0 00 02 0 DT STN IBN 6221243 COMKODAK 0 0 613 $
TABLE DNATTRS
TUPLE NOT FOUND

```

Figure 10 TRAVER for a national call (returned number on the same SSP) (Continued)

```

TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
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 6 COL L 1
TABLE XLAMAP
. CDNPUB PXDK ( XLA AINPUB)$
TABLE IBNXLA: XLANAME AINPUB
TUPLE NOT FOUND
DEFAULT FROM TABLE XLANAME:
AINPUB
      (NET N N 0 N NDGT N N GEN ( LATTR 862 613_AIN1_862 L613_LATA1_0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
862 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN1_862 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN1_862 FR01 613 AIN1 TOPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
AIN1 ( 1) ( 0) 2
. 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 999 1 ( 314) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 613 613 HNPA 0

```

Figure 10 TRAVER for a national call (returned number on the same SSP) (Continued)

```

. 622 622 DN 613 622
TABLE TOFCNAME
613 622 $
TABLE DNINV
613 622 1243 L HOST 01 0 00 02
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 LCASCRN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. 613 613
TABLE LCASCRN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. 622 623
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
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) ( ESCOA ) ( 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                6136221243                ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO

```

Figure 10 TRAVER for a national call (returned number on the same SSP) (Continued)

```
2 LKOUT

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

2.2.3 National call - returned number within the user HNP

The command line assumes that the originator is an IBN line 6136221243 and the CalledPartyID = National Number 6134257320. TRAVER 11 provides a sample TRAVER output for a national call, when the returned number is in the user HNP.

Figure 11 TRAVER for a national call (returned number in the user HNP)

```
>traver 1 6136221243 n cdn na 6134257320 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 01 0 00 02 0 DT STN IBN 6221243 COMKODAK 0 0 613 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
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 6 COL L 1
TABLE XLAMAP
. CDNPUB PXDK ( XLA AINPUB)$
TABLE IBNXLA: XLANAME AINPUB
TUPLE NOT FOUND
DEFAULT FROM TABLE XLANAME:
AINPUB
        (NET N N 0 N NDGT N N GEN ( LATTR 862 613_AIN1_862 L613_LATA1_0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
862 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN1_862 L613_LATA1_0 $
```

Figure 11 TRAVER for a national call (returned number in the user HNP) (Continued)

```

LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN1_862 FR01 613 AIN1 TOPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
AIN1 ( 1) ( 0) 2
. 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 999 1 ( 314) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 613 613 HNPA 0
. 425 425 HRTE 425
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 425 N D OCTNI2DTCI08 3 722 N
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNPA 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
. 425 427
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
TABLE TRIGGRP
CUSTTRIGGRP_CDP INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
TABLE TRIGGRP

```

Figure 11 TRAVER for a national call (returned number in the user HNP) (Continued)

```

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 OCTNI2DTCI08                N CDN  E164  NA  7224257320 NIL_NSF  BC
SPEECH
Outpulsing on this route is modified by the following options:
(DNIS)

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

2.2.4 National call - returned number not within the user HNP

The command line assumes that the originator is an IFR line 613 622 1243 and the CalledPartyID = National Number 8197226992. TRAVER 12 provides a sample TRAVER output for a national call, when the returned number is not in the user HNP.

Figure 12 TRAVER for a national call (returned number not in the user HNP)

```

>traver 1 6136221243 n cdn na 8197226992 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 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_P622_0 NSCR 613 P622 NONE N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS

```

Figure 12 TRAVER for a national call (returned number not in the user HNP) (Continued)

```

TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. CDNPUB P622 ( XLA NAT)$
TABLE STDPRTCT
NAT ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 819 819 N DD 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
. 819 819 FRTE 150
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 150 N D OTMF2 0 N N
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNP 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 LENFEAT
HOST 01 0 10 10 S PIC PIC ITT Y
TABLE LATAOLA
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 12 TRAVER for a national call (returned number not in the user HNP) (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 OTMF2                8197226992          ST

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

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

2.2.5 Subscriber call

The command line assumes that the originator is an 1FR line 6136221243 and the CalledPartyID = Subscriber Number 4257320. TRAVER 13 provides a sample TRAVER output for a subscriber call.

Figure 13 Sample TRAVER output for a subscriber call

```
>traver 1 6136221243 n cdn 1 4257320 ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.

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_P622_0 NSCR 613 P622 NONE 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 STDPRTCT
P622 ( 1) ( 0) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
```


Figure 13 Sample TRAVER output for a subscriber call (Continued)

```

BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 42 510 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
. 425 425 DN 613 425
TABLE TOFCNAME
613 425 $
TABLE DNINV
613 425 7320 L HOST 01 0 09 09
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 N N
. SUBTABLE LCASCR
. 425 427
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE FNPA7DIG
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) ( ESCOA ) ( 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

```

Figure 13 Sample TRAVER output for a subscriber call (Continued)

```

1 LINE                      6134257320          ST

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

2.2.6 National carrier call

The command line assumes that the originator is an IBN line 6137223211, the CalledPartyID = National Number 4162581234, and the PrimaryCarrierID = 0488. TRAVER 14 provides a sample TRAVER output for a national carrier call.

Figure 14 Sample TRAVER output for a national carrier call

```

>traver 1 6137223211 n cdn na 4162581234 tns na cic 0488 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)$) (CDN IN (TNS NA)$) ( BC 3_1KHZ (CDN NA) (TNS
NA)$) ( BC 3_1KHZ (CDN IN) (TNS NA)$)$
TABLE IBNLINES
HOST 01 0 00 01 0 DT STN IBN 7223211 COMKODAK 0 0 613 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
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 1 RPT
TABLE XLAMAP
. TNSPUB PXDK ( XLA AINPUB)$
TABLE IBNXLA: XLANAME AINPUB
TUPLE NOT FOUND
DEFAULT FROM TABLE XLANAME:
AINPUB
        (NET N N 0 N NDGT N N GEN ( LATTR 862 613_AIN1_862 L613_LATA1_0)

```

Figure 14 Sample TRAVER output for a national carrier call (Continued)

```

(EA GTE Y 9) $ $) $ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
862 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN1_862 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN1_862 FR01 613 AIN1 TOPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
AIN1 ( 1) ( 0) 2
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10488 10488 EA DD 5 P PEA1 ITT Y OFRT 900 5 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 3
. . S D OGEAITT
. . N D ISUPOGITT 0 N N
. . CND ALWAYS SK 2
. . N D OGEAITT 15 D179 N
. . N D ISUPOGITT 0 D179 N
. . EXIT TABLE OFRT
TABLE PXLAMAP
. . 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
. 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

```

Figure 14 Sample TRAVER output for a national carrier call (Continued)

```

. 416 416 HNPA 0
. 258 258 LRTE 719
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 719 N D AIN_DUMMY_TRK 0 $ Y
. AFR ROCKINFO
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
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
EA:Local override does not apply to this call.
TABLE LATAOLA
LATA1 416258 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 Y
TABLE EASAC
TUPLE NOT FOUND
OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP
DEFINED
Using Equal Access (EA) route OFRT 900 from Pretranslation
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
900 CND EA INTNL SK 3
S D OGEAITT
N D ISUPOGITT 0 N N
CND ALWAYS SK 2
N D OGEAITT 15 D179 N
N D ISUPOGITT 0 D179 N
TABLE OFRTMAP
. Tuple not found. Default to old index.
EXIT TABLE OFRT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 OGEAITT 4162581234 ST
2 ISUPOGITT 4162581234 ST

```

Figure 14 Sample TRAVER output for a national carrier call (Continued)

```

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

2.2.7 International call

The command line assumes that the originator is an 1FR line 6136212112 and the CalledPartyID = International 8527146926. TRAVER 15 provides a sample TRAVER output for and international call.

Figure 15 Sample TRAVER output for an international call

```

>traver 1 6136212112 n cdn in 8527146926 ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. INTPUB (CDN IN $) (CDN IN (TNS NA)$)$
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_NILLA_4 L613 NIL NILLATA $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. INTPUB P621 ( XLA INT)$
TABLE STDPRTCT
INT ( 1) ( 0) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 8 9 N DD 0 IN
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN

```

Figure 15 Sample TRAVER output for an international call (Continued)

```
TUPLE NOT FOUND
TABLE CCTR
852 T 692 9 11 T OFRT 64 Y $
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
  64 N D TOPOGNY 3 N N
    N D TERMBX01 3 N N
EXIT TABLE OFRT
TABLE LENFEAT
HOST 01 0 10 10 S PIC PIC ITT Y
LATA IS NIL, THEREFORE NOT AN EQUAL ACCESS CALL
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 TOPOGNY                7146926          ST
2 TERMBX01               7146926          ST

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

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

2.2.8 International carrier call

The command line assumes that the originator is an 1FR line 6136212112, the CalledPartyID = International 8527146926, and the PrimaryCarrierID = 0488. TRAVER 16 provides a sample TRAVER output for an international carrier call.

Figure 16 Sample TRAVER output for an international carrier call

```
>traver 1 6136212112 n cdn in 8527146926 tns na cic 0488 ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
```

Figure 16 Sample TRAVER output for an international carrier call (Continued)

```

TABLE RTECHAR
. INTPUB (CDN IN $) (CDN IN (TNS NA)$)$
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_NILLA_4 L613 NIL NILLATA $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. INTPUB P621 ( XLA INT)$
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY 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 OFRTMAP
. . . Tuple not found. Default to old index.
. . 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 PXLAMAP
. INTPUB PEA1 ( XLA INT)$
TABLE STDPRTCT
INT ( 1) ( 0) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 8 9 N DD 0 IN
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N

```

Figure 16 Sample TRAVER output for an international carrier call (Continued)

```

TABLE HPCPATTN
TUPLE NOT FOUND
TABLE CCTR
852 T 692 9 11 T OFRT 64 Y $
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
  64 N D TOPOGNY 3 N N
    N D TERMBX01 3 N N
EXIT TABLE OFRT
LATA IS NIL, THEREFORE NOT AN EQUAL ACCESS CALL
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 +++

TREATMENT ROUTES.  TREATMENT IS: VACT
1 VCA
2 *OFLO
3 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

2.2.9 International operator

The command line assumes that the originator is a 1FR line 6136212112 and the CalledPartyID = International, Operator Requested 8527146926. TRAVER 17 provides a sample TRAVER output for an international operator.

Figure 17 Sample TRAVER output for an international operator

```

>traver l 6136212112 n cdn in 8527146926 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 NA)$)$
TABLE LINEATTR

```


Figure 17 Sample TRAVER output for an international operator

```

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_NILLA_4 L613 NIL NILLATA $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. OSAPPUB P621 ( XLA IOP)$
TABLE STDPRTCT
IOP ( 1) ( 0) 2
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 8 9 N OA 0 IN
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE CCTR
852 T 692 9 11 T OFRT 64 Y $
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
64 N D TOPOGNY 3 N N
N D TERMBX01 3 N N
EXIT TABLE OFRT
TABLE LENFEAT
HOST 01 0 10 10 S PIC PIC ITT Y
LATA IS NIL, THEREFORE NOT AN EQUAL ACCESS CALL
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.

```

Figure 17 Sample TRAVER output for an international operator

```

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 TOPOGNY                7146926          ST
2 TERMBX01               7146926          ST

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

2.2.10 International carrier operator

The command line assumes that the originator is a 1FR line 6136212112, the CalledPartyID = International, Operator Requested 8527146926, and the PrimaryCarrierID = 0488. TRAVER 18 provides a sample TRAVER output for an international carrier operator.

Figure 18 Sample TRAVER output for an international carrier operator

```

>traver 1 6136212112 n cdn in 8527146926 tns na cic 0488 osa puba ainres
r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. OSAAPUB (OSA PUBA (TNS NA)$) (OSA PUBA (CDN NA) (TNS NA)$) (OSA PUBA
(CDN IN) (TNS NA)$) ( BC 3_1KHZ (OSA PUBA) (TNS NA)$) ( BC 3
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
. OSAAPUB P621 ( XLA IOP)$
TABLE STDPRTCT

```

Figure 18 Sample TRAVER output for an international carrier operator (Continued)

```

IOP ( 1) ( 0) 2
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10488 10488 EA OA 5 T IN ITT Y OFRT 64 6 25 Y
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 64 N D TOPOGNY 3 N N
. . N D TERMBX01 3 N N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE CCTR
852 T 692 9 11 T OFRT 64 Y $
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
64 N D TOPOGNY 3 N N
N D TERMBX01 3 N N
EXIT TABLE OFRT
EA:Local override does not apply to this call.
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 Y
TABLE EASAC
TUPLE NOT FOUND
OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP
DEFINED
Using Equal Access (EA) route OFRT 64 from Pretranslation
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
64 N D TOPOGNY 3 N N
N D TERMBX01 3 N N
TABLE OFRTMAP
. Tuple not found. Default to old index.
EXIT TABLE OFRT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 TOPOGNY 7146926 ST

```

Figure 18 Sample TRAVER output for an international carrier operator (Continued)

```

2 TERMBX01                7146926                ST

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

2.2.11 National carrier operator

The command line assumes that the originator is a 1FR line 6136212112, the CalledPartyID = National, Operator Requested 4162581234, and the PrimaryCarrierID = 0488. TRAVER 19 provides a sample TRAVER output for a national carrier operator.

Figure 19 Sample TRAVER output for a national carrier operator

```

>traver 1 6136212112 n cdn na 4162581234 tns na cic 0488 osa puba ainres
r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. OSAAPUB (OSA PUBA (TNS NA)$) (OSA PUBA (CDN NA) (TNS NA)$) (OSA PUBA
(CDN IN) (TNS NA)$) ( BC 3_1KHZ (OSA PUBA) (TNS NA)$) ( BC 3
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
. OSAAPUB P621 ( XLA NCOP)$
TABLE STDPRTCT
NCOP ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10488 10488 EA OA 5 T NA ITT Y OFRT 963 5 20 N

```

Figure 19 Sample TRAVER output for a national carrier operator (Continued)

```

. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . . 963 CND EA INTNL SK 3
. . . N D AINISUPITEAOG3 0 D077 N
. . . N D AINMFITEAOG 10 D077 N
. . . CND ALWAYS SK 2
. . . N D AINISUPITEAOG3 0 D177 N
. . . N D AINMFITEAOG 10 D177 N
. . EXIT TABLE OFRT
. 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
. 416 416 HNPA 0
. 258 258 LRTE 719
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 719 N D AIN_DUMMY_TRK 0 $ Y
. AFR ROCKINFO
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
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 OA N OA UNDT
TABLE CLSVSCRC
613 FR01 OA 2 N NONE ( 1)
. SUBTABLE CLSVSCR
. 416 416 T OFRT 609
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
609 N D TSPSTO 0 N N
EXIT TABLE OFRT
EA:Local override does not apply to this call.
TABLE LATAOLA
LATA1 416258 INTER INTER STD
TABLE OCCINFO

```

Figure 19 Sample TRAVER output for a national carrier operator (Continued)

```

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 Y
TABLE EASAC
TUPLE NOT FOUND
OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP
DEFINED
Using Equal Access (EA) route   OFRT   963 from Pretranslation
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
  963 CND EA INTNL SK 3
      N D AINISUPITEAOG3 0 D077 N
      N D AINMFITEAOG 10 D077 N
      CND ALWAYS SK 2
      N D AINISUPITEAOG3 0 D177 N
      N D AINMFITEAOG 10 D177 N
TABLE OFRTMAP
. Tuple not found. Default to old index.
EXIT TABLE OFRT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 AINISUPITEAOG3          D0774162581234      ST
2 AINMFITEAOG            D077                  ST

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

2.2.12 Carrier operator

The command line assumes that the originator is a 1FR line 6136212112, the CalledPartyID = Operator Requested 8527146926, and the PrimaryCarrierID = 0488. TRAVER 20 provides a sample TRAVER output for a carrier operator.

Figure 20 Sample TRAVER output for a carrier operator

```

>traver l 6136212112 n tns na cic 0488 osa puba ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. OSAAPUB (OSA PUBA (TNS NA)$) (OSA PUBA (CDN NA) (TNS NA)$) (OSA PUBA
(CDN IN) (TNS NA)$) ( BC 3_1KHZ (OSA PUBA) (TNS NA)$) ( BC 3

```

Figure 20 Sample TRAYER output for a carrier operator (Continued)

```

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
. OSAAPUB P621 ( XLA NCOP)$
TABLE STDPRTCT
NCOP ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10488 10488 EA OA 5 T NA ITT Y OFRT 963 5 20 N
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 963 CND EA INTNL SK 3
. . N D AINISUPITEAOG3 0 D077 N
. . N D AINMFITEAOG 10 D077 N
. . CND ALWAYS SK 2
. . N D AINISUPITEAOG3 0 D177 N
. . N D AINMFITEAOG 10 D177 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE CLSVSCRC
613 FR01 OA 2 N NONE ( 1)
. SUBTABLE CLSVSCR
EA:Local override does not apply to this call.
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 Y
TABLE EASAC
NOT ENOUGH DIGITS FOR SAC CALL

```

Figure 20 Sample TRAVER output for a carrier operator (Continued)

```

OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP
DEFINED
Using Equal Access (EA) route   OFRT   963 from Pretranslation
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
  963 CND EA INTNL SK 3
      N D AINISUPITEAOG3 0 D077 N
      N D AINMFITEAOG 10 D077 N
      CND ALWAYS SK 2
      N D AINISUPITEAOG3 0 D177 N
      N D AINMFITEAOG 10 D177 N
TABLE OFRTMAP
. Tuple not found. Default to old index.
EXIT TABLE OFRT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 AINISUPITEAOG3          D077          ST
2 AINMFITEAOG            D077          ST

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

2.2.13 Bell operating company operator call

The command line assumes that the originator is a 1FR line 6136212112 and the CalledPartyID = no address present, operator requested. TRAVER 21 provides a sample TRAVER output for a Bell operating company, operator call.

Figure 21 Sample TRAVER output for a Bell operating company operator call

```

>traver 1 6136212112 n cdn na 0 osa puba ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
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 21 Sample TRAVER output for a Bell operating company operator call (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 STDPRTCT
P621 ( 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
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) ( ESCOA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.
ZERO MINUS POS FROM TABLE XLAPLAN
TABLE POSITION
TSPS T OFRT 106
TABLE OFRT
106 N D LNTOPSO 1 N N
EXIT TABLE OFRT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

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

POSITION ROUTES.  POSITION IS: TSPS
1 LNTOPSO          N          ST3P

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

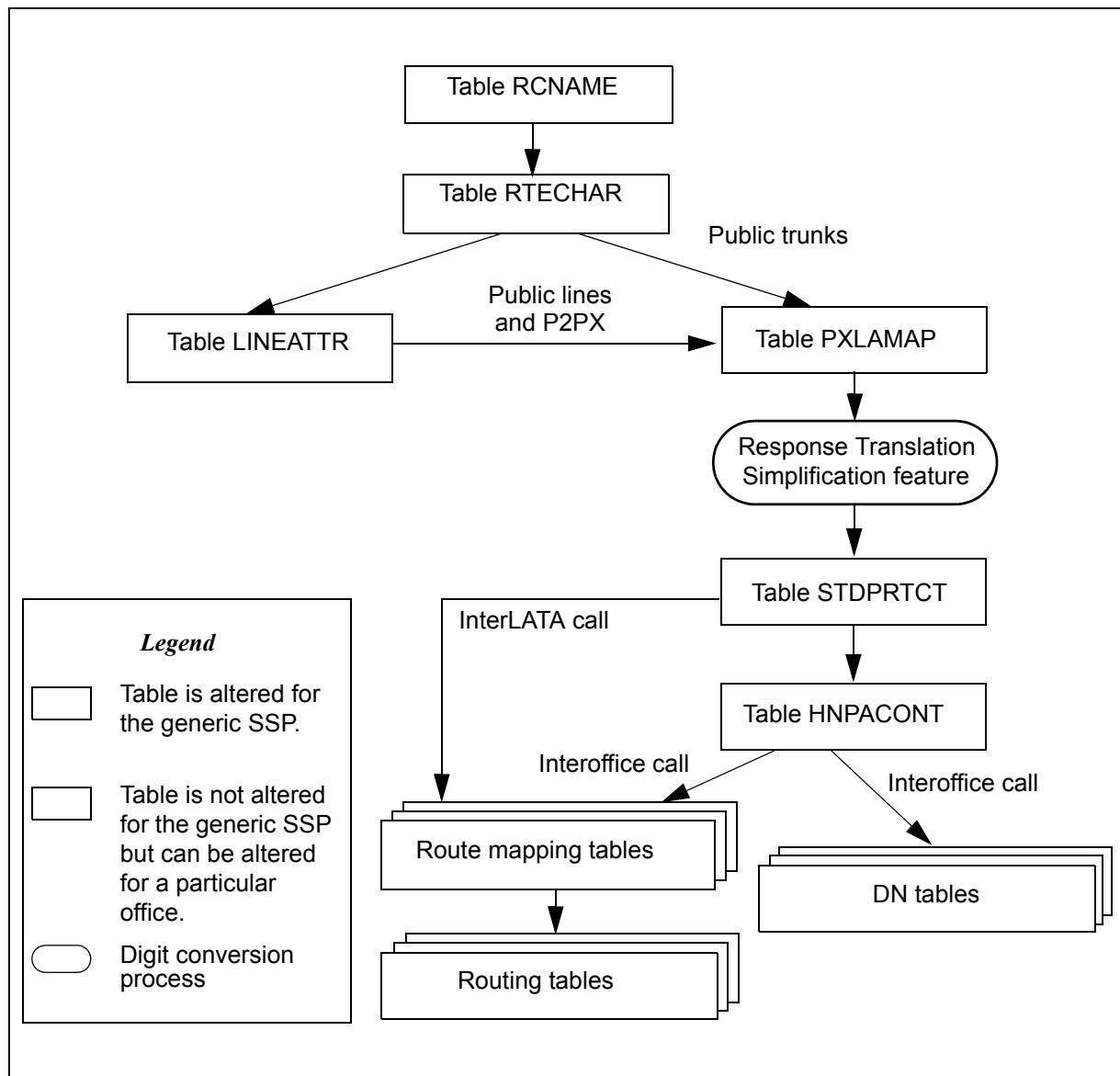
3 AIN simplified response translations for public agents

**CAUTION****Possible loss of service**

Incorrect translations can result in call failures or automatic message accounting (AMA) losses. To minimize the number of call failures, alter translations only during low-traffic periods.

The response translations simplification feature reduces the amount of datafill required to support AIN response translation. This feature is used to convert SCP Analyze Route or Forward Call response into a digit format that can reuse the triggering agent's translation datafill. See Table 42 on page 165.

Figure 22 outlines the different tables needed for AIN simplified response translations for public agents and the relationship between these tables.

Figure 22 AIN table relationships for public agent - with simplification

3.1 Table PXLAMAP

When the feature SOC AIN00026 is ON, AIN Response Translations Simplification is activated from table PXLAMAP under either of the following conditions:

- No tuple is present for the triggering agent's pretranslator and the RCNAME derived from the SCP response.
- A tuple is present for the triggering agent's pretranslator and the RCNAME derived from the SCP response, with the PREFIX selector present.

In the case where there is no tuple in PXLAMAP, the feature is invoked to convert the digits into a format that can reuse the datafill contained in the originator's pretranslator.

When the converted digits cannot reuse the datafill contained in the originator's pretranslator, a new pretranslator must be defined to handle this exception. This exception pretranslator can in most cases can be shared among several AIN response translations calltypes, minimizing the number of exception translators required. When the exception pretranslator is to be used, tuples must be defined in table PXLAMAP with the PREFIX and XLA selectors to direct call processing to use the exception pretranslator.

When response translations simplification is active, translations must be setup as described in Chapter 2: "AIN response translations for public agents" on page 47 . In particular, CDN L calls with OSA components do not trigger at the Operator_Services trigger unless such translations are in place.

Travers for SCP responses with subscriberNumberOperatedRequested called party numbers and PRI Setup messages with a CDN L information element (when the response translations simplification feature is active) indicate that the number has undergone ISDN digit conversion, but there is no change in the digits.

3.2 Different digit streams produced by simplification

The Response Translations Simplification feature works under the following assumptions:

- The digits in the response for national number and national number operator requested are 10D. When the response contains a subscriber number (7D), digits conversion is not performed.
- For incoming local or FGC trunks, it is assumed that the originating trunk's translations are based on 10D translation.

3.2.1 Triggering agents of type public line

For all call types, except National Direct Dial (where CDN=NA & TNS=UNK & OSA=UNK) and National Carrier Direct Dial (where CDN=NA & TNS=NA & OSA=UNK), the conversion rules are based on existing dial plan conventions:

- "0" is prefixed for national number operator requested
- "011" are prefixed for international number
- "01" are prefixed for international number operator requested
- "10XXX" or "101XXXX" are prefixed for carrier access

Table 20 summarizes the digits used in translation after being converted by the Response Translations Simplification feature when the triggering agent is a public line and when call types are other than National Direct Dial (where CDN=NA & TNS=UNK & OSA=UNK) and National Carrier Direct Dial (where CDN=NA & TNS=NA & OSA=UNK).

Table 20 Digits used in translation after simplification

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits produced by the feature and used in translations	CDN	OSA	TNS
International number	7-15D	Not present	011+(7-15)D	IN	NIL	NIL
No address present, operator requested	0D	Not present	0-	NIL	PUBP	NIL
National number, operator requested	10D	Not present	0+(10)D	NA	PUBP	NIL
International number, operator requested	7-15D	Not present	01+(7-15)D	IN	PUBP	NIL
International number	7-15D	0XXX	10XXX+011+(7-15)D	IN	NIL	NA
No address present, operator requested	0D	0XXX	10XXX0-	NIL	PUBA	NA
National number, operator requested	10D	0XXX	10XXX+0+(10)D	NA	PUBA	NA
International number, operator requested	7-15D	0XXX	10XXX+01+(7-15)D	IN	PUBA	NA
International number	7-15D	XXXX	101XXXX+011+(7-15)D	IN	NIL	NA
No address present, operator requested	0D	XXXX	101XXXX0-	NIL	PUBA	NA
National number, operator requested	10D	XXXX	101XXXX+0+(10)D	NA	PUBA	NA
International number, operator requested	7-15D	XXXX	101XXXX+01+(7-15)D	IN	PUBA	NA
Legend IN - International NA - National NIL - Not present PUBA - Carrier operator PUBP - Public operator						

For National Direct Dial (where CDN=NA & TNS=UNK & OSA=UNK) and National Carrier Direct Dial (where CDN=NA & TNS=NA & OSA=UNK) SCP responses, the conversion of the 10D number into a format for dialing is based on existing translation datafill in tables LCASCRCN and HNPACONT. The resulting digits are in 7D, 1+7D, 10D, or 1+10D format, being consistent with the dialing plan of the originator.

When carrier ID is returned in the response, carrier access digits 10XXX or 101XXXX are prefixed before the converted digits.

The operating telephone company (OTC) carrier is treated as a valid carrier ID and carrier access digits are prefixed.

For the Local Exchange (LEC) carrier (carrier ID = 0110), no carrier access digits are prefixed. In this case, digit conversion is carried out as if no carrier ID were present.

The National Number conversion process is based on the following logic:

1. Table HNPACONT datafill is used to determine when the 10D number should be converted to 7D or 10D. The conversion produces 7D (by removing the NPA) when one of the following conditions are met:
 - Indexing HNPACODE with the 10D called number results in VCT HNPI.
 - Originator's NPA is equal to the NPA of the 10D called number, and the HNPACODE subtable contains no entry for the NPA of the called number.
2. Table LCASCRCN datafill is used to determine when a call is local or toll.
 - When NPA and NXX of the called number are found in LCASCRCN then the call is considered as local.
 - When NPA is not found but the NPA of the originator is equal to the NPA of the called number, a check occurs to see when the called NXX is datafilled in subtable LCASCR. When this event occurs, the call is local. This check handles the case where a 7D local dialing plan exists within an NPA, and the NPA is not datafilled in LCASCRCN.
 - Otherwise, it is toll.
3. Using PFXFOR10 of table LCASCRCN and the local/toll result from step 2, the called number is modified as follows:

Table 21 summarizes the digits used in translation after conversion when the triggering agent is a public line and for calltypes where (CDN=NA) or (CDN=NA & TNS=NA).

Table 21 Translation digits after conversion - triggering agent is a public line

Digits after step 1	Local or Toll	PFX FOR10	Originator's NPA = Called NPA	Result when no Carrier ID is present or Carrier ID=LEC carrier	Result when 0XXX Carrier ID is present	Result when XXXX Carrier ID is present
7D	Local	Y	Not Applicable	7D	10XXX+(7)D	101XXXX+(7)D
7D	Local	N	Not Applicable	7D	10XXX+(7)D	101XXXX+(7)D
7D	Toll	Y	Not Applicable	7D	10XXX+(7)D	101XXXX+(7)D
7D	Toll	N	Not Applicable	1+7D	10XXX+1+(7)D	101XXXX+1+(7)D
10D	Local	Y	N	1+10D	10XXX+1+(10)D	101XXXX+1+(10)D
10D	Local	Y	Y	7D	10XXX+7D	101XXXX+7D
10D	Local	N	Not Applicable	10D	10XXX+(10)D	101XXXX+(10)D
10D	Toll	Y	Not Applicable	1+10D	10XXX+1+(10)D	101XXXX+1+(10)D
10D	Toll	N	Not Applicable	1+10D	10XXX+1+(10)D	101XXXX+1+(10)D

3.2.2 Optional removal of NPA where 1+10-digit dialing is mandatory

Where CDN=NA, AIN Response Translation Simplification removes the NPA of the called number if all of the following conditions are true:

- SOC AIN00026 is ON.
- The call is local.
- Option PFXFOR10 is TRUE in Table LCASRCN or Table LCAINFO.
- The NPA of the SCP number is the same as the originator's NPA.

Removal of NPA represents a problem in areas where 1+10-digit dialing is mandatory for toll and local calls. The removal of NPA results in a 7-digit number, and the call is sent to treatment. This is an undesirable effect.

Removal of NPA is made optional by the addition of field STRIPNPA in Table LCASRCN and Table LCAINFO. When STRIPNPA is set to N, the NPA

remains. When it is set to 'Y', the NPA is removed. This is illustrated in Table 22, and the applicable conditions are shown in bold:

Table 22 Digit Conversion with STRIPNPA

Digits after Step 1 (HNPA CONT)	Local/ Toll	PFXFOR10	Originator's NPA = Called NPA	STRIPNPA	Result
7D	Local	Y	Not Applicable	Not Applicable	7D
7D	Local	N	Not Applicable	Not Applicable	7D
7D	Toll	Y	Not Applicable	Not Applicable	7D
7D	Toll	N	Not Applicable	Not Applicable	1+7D
10D	Local	Y	N	Not Applicable	1+10D
10D	Local	Y	Y	N	10D
10D	Local	Y	Y	Y	7D
10D	Local	N	Not Applicable	Not Applicable	10D
10D	Toll	Y	Not Applicable	Not Applicable	1+10D
10D	Toll	N	Not Applicable	Not Applicable	1+10D

3.2.3 Triggering agents of type local or FGC trunk

For incoming local or FGC trunks, assume that the translations of the originating trunk are based on 10D translation.

Note: When the response results from a trigger that has overriding line attributes for post-query processing datafiled (LARP or PODPATTR), the conversion rules in Table 23 do not apply. Instead, the feature uses the conversion rules for public lines.

The operating telephone company (OTC) carrier is treated as a valid carrier ID and digit conversion is carried out as specified in Table 23.

The Local Exchange (LEC) carrier (carrier ID = 0110) is handled similar to the case when no carrier ID is specified in the response.

Table 23 summarizes the digits used in translation after conversion by the Response Translations Simplification feature when the triggering agent is a local or FGC trunk.

Table 23 Translation digits after simplification - local and FGC trunk triggering agents

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits used in translations	CDN	OSA	TNS
National number	10D	Not present	10D	NA	NIL	NIL
International number	7-15D	Not present	011+(7-15)D	IN	NIL	NIL
No address present, operator requested	0D	Not present	0-	NIL	PUBP	NIL
National number, operator requested	10D	Not present	0+(10)D	NA	PUBP	NIL
International number, operator requested	7-15D	Not present	01+(7-15)D	IN	PUBP	NIL
National number	10D	0110	10D	NA	NIL	NA
National number	10D	0XXX	0XXX+10D	NA	NIL	NA
International number	7-15D	0XXX	0XXX+011+(7-15)D	IN	NIL	NA
No address present, operator requested	0D	0XXX	0XXX+00	NIL	PUBA	NA
National number, operator requested	10D	0XXX	0XXX+0+10D	NA	PUBA	NA
International number, operator requested	7-15D	0XXX	0XXX+0+(7-15)D	IN	PUBA	NA
National number	10D	XXXX	XXXX+10D	NA	NIL	NA
International number	7-15D	XXXX	XXXX+011+(7-15)D	IN	NIL	NA
No address present, operator requested	0D	XXXX	XXXX00-	NIL	PUBA	NA
National number, operator requested	10D	XXXX	XXXX+0+(10)D	NA	PUBA	NA
International number, operator requested	7-15D	XXXX	XXXX+01+(7-15)D	IN	PUBA	NA

Table 23 Translation digits after simplification - local and FGC trunk triggering agents (Contin-

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits used in translations	CDN	OSA	TNS
Legend IN - International NA - National NIL - Not present PUBA - Carrier operator PUBP - Public operator						

3.2.4 Triggering agents of type FGD trunks

For triggering FGD trunks, conversion depends on whether a carrier ID is present in the response. When no carrier ID is present, the feature converts the called digits as specified in Table 26. When a carrier ID is present, a 0ZZ or 1NX code must be determined in order to reuse the FGD translations that are based on 0ZZ+(X)XXX or 1NX+(X)XXX. There are four options NSC0ZZ, NSC1NX, NSCOP0ZZ, and NSCOP1NX defined in tables OCCSRV and NSCDEFS. Table OCCSRV, indexed by carrier ID, provides these options on a per carrier basis. Whereas, table NSCDEFS provides these options as defaults. These options are used to datafill the 0ZZ or 1NX digits that are used by this feature to prefix in front of the carrier ID returned in the response.

When the carrier specified in the response has the 0ZZ/1NX option datafilled in table OCCSRV, digit conversion uses that information; otherwise, the 0ZZ/1NX option is taken from table NSCDEFS. In addition, the conversion depends on whether the incoming FGD trunk is based on a 3-digit CIC or a 4-digit CIC.

The operating telephone company (OTC) carrier is treated as a valid carrier ID and digit conversion is carried out as specified in Table 889.

The Local Exchange (LEC) carrier (carrier ID = 0110) is handled similar to the case when no carrier ID is specified in the response.

3.2.4.1 Table OCCSRV

Table OCCSRV was introduced in NA09 to enhance the FGD digit conversion component of the AIN Response Translations Simplification feature. This table provides the capability to define 0ZZ/1NX codes on a per calltype basis for each carrier.

The key for table OCCSRV is carrier name. Four options can be datafilled for a given carrier:

- Option NSC0ZZ is created to specify the 0ZZ digits for National calls.
- Option NSCOP0ZZ is created to specify the 0ZZ digits for National Operator assist calls.

- Option NSC1NX is created to specify the 1NX digits for International calls.
- Option NSCOP1NX is created to specify the 1NX digits for International Operator assist calls.

3.2.4.2 Recommended datafill for table OCCSRV to support simplification

Table 24 provides an example of table OCCSRV datafill.

Note: NSC0ZZ, NSCOP0ZZ, NSC1NX and NSCOP1NX must be datafilled before activation of response translations simplification for trunks using FGD signalling.

Table 24 Example of table OCCSRV datafill

KEY	OPTIONS			
ATT	(NSC0ZZ 088)	(NSCOP0ZZ 044)	(NSC1NX 155)	(NSCOP1NX 166) \$

3.2.4.3 Table NSCDEFS

The following options in Table NSCDEFS are used by the AIN Response Translations Simplification feature to determine the 0ZZ/1NX codes, when the options are not datafilled for the carrier ID in table OCCSRV:

- NSCOP0ZZ - to specify the 0ZZ digits for National Operator assist calls.
- NSCOP1NX - to specify the 1NX digits for International Operator assist calls.
- NSC0ZZ - to specify the 0ZZ digits for National calls.
- NSC1NX- to specify the 1NX digits for International calls.

3.2.4.4 Recommended datafill for table NSCDEFS

Table 25 provides an example of table NSCDEFS datafill.

Note: NSC0ZZ, NSCOP0ZZ, NSC1NX and NSCOP1NX must be datafilled before activation of response translations simplification for trunks using FGD signalling.

Table 25 Example of table NSCDEFS datafill

NSC CODE	TIME OUT	OPTIONS			
AIN	3	(NSC0ZZ 077)	(NSCOP0ZZ 033)	(NSC1NX 144)	(NSCOP1NX 177) \$

3.2.4.5 Digits used in translation when triggering agents are FGD trunks

Table 26 summarizes the digits used in translation after digit conversion by the AIN Response Translations Simplification feature when the originating agent is an FGD trunk based on a 4-digit CIC. The four options NSC0ZZ, NSC1NX, NSCOP0ZZ, and NSCOP1NX are the ones defined in Table 24 on page 110.

Note: When the response results from a trigger that has overriding line attributes for post-query processing datafilled (LARP or PODPATTR), the conversion rules in Table 26 do not apply. Instead, the feature uses the conversion rules for public lines.

Table 26 Digits produced for FGD trunk triggering agents based on 4-digit CIC

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits used in translations	CDN	OSA	TNS
National number	10D	0110	1+10D	NA	NIL	NA
National number	10D	0XXX	0880XXX+10D	NA	NIL	NA
International number	7-15D	0XXX	1550XXX+(7-15)D	IN	NIL	NA
No address present, operator requested	0D	0XXX	0440XXX	NIL	PUBA	NA
National number, operator requested	10D	0XXX	0440XXX+(10)D	NA	PUBA	NA
International number, operator requested	7-15D	0XXX	1660XXX+(7-15)D	IN	PUBA	NA
National number	10D	XXXX	088XXXX+10D	NA	NIL	NA
International number	7-15D	XXXX	155XXXX+(7-15)D	IN	NIL	NA
No address present, operator requested	0D	XXXX	044XXXX	NIL	PUBA	NA
National number, operator requested	10D	XXXX	044XXXX+(10)D	NA	PUBA	NA
International number, operator requested	7-15D	XXXX	166XXXX+(7-15)D	IN	PUBA	NA
Legend IN -- International NA - National NIL -Not present PUBA - Carrier operator PUBP - Public operator						

Table 27 summarizes the digits used in translation after conversion by the Response Translations Simplification feature when the originating agent is an FGD trunk and no carrier ID is specified in the response.

Table 27 Digits produced for FGD trunk agents - no carrier specified in the response

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits used in translations	CDN	OSA	TNS
National number	10D	Not present	1+10D	NA	NIL	NIL
International number	7-15D	Not present	011+(7-15)D	IN	NIL	NIL
No address present, operator requested	0D	Not present	0-	NIL	PUBP	NIL
National number, operator requested	10D	Not present	0+(10)D	NA	PUBP	NIL
International number, operator requested	7-15D	Not present	01+(7-15)D	IN	PUBP	NIL
Legend IN -- International NA - National NIL -Not present PUBA - Carrier operator PUBP - Public operator						

Note: For these calltypes it is recommended that a exception pretranslator be defined. Mapping tuples with the PREFIX and XLA selectors in table PXLAMAP must be added for the above calltypes in order to direct response translations to the exception pretranslator.

3.2.5 Table STDPRTCT

The digit streams produced by the AIN Response Translations Simplification feature cannot reuse the originator's translation datafill in all the cases. New pretranslators must be defined to handle the exceptions. The following subsections describe the exceptions for the different types of triggering agents involved with the Response Translations Simplification feature.

3.2.5.1 Triggering agents of type public lines

For triggering agents of type public lines, the digit streams produced by the AIN Response Translations Simplification feature for the different routing characteristics can directly reuse the originator's pretranslator in most cases. In these cases no mapping tuples are required for the triggering public lines in table PXLAMAP.

3.2.5.2 Triggering agents of type local or FGC trunks

For incoming local or FGC trunks, it is assumed that the originating trunk's translations are based on 10D translation. When 7D translation is used, a new pretranslator that handles 10D translation for public trunks must be defined. This new pretranslator is then associated with the different call types according to the originator's trunk pretranslator in table PXLAMAP.

In the case where 10D translation is used, the datafill required to support all of the call types defined in Table 23 (except National Number without Carrier ID) usually do not exist in the translation datafill for local trunks. When the National Number without Carrier ID call type can reuse the trunk translation datafill, then all other call types can be datafilled in a single exception pretranslator. In this case, table PXLAMAP would have tuples corresponding to the RCNAMES (other than NACALL) with PREFIX and XLA selectors to direct response translations to use the exception pretranslator.

The tuples described in Table 28 are used to handle the exceptions for local or FGC trunk originating agents when the Response Translations Simplification feature is active.

Table 28 Recommended PXLAMAP datafill for local or FGC trunks

NACAR	PTRK	(XLA EXP1) \$	PREFIX
INCALL	PTRK	(XLA EXP1) \$	PREFIX
INCAR	PTRK	(XLA EXP1) \$	PREFIX
Note: Assume PTRK is the pretranslator for a public trunk.			

Table 29 on page 113 defines the new pretranslator that handles exceptions produced by the Response Translations Simplification feature when the originating agent is a local or FGC trunk.

Table 29 New pretranslator for exceptions for local or FGC trunks

EXP1	(1) (1234) ... Pretranslator to handle exception cases produced by Response Translations Simplification feature
	Subtable STDPRT
	448 448 ET DD 3 MCI Y OFRT 900 3 3
	... other carriers ... (similar datafill as pretranslators for carriers)

When the National Number without Carrier ID call type cannot reuse the trunk translation datafill, then two exception pretranslators must be datafilled for:

- non-carrier call types
- carrier call types

This is because the carrier digit pattern XXX cannot exist with 10D in the same pretranslator. Datafilling exception pretranslators allows grouping of local or FGC trunks to use one set of response translations datafill.

3.2.5.3 Triggering agents of type FGD trunks

When a carrier ID is returned from the SCP response, the AIN Response Translations Simplification feature needs to determine a 0ZZ or 1NX code in order to reuse the FGD translation datafill in table STDPRTCT.

Based on the calltype of the response National, National Operator, International, International Operator the corresponding 0ZZ/1NX option is searched for. Table OCCSRV is checked first to see when a NSC/1NX option is datafilled for the calltype for the carrier ID. When a tuple is found for the carrier ID, and it contains the desired 0ZZ/1NX option for the calltype, the 0ZZ/1NX digits specified in the option are used by the feature.

When nothing is found in table OCCSRV, the 0ZZ/1NX digits are obtained from table NSCDEFS.

Table 30 on page 114 describes an example of datafill in the pretranslator of the triggering trunk that are reused for response translations with the prefixed 0ZZ/1NX digits.

Table 30 Additional datafill for new options NSCOP0ZZ and NSCOP1NX in table NSCDEFS

PTRK	(1) (1234) ... Pretranslator for tandem or NAP call
	Subtable STDPRT
	088488 088488 ET DD 6 MCI Y OFRT 900 6 6
	... other carriers ...
	044448 044448 ET OA MCI Y OFRT 900 6 6
	... other carriers ...
	166448 166488 ET IN MCI OFRT 901 6 6
	... other carriers ...
	2 9 N DD 1 NA
	411 411 T NP 0 OFRT 1 3 3 NONE
	... other N11 ...

Responses without Carrier ID or with LEC carrier cannot be translated by the same translator containing FGD 0ZZXXX or 1NXXXX type translation datafill. 1+10D, 0+10D, or 011+(7-15)D is likely to conflict with 0ZZXXX and 1NXXXX datafill. Use an exception pretranslator for translation of responses with no Carrier ID or with LEC carrier. Because the digits produced

are in the same format as the digits produced when triggering agent is a public line, the exception pretranslator is similar to a line pretranslator.

3.2.6 PODPATTR Interactions with response translation simplification

When a line or trunk agent encounters an SDS trigger with a corresponding entry in table PODPATTR and the SCP returns an Analyze_Route response with an InterLATA toll CalledPartyID and no carrier is present, the trigger's PIC (datafilled in PODPATTR) is used to route the call. When the trigger has no PIC, the office default carrier is used. In the previous scenarios, digit conversion is performed before a carrier is determined by translations. After a carrier has been determined, the original RCNAME along with the trigger's pretranslator from PODPATTR is used to index table PXLAMAP to derive a new pretranslator. When a tuple is not found, the trigger's pretranslator is used. Since digit conversion is performed before a carrier is determined, the result of digit conversion is 1+10D in accordance with requirements for response translation simplification.

3.3 Sample TRAVERs for the generic SSP

This section contains TRAVER examples of AIN response processing with various call types when the Response Translations Simplification feature is activated.

3.3.1 Additional data required for AIN response processing in TRAVERs

Table RCNAME and table RTECHAR are datafilled as specified in the recommended datafill to support AIN response processing in a generic SSP. Figure 23 on page 115 shows the entries for table RCNAME.

Figure 23 Table RCNAME

TABLE RCNAME
. IXCDDNA
. IXCDDIN
. IXCOANA
. IXCOAIN
. LECNA
. LECIN
. LECO
. LECOANA
. LECOAIN
. SUBCAROP
. IXCOA

For the generic SSP, Figure 24 shows the entries for table RTECHAR.

Figure 24 Table RTECHAR

```

TABLE RTECHAR
IXCDDNA (CDN NA (TNS NA) $) (BC 3_1KHZ (CDN NA) (TNS NA) $) $
IXCDDIN (CDN IN (TNS NA) $) (BC 3_1KHZ (CDN IN) (TNS NA) $) $
IXCOANA (OSA PUBA (CDN NA) (TNS NA) $)
      (BC 3_1KHZ (OSA PUBA) (CDN NA) (TNS NA) $) $
IXCOAIN (OSA PUBA (CDN IN) (TNS NA) $)
      (BC 3_1KHZ (OSA PUBA) (CDN IN) (TNS NA) $) $
LECNA (CDN NA $) (BC 3_1KHZ (CDN NA) $) $
LECIN (CDN IN $) (BC 3_1KHZ (CDN IN) $) $
LECOA (OSA PUBP $) (BC 3_1KHZ (OSA PUBP) $) $
LECOANA (OSA PUBP (CDN NA) $) (BC 3_1KHZ (OSA PUBP) (CDN NA) $) $
LECOAIN (OSA PUBP (CDN IN) $) (BC 3_1KHZ (OSA PUBP) (CDN IN) $) $
IXCOA (OSA PUBA (TNS NA) $) (BC 3_1KHZ (OSA PUBA) (TNS NA) $) $

```

Figure 25 shows the entries for table PXLAMAP for triggering agents that require exception pretranslators. The triggering agents that do not require exception pretranslators, do not require any datafill in table PXLAMAP.

Figure 25 Table PXLAMAP

```

TABLE PXLAMAP
. IXCDDNA PUB ( XLA PUBXCAR) ( PREFIX ) $
. LECIN PUB ( XLA PBXNOCAR) ( PREFIX ) $
. LECOAIN PUB ( XLA PBXNOCAR) ( PREFIX ) $
. IXCOAIN PUB ( XLA PUBXCAR) ( PREFIX ) $
. IXCOANA PUB ( XLA PUBXCAR) ( PREFIX ) $
. IXCOA PUB ( XLA PUBXCAR) ( PREFIX ) $

```

Figure 26 shows the new pretranslator used in the TRAVER examples described in this chapter.

Figure 26 Table STDPRTCT

```

TABLE STDPRTCT
PUBXCAR ( 1) ( 0) 1
. SUBTABLE STDPRT
. 52204 52209 ET NP 4 SPR Y OFRT 898 5 24
.
PBXNOCAR ( 1) ( 0) 2
. SUBTABLE STDPRT
. 14 179776 N DD 1 NA
.

```

Figure 27 shows the entries for table OCCSRV.

Figure 27 Table OCCSRV

```
TABLE OCCSRV
ATT (NSC0ZZ 088) (NSCOP0ZZ 099) (NSC1NX 144) (NSC1NX 166)
```

Figure 28 shows the entries for table NSCDEFS.

Figure 28 Table NSCDEFS

```
TABLE NSCDEFS
AIN 3 (NSC0ZZ 077) (NSCOP0ZZ 033) (NSC1NX 144) (NSC1NX 177)
```

3.3.2 National calls

This section discusses the following four national call scenarios:

- National call where conversion produces 10D number
- National call where conversion produces 1+10D number
- National call where conversion produces 7D number
- National call where conversion produces 1+7D number

3.3.2.1 National call where conversion produces 10D number

The command line assumes that the originator is a 1FR line 6136212112 and the CalledPartyID = National Number 4164801234. TRAVER 29 provides a sample TRAVER output for a national call, where a conversion produces a 10D number.

Figure 29 Sample TRAVER output for a national call (convert to 10D number)

```
>traver l 6136212112 n cdn na 6137223211 ainres r02 ar 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
```

Figure 29 Sample TRAVER output for a national call (convert to 10D number) (Continued)

```

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.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 6137223211
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
. 722 722 DN 613 722
TABLE TOFCNAME
613 722 $
TABLE DNINV
613 722 3211 L HOST 01 0 00 01
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
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. 722 722
TABLE PFXTREAT

```

Figure 29 Sample TRAVER output for a national call (convert to 10D number) (Continued)

```

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                6137223211          ST

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

3.3.2.2 National call where conversion produces 1+10D numbers

The command line assumes that the originator is a 1FR line 6136212112 and the CalledPartyID = National Number 4164801234. TRAVER 30 provides a sample output for a national call, where a conversion produces 1+10D number.

Figure 30 Sample TRAVER output for a national call (convert to 1+10D number)

```

>traver l 6136212112 n cdn na 4164801234 ainres r02 ar 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

```

Figure 30 Sample TRAVER output for a national call (convert to 1+10D number) (Continued)

```

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.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 14164801234
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.
. 14 16 N DD 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
. 416 416 HNPA 0
. 480 480 LRTE 480
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 480 S D ISUPTAC40_30
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
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 LENFEAT
HOST 01 0 10 10 S PIC PIC ITT Y
TABLE LATAOLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL

```

Figure 30 Sample TRAVER output for a national call (convert to 1+10D number) (Continued)

```

. 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 ISUPTAC40_30          4164801234          ST

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

3.3.2.3 National call where conversion produces 7D number

The command line assumes that the originator is a 1FR line 6136212112 and the CalledPartyID = National Number 6136212119. TRAVER 31 provides a sample TRAVER output for a national call, where a conversion produces a 7D number.

Figure 31 Sample TRAVER output for a national call (convert to 7D number)

```

>traver 1 6136212112 n cdn na 6136212119 ainres r02 ar 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

```

Figure 31 Sample TRAVER output for a national call (convert to 7D number) (Continued)

```

TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 6212119
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 ( 315) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 621 621 DN 613 621
TABLE TOFCNAME
613 621 $
TABLE DNINV
613 621 2119 P HOST 01 0 19 19 R4
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
613 621 2119
(PUBLIC (NONUNIQUE ) $)$ $
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 FNPA7DIG
TUPLE NOT FOUND
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.

```


Figure 31 Sample TRAVER output for a national call (convert to 7D number) (Continued)

```
. 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                6136212119                ST

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

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

3.3.2.4 National call where conversion produces 1+7D number

The command line assumes that the originator is a 1FR line 6136212112 and the CalledPartyID = National Number 6134257320. TRAVER 32 provides a sample TRAVER output for a national call, where a conversion results in a 1+7D number.

Figure 32 Sample TRAVER output for a national call (convert to 1+7D number)

```
>traver 1 6136212112 n cdn na 6134257320 ainres r02 ar 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
```

Figure 32 Sample TRAVER output for a national call (convert to 1+7D number) (Continued)

```

AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.     Resulting digits are: 14257320
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.
. 14 16 N DD 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
. 425 425 DN 613 425
TABLE TOFCNAME
613 425 $
TABLE DNINV
613 425 7320 L HOST 01 0 09 09
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 ( 17) OPTL N N
. SUBTABLE LCASCR
. TUPLE NOT FOUND.  DEFAULT IS NON-LOCAL
TABLE PFXTREAT
OPTL DD N DD UNDT
TABLE CLSVSCRC
TABLE LENFEAT
HOST 01 0 10 10 S PIC PIC ITT Y
TABLE LATAOLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
TABLE FNPA7DIG
TUPLE NOT FOUND
TABLE TRIGGRP

```

Figure 32 Sample TRAVER output for a national call (convert to 1+7D number) (Continued)

```

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                      6134257320          ST

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

3.3.3 National carrier call

The command line assumes that the originator is a 1FR line 6136212112, the CalledPartyID = National Number 4162581234, and the PrimaryCarrier = 0488. TRAVER 33 provides a sample TRAVER output for a national carrier call.

Figure 33 Sample TRAVER output for a national carrier call

```

>traver 1 6136212112 n cdn na 4162581234 tns na cic 0488 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 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

```

Figure 33 Sample TRAVER output for a national carrier call (Continued)

```

TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 1048814162581234
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 OFRTMAP
.   . Tuple not found. Default to old index.
.   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 PXLAMAP
. Tuple not found. Default to old pretranslator name.
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 ( 315) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 416 416 HNPA 0
. 258 258 LRTE 719
. SUBTABLE RTEMAP
.   Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 719 N D AIN_DUMMY_TRK 0 $ Y

```

Figure 33 Sample TRAVER output for a national carrier call (Continued)

```

.      AFR ROCKINFO
.  EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNP results are used.
TABLE LCASCRCN
613 L613 ( 17) OPTL N 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 LATAOLA
LATA1 416258 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 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 OFRTMAP
.  Tuple not found. Default to old index.
TABLE OFRT
  907 CND EA INTNL SK 2
      N D ISUPITEAOG 0 D077 N
      CND ALWAYS SK 1
      N D ISUPITEAOG 0 D123 N
TABLE OFRTMAP
.  Tuple not found. Default to old index.
EXIT TABLE OFRT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 ISUPITEAOG          D0774162581234      ST

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

3.3.4 International call

The command line assumes that the originator is a 1FR line 6136212112 and the CalledPartyID = National Number 8527146926. TRAVER 34 provides a sample TRAVER output for an international call.

Figure 34 Sample TRAVER output for an international call

```
>traver 1 6136212112 n cdn in 8527146926 ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. INTPUB (CDN IN $) (CDN IN (TNS NA)$)$
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 TSPTS N $
TABLE RATEAREA
L613_NILLA_4 L613 NIL NILLATA $
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.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 0118527146926
TABLE STDPRCT
P621 ( 1) ( 0) 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 HPCPATN
TUPLE NOT FOUND
TABLE CCTR
852 T 692 9 11 T OFRT 64 Y $
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
64 N D TOPOGNY 3 N N
N D TERMBX01 3 N N
```

Figure 34 Sample TRAVER output for an international call (Continued)

```

EXIT TABLE OFRT
TABLE LENFEAT
HOST 01 0 10 10 S PIC PIC ITT Y
LATA IS NIL, THEREFORE NOT AN EQUAL ACCESS CALL
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 TOPOGNY                7146926          ST
2 TERMBX01               7146926          ST

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

3.3.5 International operator

The command line assumes that the originator is a 1FR line 6136212112 and the CalledPartyID=International, Operator Requested 8527146926. TRAVER 35 provides a sample TRAVER output for an international operator.

Figure 35 Sample TRAVER output for an international operator

```

>traver l 6136212112 n cdn in 8527146926 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 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 35 Sample TRAVER output for an international operator (Continued)

```

L613_NILLA_4 L613 NIL NILLATA $
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.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 018527146926
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.
. 018 018 T OA 0 OFRT 64 1 16 NONE
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. .   64 N D TOPOGNY 3 N N
. .   N D TERMBX01 3 N N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE LENFEAT
HOST 01 0 10 10 S PIC PIC ITT Y
LATA IS NIL, THEREFORE NOT AN EQUAL ACCESS CALL
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) ( ESCOA ) ( 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

```


Figure 35 Sample TRAVER output for an international operator (Continued)

```

1 TOPOGNY          527146926          ST
2 TERMBX01         527146926          ST

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

3.3.6 International carrier operator

The command line assumes that the originator is a 1FR line 6136212112, the CalledPartyID = International, Operator Requested 8527146926, and the PrimaryCarrier = 5220. TRAVER 36 provides a sample TRAVER output for an international carrier operator.

Figure 36 Sample TRAVER output for an international carrier operator

```

>traver 1 6136212112 n cdn in 8527146926 tns na cic 5220 osa puba ainres
r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. OSAAPUB (OSA PUBA (TNS NA)$) (OSA PUBA (CDN NA) (TNS NA)$) (OSA PUBA
(CDN IN) (TNS NA)$) ( BC 3_1KHZ (OSA PUBA) (TNS NA)$) ( BC 3
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.
. NOTE: ISDN Digit Conversion has been performed:
. Resulting digits are: 1015220018527146926
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE

```

Figure 36 Sample TRAVER output for an international carrier operator (Continued)

```

BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 1015 1015 F 0 STUTTER_DIALTONE EAP1
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
EAP1 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 1015220 1015220 EA DD 7 P PEA6 GTE Y OFRT 898 5 20 N
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 898 CND EA INTNL SK 2
. . N D OGEAITT 6 N N
. . CND ALWAYS SK 1
. . N D OGEAITT 15 D188 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
PEA6 ( 1) ( 0) 2
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 018 019 EA DD 2 T IN ITT N
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE CCTR
852 T 692 9 11 T OFRT 64 Y $
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
64 N D TOPOGNY 3 N N
N D TERMBX01 3 N N
EXIT TABLE OFRT
EA:Local override does not apply to this call.

```

Figure 36 Sample TRAVER output for an international carrier operator (Continued)

```

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 Y
TABLE EASAC
TUPLE NOT FOUND
OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP
DEFINED
Using Equal Access (EA) route   OFRT   898 from Pretranslation
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
898 CND EA INTNL SK 2
    N D OGEAITT 6 N N
    CND ALWAYS SK 1
    N D OGEAITT 15 D188 N
TABLE OFRTMAP
. Tuple not found. Default to old index.
EXIT TABLE OFRT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 OGEAITT                D188                ST

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

3.3.7 National carrier operator

The command line assumes that the originator is a 1FR line 6136212112, the CalledPartyID = National, Operator Requested 6134257320, and the PrimaryCarrier = 0488. TRAVER 37 provides a sample TRAVER output for a national carrier operator.

Figure 37 Sample TRAVER output for a national carrier operator

```

>traver 1 6136212112 n cdn na 4162581234 tns na cic 0488 osa puba ainres
r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. OSAAPUB (OSA PUBA (TNS NA)$) (OSA PUBA (CDN NA) (TNS NA)$) (OSA PUBA
(CDN IN) (TNS NA)$) ( BC 3_1KHZ (OSA PUBA) (TNS NA)$) ( BC 3

```

Figure 37 Sample TRAVER output for a national carrier operator (Continued)

```

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.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 1048804162581234
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 OFRTMAP
.   . Tuple not found. Default to old index.
.   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 PXLAMAP
. Tuple not found. Default to old pretranslator name.
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.
. 04 05 EA OA 1 T NA ITT N
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:   NONE OVRNONE   N

```

Figure 37 Sample TRAVER output for a national carrier operator (Continued)

```

TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 315) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 416 416 HNPA 0
. 258 258 LRTE 719
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 719 N D AIN_DUMMY_TRK 0 $ Y
. AFR ROCKINFO
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 17) OPTL N N
. SUBTABLE LCASCR
. TUPLE NOT FOUND. DEFAULT IS NON-LOCAL
TABLE PFXTREAT
OPTL OA N OA UNDT
TABLE CLSVSCRC
613 FR01 OA 2 N NONE ( 1)
. SUBTABLE CLSVSCR
. 416 416 T OFRT 609
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
609 N D TSPSTO 0 N N
EXIT TABLE OFRT
EA:Local override does not apply to this call.
TABLE LATAOLA
LATA1 416258 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 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 OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
907 CND EA INTNL SK 2
N D ISUPITEAOG 0 D077 N
CND ALWAYS SK 1
N D ISUPITEAOG 0 D123 N

```

Figure 37 Sample TRAVER output for a national carrier operator (Continued)

```

TABLE OFRTMAP
. Tuple not found. Default to old index.
EXIT TABLE OFRT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 ISUPITEAOG          D0774162581234      ST

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

3.3.8 Carrier operator

The command line assumes that the originator is a 1FR line 6136212112, the CalledPartyID = no address present, Operator Requested, and the PrimaryCarrier = 0488. TRAVER 38 provides a sample TRAVER output for a carrier operator response.

Figure 38 Sample TRAVER output for a carrier operator response

```

>traver 1 6136212112 n tns na cic 0488 osa puba ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. OSAAPUB (OSA PUBA (TNS NA)$) (OSA PUBA (CDN NA) (TNS NA)$) (OSA PUBA
(CDN IN) (TNS NA)$) ( BC 3_1KHZ (OSA PUBA) (TNS NA)$) ( BC 3
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

```

Figure 38 Sample TRAVER output for a carrier operator response (Continued)

```

. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 104880
TABLE STDPRCT
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 OFRTMAP
. . . Tuple not found. Default to old index.
. . 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 HPCPATN
TUPLE NOT FOUND
CARRIER OPERATOR CALL. LOOKING UP 10XXX/101XXXX-00
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRCT
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 OFRTMAP
. . . Tuple not found. Default to old index.
. . 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
TABLE PXLAMAP
. . Tuple not found. Default to old pretranslator name.
. TABLE STDPRCT
. PEA1 ( 1) ( 0) 2
. . SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.

```

Figure 38 Sample TRAVER output for a carrier operator response (Continued)

```

. . 00 00 EA OA 1 T NO ITT Y OFRT 879 2 2 N
. . . TABLE OFRTMAP
. . . . Tuple not found. Default to old index.
. . . TABLE OFRT
. . . 879 N D TOPSEAOSSOG 15 D040 N
. . . EXIT TABLE OFRT
USING EQUAL ACCESS (EA) ROUTE OFRT 879 FROM PRETRANSLATION
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
879 N D TOPSEAOSSOG 15 D040 N
TABLE OFRTMAP
. Tuple not found. Default to old index.
EXIT TABLE OFRT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 TOPSEAOSSOG          N          STP

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

3.3.9 Carrier cut-through

TRAVER 39 provides a sample TRAVER output that illustrates a carrier cut-through response. The command line assumes that the CalledPartyID = No address present, cut-through call to carrier, and the PrimaryCarrier = 488.

Figure 39 Sample TRAVER output for a carrier cut-through

```

>traver l 6136211311 n tns na cic 488 noa #75 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)$) (CDN IN (TNS NA)$) ( BC 3_1KHZ (CDN NA) (TNS
NA)$) ( BC 3_1KHZ (CDN IN) (TNS NA)$) (TNS NA
TABLE LINEATTR
300 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_EAP1_60 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_EAP1_60 FR01 613 EAP1 TSPS N $ $
TABLE RATEAREA

```


Figure 39 Sample TRAVER output for a carrier cut-through (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 TIID
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 10488
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.
. 10488 10488 EA DD 5 P PEA1 ITT Y OFRT 907 5 20 N
.   TABLE OFRTMAP
.   . Tuple not found. Default to old index.
.   TABLE OFRT
.   . 907 CND EA INTNL SK 2
.   .   N D ISUPITEAOG 15 D077 N
.   .   CND ALWAYS SK 1
.   .   N D ISUPITEAOG 15 D179 N
.   . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE OCCINFO
ITT 0488 EAP Y Y Y Y Y N N Y Y Y Y LONG 14 FGRPC N N N N N N N N N N N Y N
Y
OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP
DEFINED
+++ TRAVER: SUCCESSFUL CALL TRACE +++
DIGIT TRANSLATION ROUTES
1 ISUPITEAOG          D077          ST
TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT
+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

3.3.10 National carrier call with trunk originator

The command line assumes that the originator is ISUPITIC and the CalledPartyID = National Number 4166251242. TRAVER 40 provides a sample TRAVER output for a national carrier call with a trunk originator.

Figure 40 Sample TRAVER output for a national carrier call with a trunk originator

```
>traver tr ISUPITIC n cdn na 4166251242 tns na unk 5220 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 PUBXCAR) ( PREFIX )$
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 52204166251242
TABLE STDPRCT
PUBXCAR ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 52204 52209 ET NP 4 GTE Y OFRT 898 5 24
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 898 CND EA INTNL SK 2
. .   N D OGEAITT 6 N N
. .   CND ALWAYS SK 1
. .   N D OGEAITT 15 D188 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATN
TUPLE NOT FOUND

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 OGEAITT           1242           ST
```

Figure 40 Sample TRAVER output for a national carrier call with a trunk originator (Continued)

```
TREATMENT ROUTES.  TREATMENT IS: GNCT
1 T120

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

3.3.11 National call with trunk originator

The command line assumes that the originator is ISUPITIC and the CalledPartyID = National Number 6136212119. TRAVER 41 provides a sample TRAVER output for a national call with a trunk originator.

Figure 41 Sample TRAVER output for a national call with a trunk originator

```
>traver tr ISUPITIC n cdn na 6136212119 ainres r02 ar 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 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
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
. Resulting digits are: 6136212119
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.
. 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
```

Figure 41 Sample TRAVER output for a national call with a trunk originator (Continued)

```

TABLE TOFCNAME
613 621 $
TABLE DNINV
613 621 2119 P HOST 01 0 19 19 R4
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
613 621 2119
(PUBLIC (NONUNIQUE ) $)$ $
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 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                6136212119                ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 T120

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

3.3.12 National carrier call with 4 CIC based FGD trunk originator

The command line assumes that the originator is a public trunk ISUPITIC, the CalledPartyID = National Number 4166251242, and the PrimaryCarrier = 0488. TRAVER 42 provides a sample TRAVER output for a national carrier call with a 4 CIC-based FGD trunk originator.

Figure 42 Sample TRAVER output for a national carrier call with a 4 CIC-based FGD trunk originator

```

>traver tr isupitic n cdn na 4162581234 tns na unk 0488 ainres r02 ar fgd b
Warning: Routing characteristics are present.

```

Figure 42 Sample TRAVER output for a national carrier call with a 4 CIC-based FGD trunk originator (Continued)

```

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
. Tuple not found. Default to old pretranslator name.
. 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 Y
. TABLE OCCSRV
. TUPLE NOT FOUND
. TABLE NSCDEFS
. AIN 3 ( NSC0ZZ 088) ( NSC1NX 188) ( NSCOP0ZZ 099) ( NSCOP1NX 180)$
. NOTE: ISDN Digit Conversion has been performed:
.     Trunk originator of type FGD assumed.
.     FGD Trunk Originator"s translations assumes CIC size of 4.
.     Resulting digits are: 08804884162581234
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.
. 0880488 0880488 EA DD 7 N ITT Y OFRT 900 7 25 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 3
. . S D OGEAITT
. . N D ISUPOGITT 0 N N
. . CND ALWAYS SK 2
. . N D OGEAITT 15 D179 N
. . N D ISUPOGITT 0 D179 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN

```

Figure 42 Sample TRAVER output for a national carrier call with a 4 CIC-based FGD trunk originator (Continued)

```

TUPLE NOT FOUND

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 OGEAITT          4162581234      ST
2 ISUPOGITT        4162581234      ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 T120

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

3.3.13 National call with LEC carrier and FGD trunk originator

The command line assumes that the originator is public trunk ISUPITEAIC, the CalledPartyID = National Number 6136213003, and Carrier ID = 0110 (LEC carrier). TRAVER 43 provides a sample TRAVER output for national call with LEC carrier and a 4 CIC-based FGD trunk originator.

Figure 43 Sample TRAVER output for national call with LEC carrier and FGD trunk originator

```

>traver tr isupiteaic n cdn na 6136213003 tns na unk 0110 ainres r02 ar fgd
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 TRKGRP
ISUPITEAIC 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 TIID
TABLE PXLAMAP
. CDNPUB E800 ( XLA E800X) ( PREFIX )$
. NSC0ZZ option must be present in NSCDEFS
. NSCOP0ZZ option must be present in NSCDEFS
. NSC1NX option must be present in NSCDEFS
. NSCOP1NX option must be present in NSCDEFS
. NOTE: ISDN Digit Conversion has been performed:
.     Trunk originator of type FGD assumed.
.     FGD Trunk Originator"s translations assumes CIC size of 4.

```

Figure 43 Sample TRAVER output for national call with LEC carrier and FGD trunk originator

```
.      Resulting digits are: 16136213003
TABLE STDPRTCT
E800X ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 1613 1613 ET DD 1 SSP N
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 321) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 613 613 HNPA 0
. 621 621 DN 613 621
TABLE TOFCNAME
613 621 $
TABLE DNINV
613 621 3003 L HOST 00 0 04 05
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP00100 SOC Option is IDLE.
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNPA results are used.
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                6136213003                ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 T120

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

3.3.14 National carrier operator call with 4 CIC based FGD trunk originator

The command line assumes that the originator is public trunk ISUPITIC, the CalledPartyID = National Number, carrier operator present 4166251242, and the PrimaryCarrier = 0488. TRAVER 44 provides a sample TRAVER output for national carrier operator call with a 4 CIC-based FGD trunk originator.

Figure 44 Sample TRAVER output for national carrier operator call (4 CIC-based FGD trunk originator)

```
>traver tr isupitic n cdn na 4162581234 tns na unk 0488 osa puba ainres r02
ar fgd b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. OSAAPUB (OSA PUBA (TNS NA)$) (OSA PUBA (CDN NA) (TNS NA)$) (OSA PUBA
(CDN IN) (TNS NA)$) ( BC 3_1KHZ (OSA PUBA) (TNS NA)$) ( BC 3
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
. Tuple not found. Default to old pretranslator name.
. 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 Y
. TABLE OCCSRV
. TUPLE NOT FOUND
. TABLE NSCDEFS
. AIN 3 ( NSC0ZZ 088) ( NSC1NX 188) ( NSCOP0ZZ 099) ( NSCOP1NX 180)$
. NOTE: ISDN Digit Conversion has been performed:
.       Trunk originator of type FGD assumed.
.       FGD Trunk Originator"s translations assumes CIC size of 4.
.       Resulting digits are: 09904884162581234
TABLE STDPRCT
E800 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 0990488 0990488 EA OA 6 N ITT Y OFRT 106 7 25 N
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
. . TABLE OFRTMAP
. . Tuple not found. Default to old index.
. . TABLE OFRT
```


Figure 44 Sample TRAVER output for national carrier operator call (4 CIC-based FGD trunk originator) (Continued)

```

. . 106 N D LNTOPSO 1 N N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LNTOPSO                4162581234                ST3P

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 T120

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

3.3.15 National call with for CIC based FGD trunk originator

The command line assumes that the originator is a public trunk ISUPITIC and the CalledPartyID =National Number 4164631301. TRAVER 45 provides a sample TRAVER output for a national call with a 4 CIC-based FGD trunk originator.

Figure 45 Sample TRAVER output for a national call (4 CIC-based FGD trunk originator)

```

>traver tr isupitic n cdn na 4162581234 ainres r02 ar fgd 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 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
. CDNPUB E800 ( XLA PBXNOCAR) ( PREFIX )$
. NOTE: ISDN Digit Conversion has been performed:
.       Trunk originator of type FGD assumed.
.       FGD Trunk Originator"s translations assumes CIC size of 4.
.       Resulting digits are: 14162581234

```

Figure 45 Sample TRAVER output for a national call (4 CIC-based FGD trunk originator) (Contin-

```

TABLE STDPRTCT
PBXNOCAR ( 1) ( 0) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN 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 999 1 ( 315) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 416 416 HNPA 0
. 258 258 LRTE 719
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 719 N D ISUPITOG 0 $ Y
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNPA results are used.
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) ( ESCOA ) ( 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 ISUPITOG 4162581234 ST

TREATMENT ROUTES. TREATMENT IS: GNCT
1 T120

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

3.3.16 International carrier call with FGC trunk originator

TRAVER 46 provides a sample TRAVER output for an international carrier call with an FGC trunk originator. The command line assumes that the originator is a public trunk ISUPITIC, the CalledPartyID = International Number 8527146926, and the PrimaryCarrier = 0488. Charge number digits are provided for the trunk using the AINCHG option.

Figure 46 International carrier call with FGC trunk originator

```
>traver tr isupitic n cdn in 8527146926 tns na unk 0488 ain ainchg
6136213009 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)$) (CDN IN (TNS NA)$) ( BC 3_1KHZ (CDN NA) (TNS
NA)$) ( BC 3_1KHZ (CDN IN) (TNS NA)$)$
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 TIID
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
. Resulting digits are: 04880118527146926
TABLE STDPRTCT
E800 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 0488011 0488011 ET DD 7 ITT Y OFRT 900 5 20
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 900 N D ISUPOGITT 0 N N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE CCTR
852 T 692 9 11 T OFRT 64 Y $
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
64 N D TOPOGNY 3 N N
```

Figure 46 International carrier call with FGC trunk originator (Continued)

```
      N D TERMBX01 3 N N
EXIT TABLE OFRT
TABLE TRKLATA
ISUPITIC 6136213009 LATA1 N
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 Y
Default is to leave route unchanged

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 ISUPOGITT          8527146926          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 T120

+++ TRAVER: SUCCESSFUL CALL TRACE +++

>
```

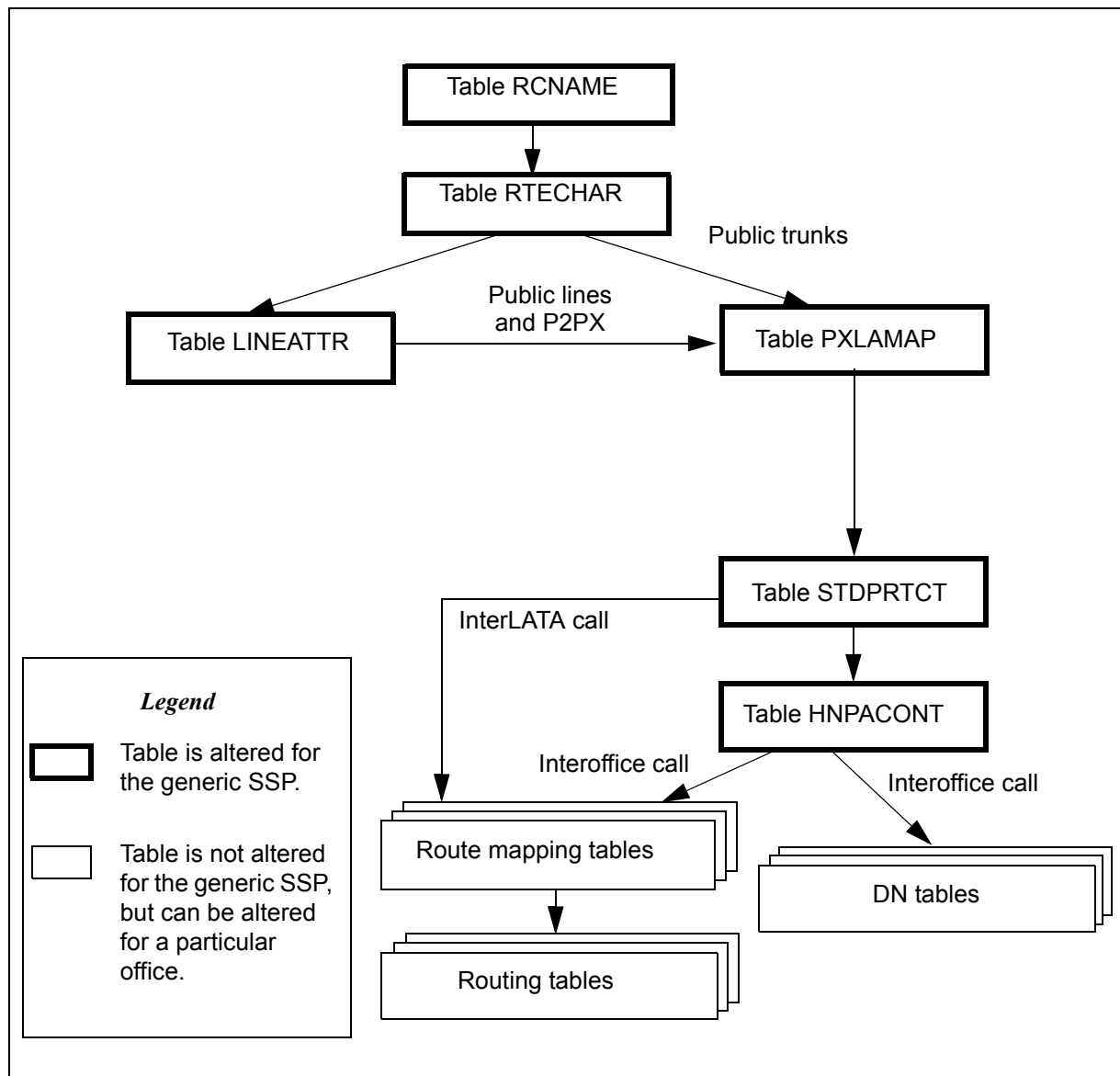
4 AIN response translations for private agents

**CAUTION****Possible loss of service**

Incorrect translations can result in call failures or automatic message accounting (AMA) loss. To minimize the number of call failures, alter translations only during low-traffic periods.

This chapter describes the additional datafill required for AIN response translations when triggering agents are public lines or public trunks.

Figure 47 on page 152 outlines the different tables needed for AIN response translations for private agents and the relationship between these tables.

Figure 47 AIN table relationships for public agents - without simplification

The generic SSP referenced in Figure 47 has the following characteristics:

- The generic SSP is an equal-access end office (EAEO). An EAEO was selected because it requires more data than tandem office. Tandem offices can also use this document because the data required is generally a subset of the EAEO data.
- The generic SSP supports calls from a network access point (NAP); that is, the generic SSP supports incoming public trunks using EAMF signaling or Transit Network Selection (TNS) for Signaling System Number 7 (SS7) facilities. This implies that the datafill is present to support 0ZZXXX calls.

- The generic SSP does not have routing based on bearer capability (package NTX767 or NTX768). This assumption was made to simplify the datafill explanations. Bearer capability is detailed in sections on modification of generic SSP data.
- The generic SSP supports a variety of AIN services that allow all types of national and international calls in the AIN response, including operator and carrier calls. When the AIN services do not support all call types, the data for the unsupported call type is not required.
- The generic SSP supports the private lines and private trunks. Though not explicitly stated, the office also supports public lines and trunks.
- The generic SSP routes all public numbers in the public environment.
- The generic SSP supports only triggering at a Public Office Dialing Plan (PODP) trigger for all AIN supported agents.
- The generic SSP supports only one public dialing plan used in AIN response translation. The generic SSP does not span LATA boundaries.
- The generic SSP does not require class of service screening during AIN response translation.
- The generic SSP supports 10-digit outpulsing of home numbering plan numbers. The network supports 10-digit dialing from public trunks.
- As of NA003, the SSP supports a 7-digit subscriber number in the CalledPartyID returned by the SCP, as well as national and international numbers in the CalledPartyID.
- The generic SSP supports overriding line attributes when an agent triggers on SDS and receives an Analyze_Route response message or uses default routing. Overriding line attributes are used during response processing in place of the originator's line attributes, allowing the customer to overcome the toll restrictions imposed by the originator's line attributes. See Section 30.2.3 "Step 3: Datafilling for line attribute response processing" on page 767 to provision overriding line attributes for a trigger item. See Section 30.3.4 "Step 4: Datafilling table PODPATTR (optional)" on page 788 to provision overriding line attributes for a trigger group.

4.1 Datafill for private lines and trunks without simplification

This section details the additional datafill required to support AIN response translations without activating the simplification feature.

4.1.1 Table RCNAME

Translation and routing of AIN responses is based on attributes found in the intelligent information elements (herein referred to as routing characteristics). Prior to translation, these attributes are mapped onto tables RCNAME and RTECHAR.

Table RCNAME (routing characteristic name) contains a list of names that are associated with a group of routing characteristics in table RTECHAR.

Once an alphanumeric entry is placed into table RCNAME, that alphanumeric entry can be used as an RCNAME key in any of the following:

- translation mapping tables (such as table XLAMAP and table PXLAMAP)
- route mapping tables (such as subtable RTEMAP, table OFRTMAP, and table IBNMAP)
- table RTECHAR

Note: Though there are other tables that contain RCNAME, they are not documented here because they are not relevant to AIN response processing.

The routing characteristic tables should be datafilled in the following order:

1. table RCNAME
2. the translation mapping tables and the routing mapping tables
3. table RTECHAR

ATTENTION

Table RCNAME should be datafilled before table RTECHAR, before the translation mapping tables, and before the route mapping tables. Failure to datafill in the order listed above results in a call failure for calls using previous routing characteristics that correspond to an old RCNAME.

4.1.1.1 Recommended RCNAME datafill for AIN response translations

The required data for Table RCNAME for AIN response processing depends on the additional entries required for table RTECHAR as described in Section 4.1.2 “Table RTECHAR” on page 155.

Table 31 illustrates the data that would be present for a generic SSP. Details on the associated routing characteristics are provided in the following chapter.

Table 31 Generic SSP data

Type of access	RCNAME
National call	NACALL
National carrier call	NACAR
International call	INCALL

Table 31 Generic SSP data (Continued)

International carrier call	INCAR
Subscriber Call	SUBCALL
Subscriber Carrier Call	SUBCAR
International operator	INOPER
International carrier operator	INCAROP
National carrier operator	NACAROP
Carrier operator	CAROP
Bell operating company operator call	BOCOP

4.1.1.2 Modifying generic RCNAME data for office or AIN service

Modification of table RCNAME depends on the modification of table RTECHAR. See Section 4.1.2.5 “Modifying generic RTECHAR data for an office or an AIN service” on page 163.

4.1.2 Table RTECHAR

Table RTECHAR (routing characteristics) allows the DMS to translate and route on attributes found in intelligent information elements. The attributes (herein referred to as characteristics) that are applicable to AIN during response processing are described in this chapter.

This chapter describes table RTECHAR under the following headings:

- Routing characteristics
- Combining routing characteristics
- Recommended datafill to support AIN response processing

4.1.2.1 Routing characteristics

There are four routing characteristic types:

- Bearer capability
- Called party number
- Operator System Access
- Transit Network Selection

4.1.2.1.1 Bearer capability The bearer capability (BC) determines the type of transmission service accessible to the user. The BC of the call is not altered by AIN response processing. Thus, the BC routing characteristic is maintained.

Before querying the SCP, the BC is maintained while processing the SCP response. Table 32 contains examples of Bearer Capabilities that are supported for AIN.

Table 32 Bearer capability characteristics

Bearer capability (as per TR-NWT-001285)	Characteristic
Speech	(BC SPEECH))
3.1 kHz audio	(BC 3_1KHZ)
56kbps	(BC 56KDATA)
64kbps	(BC 64KDATA)

Note: Bearer capability is used as a routing characteristic only when the DMS has package NTX767 or NTX768.

4.1.2.1.2 Called party number The called party number (CDN) type indicates the intended use of the corresponding digits. AIN response processing currently supports the following CDN types:

- NIL indicates that either digits are not present or that the type of number is indeterministic for digits that are present.
- National (NA) indicates a number in either the 10-digit public format or N11 format.
- International (IN) indicates that the number is an international 7- to 12-digits.
- Subscriber (L) indicates that a number is in 7-digit public format.

Note: AIN response processing currently does not support a private network (NET) number or a private abbreviated (ABBR) number.

Parameter CalledPartyID must use parameter AINDigits format. Parameter AINDigits contains the “nature of number” field. It is this field that is used to identify the CDN characteristic. See TR-NWT-001285, *Switching Control Point Interface*.

Table 33 illustrates the characteristics of the “nature of number” field.

Table 33 Characteristics of the nature of number field

Nature of number	Characteristic
National (significant) number/ National (significant) number, operator requested	(CDN NA)

Table 33 Characteristics of the nature of number field (Continued)

Nature of number	Characteristic
International number/ International number, operator requested	(CDN IN)
Subscriber number/ Subscriber number, operator requested	(CDN L)
No address present, operator requested	(CDN NIL)
No address present, cut-through call to carrier.	(CDN NIL)
Note: The 950+ Nature of Number Called Party numbers are 7-digits numbers datafilled as Subscriber CDN type. However, the call is routed as national number.	

4.1.2.1.3 Operator system access The operator system access indicates the required operator by type of access:

- Public/Principle (PUBP) access is used to direct the call to an operator when there is no carrier parameter specified in the response. Note that the operator this call is being routed to can either be the local exchange carrier (LEC) operator or the carrier operator, depending on the nature of the call and the translation set up.
- Public/Principle (PUBP) access is used to direct the call to an operator when the carrier that is used in translation is a LEC. Note that the operator this call is being routed to can either be the LEC operator or the carrier operator, depending on the nature of the call and the translation setup.
- Public/Alternate (PUBA) access is used to direct the call to a carrier operator when the carrier that is used in translation is NOT an LEC.

Note: Private/Principle access, that is used to direct calls to a private network attendant system or a private branch exchange (PBX), is not supported by AIN.

AIN uses the CalledPartyID parameter (“nature of number” field) to indicate that an operator is required. The type of operator that is required depends on the following:

- The SCP can return one or more carriers in the form of PrimaryCarrier, AlternateCarrier, and SecondAlternateCarrier. The SSP translates using each carrier in turn until a facility is selected or the SSP detects that the carrier is busy. Routing characteristics associated with each carrier are selected before the translation of each carrier.
- When the carrier that is used in the translation is not an LEC (identified by 0110), then the carrier operator is required.

- When the carrier that is used in translation is an LEC, then the PUBP operator is required.
- When there was no carrier parameter presented in the response, then the PUBP operator is required.

Table 34 illustrates the characteristics of each type of operator.

Table 34 Type of operator characteristics

Type of operator	Characteristic
Operator (also referred to as the public/principle operator)	(OSA PUBP)
Carrier operator (also referred to as the public/alternate operator)	(OSA PUBA)

4.1.2.1.4 Transit network selection Transit network selection (TNS) is used in interswitch calls to indicate the type of facility that the user wants to select:

- Nationally-Standardized (NA) indicates a call in the public network using public carriers.
- User-Specified Network indicates a call in the private environment using private facilities.

Note: AIN supports only Nationally-Standardized (NA).

In AIN the presence of TNS is determined in the following manner:

- The SCP can return one or more carriers in the form of PrimaryCarrier, AlternateCarrier, and SecondAlternateCarrier. The SSP translates using each carrier in turn until a facility is selected or the SSP detects that the carrier is busy. Routing characteristics associated with each carrier are selected before the translation of each carrier.
- When the carrier that is used in the translations is not an LEC (identified by 0110), the transit network selection of NA is required.
- When the carrier that is used in translation is an LEC, then the transit network selection is not required.
- When there is no carrier parameter specified in the response, then the transit network selection is not required.

Table 35 illustrates the type of network characteristics.

Table 35 Type of network characteristics

Type of network	Characteristic
Nationally Standardized	(TNS NA)

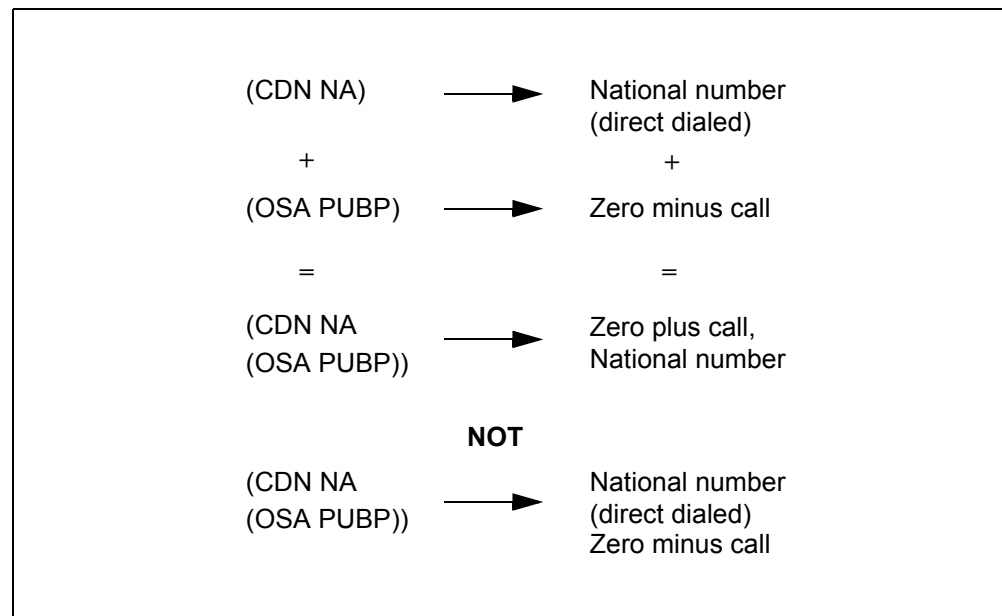
4.1.2.2 Combining routing characteristics

A call can have one or more routing characteristics. The combination of several characteristics usually introduces a different call type rather than individual characteristics.

For example,

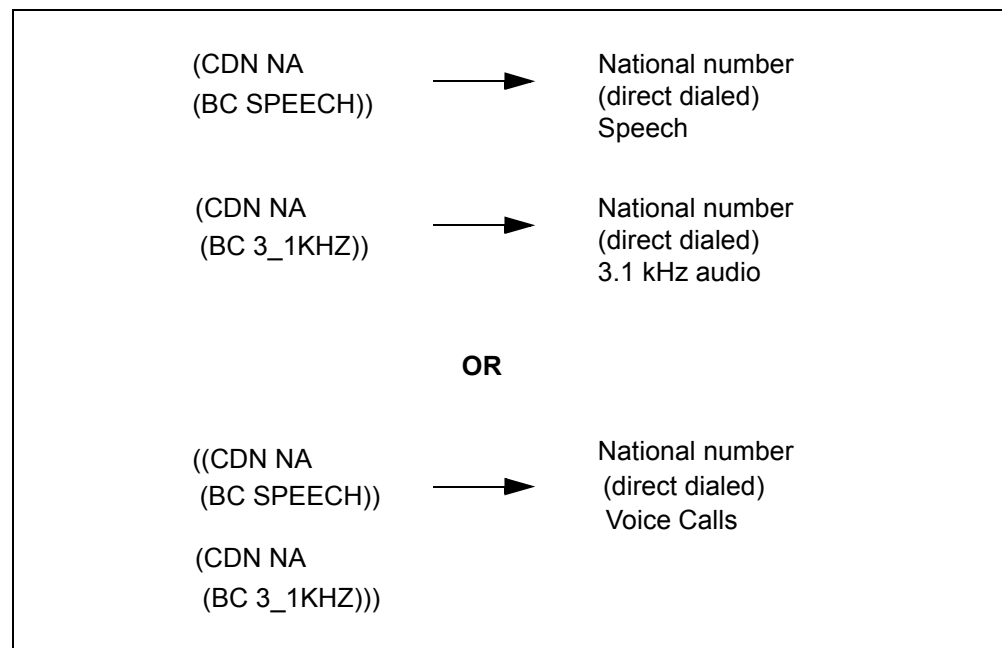
- A called party number of NA with no other routing characteristics translates as a 10-digit national number.
- An operator system access with no other routing characteristics translates as a zero minus call. The operator enters the number the user wants to call.
- When a called party number is present in conjunction with an operator system access, the call translates as a zero plus call. The call routes to an operator, but the operator does not need to enter the number as it has already been provided.
- The call does not translate as a zero minus, national number because there is no such call type.

Figure 48 on page 160 illustrates this example.

Figure 48 Example #1: combining routing characteristics

In some instances, different combinations could be treated identically. It is up to the operating company to determine whether or not the differential factor identifies a new call type.

Figure 49 illustrates another possible combination.

Figure 49 Example #2: combining routing characteristics

Though both methods are correct, the one shown in Figure 49 is preferred because it minimizes datafill in the tables that use RCNAME.

4.1.2.3 Routing characteristic combinations supported by AIN response processing

Table 36 on page 161 illustrates the possible routing characteristic combinations determined from an AIN response. Each bearer capability is compatible with all combinations and is not shown here for simplicity.

Table 36 Combinations supported by AIN response processing

Type of access	Routing characteristic combinations		
National call	(CDN NA)		
National carrier call	(CDN NA)		(TNS NA)
Subscriber call	(CDN L)		
Subscriber carrier call	(CDN L)		(TNS NA)
International call	(CDN IN)		
International carrier call	(CDN IN)		(TNS NA)
International operator	(CDN IN)	(OSA PUBP)	
International carrier operator	(CDN IN)	(OSA PUBA)	(TNS NA)
National carrier operator	(CDN NA)	(OSA PUBA)	(TNS NA)
Carrier operator		(OSA PUBA)	(TNS NA)
BOC operator—zero minus call		(OSA PUBP)	
BOC operator—zero plus national call	(CDN NA)	(OSA PUBP)	
BOC operator—zero plus subscriber call	(CDN L)	(OSA PUBP)	

4.1.2.4 Recommended datafill to support AIN response processing

Datafill is highly influenced by office and AIN services. This section first documents generic RTECHAR data and, then, documents how to modify the generic RTECHAR data based on office and AIN services.



CAUTION

Incorrect translations possible

Missing datafill in table RTECHAR can produce incorrect translations.

A tuple in table RTECHAR represents the routing characteristics returned in an Analyze_Route, Forward_Call, or Send_To_Resource to an IP and the

routing characteristic (BC) that is signaled in from the originating agent and used during response translations. When a tuple does not exist in table RTECHAR with the same routing characteristics as those used during response processing, an RCNAME cannot be derived and the response cannot be translated correctly. A DFIL log (DFIL320) is generated to indicate a missing tuple.

The generic RTECHAR datafill provided in the examples is based on the following:

- The generic SSP is an equal-access end office (EAEO).
- The generic SSP supports calls from a network access point (NAP); that is, this SSP supports incoming public trunks using EAMF signaling or TNS for SS7 facilities.
- The generic SSP does not have routing services based on bearer capability (package NTX767 or NTX768).
- The generic SSP supports a variety of AIN services that allow all types of national and international calls in the AIN response, including operator and carrier calls.

Table 37 illustrates the RCNAMES and routing characteristic combinations for various access types.

Table 37 Routing characteristic combinations by access type

Type of access	RCNAME	Routing characteristic combination
National call	NACALL	(CDN NA \$) \$
National carrier call	NACAR	(CDN NA (TNS NA) \$) \$
Subscriber call	SUBCALL	(CDN L) \$
Subscriber carrier call	SUBCAR	(CDN L (TNS NA) \$) \$
International call	INCALL	(CDN IN \$) \$
International carrier call	INCAR	(CDN IN (TNS NA) \$) \$
International operator	INOPER	(CDN IN (OSA PUBP) \$) \$
International carrier operator	INCAROP	(CDN IN (OSA PUBA) (TNS NA) \$) \$
National carrier operator	NACAROP	(CDN NA (OSA PUBA) (TNS NA) \$) \$
Subscriber carrier operator	SUBCAROP	(CDN L (OSA PUBA) (TNS NA) \$) \$
Carrier operator	CAROP	(OSA PUBA (TNS NA) \$) \$
Bell operating company operator call	BOCOP	(CDN NA (OSA PUBP) \$) (CDN L (OSA PY\$) (OSA PUBP \$) \$

4.1.2.5 Modifying generic RTECHAR data for an office or an AIN service

The generic RTECHAR data is a superset of AIN functionality with the exception of bearer capability. Some of the routing characteristic combinations can be further grouped to minimize the datafill in the associated mapping tables.

The following subsections describe in detail the modification of generic RTECHAR data depending on the office type or AIN service.

4.1.2.5.1 Offices that do not support a NAP For offices that do not support calls from a NAP, it is possible to group national calls (NACALL) and national carrier calls (NACAR). Similarly, international calls (INCALL) and international carrier calls (INCAR) could also be grouped.

Table 38 on page 163 illustrates routing characteristic combination for offices that do not support a NAP.

Table 38 Combinations for non-NAP supporting offices

Type of access	RCNAME	Routing characteristic combination
National call & national carrier call	NACALL	(CDN NA \$) (CDN NA (TNS NA) \$) \$
Subscriber call & Subscriber carrier call	SUBCALL	(CDN L \$) (CDN L (TNS NA \$) \$
International call & international carrier call	INCALL	(CDN IN \$) (CDN IN (TNS NA) \$) \$

The datafill in Table 38 would replace the NACALL, NACAR, INCALL, and INCAR entries in generic RTECHAR data. All other entries specified in generic RTECHAR data remain unaltered.

4.1.2.5.2 Offices that support bearer capability routing When the office supports bearer capability routing (package NTX767 or NTX768), bearer capability must also be datafilled in Table RTECHAR. The following is an example of how a national call entry would expand based on Bearer Capability.

Table 39 illustrates some combinations for national call entries.

Table 39 Combinations for national call entries

Type of access	RCNAME	Routing characteristic combinations
National call (Voice call)	NACALL	(CDN NA \$) (CDN NA (BC 3_1KHZ) \$) \$

Table 39 Combinations for national call entries (Continued)

Type of access	RCNAME	Routing characteristic combinations
National call (56 kbps)	NA56K	(CDN NA (BC 56KDATA) \$) \$
National call (64 kbps)	NA64K	(CDN NA (BC 64KDATA) \$) \$

Note: The 56 kbps calls are separated from the 64 kbps calls because PTS trunks support 56 kbps calls but do not support 64 kbps calls. Each entry in generic RTECHAR would need to be expanded in a way similar to the national call.

4.1.2.5.3 AIN services that do not allow international numbers

When the AIN services do not allow an international number in the response, then the tuples in Table 40 on page 164 can be removed from generic RTECHAR datafill.

Table 40 Combinations for services that do not support international numbers

Type of access	RCNAME	Routing characteristics and combinations
International call	INCALL	(CDN IN \$) \$
International carrier call	INCAR	(CDN IN (TNS NA) \$) \$
International operator	INOPER	(CDN IN (OSA PUBP) \$) \$
International carrier operator	INCAROP	(CDN IN (OSA PUBA) (TNS NA) \$) \$

All other entries in generic RTECHAR data would remain unaltered.

4.1.2.5.4 AIN services that do not allow operator numbers When the AIN services do not allow operator calls in the response, the tuples in Table 41 can be removed from generic RTECHAR datafill.

Table 41 Combinations for services that do not allow operator numbers

Type of access	RCNAME	Routing characteristic combinations
International operator	INOPER	(CDN IN (OSA PUBP) \$) \$
International carrier operator	INCAROP	(CDN IN (OSA PUBA) (TNS NA) \$) \$
National carrier operator	NACAROP	(CDN NA (OSA PUBA) (TNS NA) \$) \$
Subscriber carrier operator	SUBCAROP	(CDN L (OSA PUBA) (TNS NA) \$) \$
Carrier operator	CAROP	(OSA PUBA (TNS NA) \$) \$

Table 41 Combinations for services that do not allow operator numbers (Continued)

Type of access	RCNAME	Routing characteristic combinations
Bell operating company operator call	BOCOP	(CDN NA (OSA PUBP) \$) (CDN L (OSA PUBP) \$) (OSA PUBP \$) \$

All other entries in generic RTECHAR data would remain unaltered.

4.1.3 Digits used in AIN response translations

When a public agent triggers and receives an Analyze Route or a Forward call response from the SCP with digits specified, translation and routing processing should take place to translate the digits and route the call. Depending on the nature of the response, digits to translate can have different format.

Table 42 on page 165 summarizes the digits used in response translations for various carrier and called party number combinations. The maximum number of digits supported is 18.

Table 42 Digits used in AIN translation

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits used in translations for an end office	Digits used in translations for an access tandem
National number	10D	XXX	10XXX+(10)D	0XXX+(10)D
Subscriber number	7D	XXX	10XXX+(7)D	0XXX+(7)D
International number	7-15D	XXX	10XXX+(7-12)D	0XXX+(7-12)D
No address present, operator requested	0D	XXX	10XXX	0XXX
National number, operator requested	10D	XXX	10XXX+(10)D	0XXX+(10)D
Subscriber number, operator requested	7D	XXX	10XXX+(7)D	0XXX+(7)D
International number, operator requested	7-15D	XXX	10XXX+(7-12)D	0XXX+(7-12)D
National number	10D	XXXX	101XXXX+(10)D	XXXX+(10)D
Subscriber number	7D	XXXX	101XXXX+(7)D	XXXX+(7)D
International number	7-15D	XXXX	101XXXX+(7-12)D	XXXX+(7-12)D
No address present, operator requested	0D	XXXX	101XXXX	XXXX

Table 42 Digits used in AIN translation (Continued)

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits used in translations for an end office	Digits used in translations for an access tandem
National number, operator requested	10D	XXXX	101XXXX+(10)D	XXXX+(10)D
Subscriber number, operator requested	7D	XXXX	101XXXX+(7)D	
International number, operator requested	7-15D	XXXX	101XXXX+(7-12)D	
National number	10D	Not present	(10)D	
Subscriber number	7D	Not present	(7)D	
International number	7-15D	Not present	(7-12)D	
No address present, operator requested	0D	Not present	0	
National number, operator requested	10D	Not present	(10D)	
Subscriber number, operator requested	7D	Not present	(7)D	
International number, operator requested	7-15D	Not present	(7-12)D	
950+ Call	7D	Not present	(7)D	
Carrier cut-through	Not present	XXX	10XXX	N/A
Carrier cut-through	Not present	XXXX	101XXXX	N/A

4.1.4 Table XLAMAP

When a private agent triggers and receives an Analyse Route or a Forward call response from the SCP with digits specified, translation and routing functions should take place to translate the digits and route the call. The digits coming into the SCP response are not in a format that can reuse originator's private pretranslator (no public access code is prefixed, could be in 10D format whereas local dialing supports only 7D format, no international access code is

prefixed in case of international calls). See Table 42. Then a new pretranslator should be defined to handle these digits. Table XLAMAP is used to map to a new pretranslator and allow private lines and private trunks on the DMS to translate differently given a RCNAME and a Meridian Digital Centrex (MDC) translator.

Table XLAMAP allows the operating company to alter translation through the following methods:

- The XLA selector directs the call to use a new translator name.
- The LINEATTR selector provides direct access to a line attribute that does not support equal access. Note that this selector is not supported by the current AIN release.
- The ROUTE selector provides direct access to a route list element when there are no address digits to translate on. Note that this selector is not supported by the current AIN release.

Note: AIN response translations supports only the XLA selector. The XLA selector specifies a translator that directs the call to the public environment.

4.1.4.1 Recommended datafill for table XLAMAP to support AIN response translation

The generic XLAMAP datafill recommended in this section is based on the following:

- The generic SSP is an equal-access end office (EAEO).
- The generic SSP supports private lines and private trunks.
- The generic SSP routes all public numbers in the public environment.
- The generic SSP supports triggering at the Public Office Dialing Plan (PODP) trigger for all AIN supported agents.
- The generic SSP supports a variety of AIN services that allow all types of national and international calls in the AIN response, including operator and carrier calls.

The RCNAMES used in Table 43 are from the generic RTECHAR example described in Section 4.1.1 and Section 4.1.2. When an office modifies table RTECHAR data, the following example should be modified accordingly.

Table 43 Generic RTECHAR RCNAME examples

RCNAME	XLANAME	Data
NACALL	<1st XLA>	(XLA PUBXLA) \$
NACAR	<1st XLA>	(XLA PUBXLA) \$

Table 43 Generic RTECHAR RCNAME examples (Continued)

SUBCALL	<1st XLA>	(XLA PUBXLA) \$
SUBCAR	<1st XLA>	(XLA PUBXLA) \$
INCALL	<1st XLA>	(XLA PUBXLA) \$
INCAR	<1st XLA>	(XLA PUBXLA) \$
INOPER	<1st XLA>	(XLA PUBXLA) \$
INCAROP	<1st XLA>	(XLA PUBXLA) \$
NACAROP	<1st XLA>	(XLA PUBXLA) \$
SUBCAROP	<1st XLA>	(XLA PUBXLA) \$
CAROP	<1st XLA>	(XLA PUBXLA) \$
BOCOP	<1st XLA>	(XLA PUBXLA) \$

The <1st XLA> entry in the second column of Table 43 on page 167 refers to the first non nil translator that a private agent encounters. The ordering of translators is as follows:

- table NCOS, option XLAS, translator identified in field PREMCLA
- table CUSTHEAD, translator identified in field PREMXL
- table CUSTHEAD, translator identified in field CUSTXLA

The entries in Table 43 on page 167 need to be duplicated for the first non-nil translator of each private agent.

The new translator name (that is, PUBXLA) can be different for each mapped translator. It is recommended that the number of new translators be limited to one per customer group.

In most offices, the number of new translators is equivalent to the number of public dialing plans the office supports. The number of public dialing plans depends on the number of LATAs and the number of NPA NXX that require different public dialing plan.

4.1.4.2 Modifying generic XLAMAP data for an office or an AIN service

When the office supports only individual or customer group triggers, table XLAMAP requires only the first translator for each subscribed private agent. For office-based triggers, every first translator of each private agent is required.

When the service does not support international or operator calls, the entries associated with those RCNAMES are not required.

When bearer capability routing is supported, then additional entries associated with the additional RCNAMES are required.

4.1.5 Table XLANAME

Table XLANAME is used to define the new pretranslators that direct calls from the private dialing plan to the public dialing plan. These new pretranslators are mapped to through table XLAMAP as described in Section 4.1.4.

4.1.5.1 Recommended datafill to support AIN response translation

The generic XLANAME datafill provided in Table 44 on page 169 is based on the following:

- The generic SSP is an equal-access end office (EAEO).
- The generic SSP supports the private lines and private trunks.
- The generic SSP routes all public numbers in the public environment.
- The generic SSP supports only one public dialing plan required for all AIN 0.1 response translation.
- The generic SSP does not support a default carrier per customer group for AIN response translation.

Table 44 Generic XLANAME datafill

XLANAME	Data	MAXDIG
PUBXLA	(NET N N N 0 N NDGT N N GEN (LATTR 500) (EA NILC Y 0) \$ \$) \$	9

Note 1: The following selectors must be present: NET, GEN, LATTR, and EA. These selectors allow equal-access calls to translate.

Note 2: For details on the fields in table XLANAME, please refer to NTP 297-2001-451, *Meridian Digital Centrex Customer Data Schema*.

4.1.5.2 Modifying generic XLANAME data for an office or an AIN service

When an office does not support the private dialing plan, then the entries in table XLANAME are not required.

Additional entries in table XLANAME are needed for each different public dialing plan that is required in AIN response translation.

When a default carrier per customer group is required, the data in Table 45 is required for each default carrier code.

Table 45 Data for a default customer group

XLANAME	Data	MAXDIG
MCIPUB	(NET N N N 0 N NDGT N N GEN (LATTR 500) (EA MCI Y 0) \$ \$) \$	9
ATTPUB	(NET N N N 0 N NDGT N N GEN (LATTR 500) (EA ATT Y 0) \$ \$) \$	9

4.1.6 Table LINEATTR

Table LINEATTR is the starting point of public dialing plan translations for private lines, private trunks, and public lines. This chapter discusses only additions to table LINEATTR with respect to private lines and private trunks for AIN response translation. The public lines use the subscribed line attribute that is associated with the LEN.

4.1.6.1 Recommended datafill to support AIN response translation

The generic LINEATTR datafill provided in Table 46 is based on the following:

- the generic SSP is an equal-access end office (EAEO)
- the generic SSP supports private lines and private trunks
- the generic SSP supports only one public dialing plan for all AIN response translations
- the generic SSP does not require class of service screening during AIN response translations

Table 46 Recommended datafill

LNATTIDX	Data
500	IBN NONE NT NSCR 0 613 P621 L613 TSPS 0 NIL NILSFC LATA1 0 NIL NIL 00 N

Note: For details on the fields in Table LINEATTR please refer to NTP 297-1001-451, *Customer Data Schema*.

4.1.6.2 Modifying generic LINEATTR data for an office or an AIN service

When an office does not support the private dialing plan, the additional entries in Table LINEATTR are not required.

When class of service screening is required for AIN response translation, the office has two options:

- The office can opt to reuse existing LINEATTRs from the IBN to the public environment. This requires additional data in the translation mapping tables as well.
- The office can add only the LINEATTR entries required for class of service screening.

When there is more than one public dialing plan, additional data is required in table LINEATTR. For example, an office can span two LATAs. In this case, the office requires a minimum of two entries in table LINEATTR, as shown in Table 47.

Table 47 Modified LINEATTR data

LNATTIDX	Data
500	IBN NONE NT NSCR 0 613 P621 L613 TSPS 0 NIL NILSFC LATA1 0 NIL NIL 00 N
501	IBN NONE NT NSCR 0 819 P622 L819 TSPS 0 NIL NILSFC LATA2 0 NIL NIL 00 N

Note: The additional line attribute allows for different STDPRT entries (for example, P621 and P622). Though this is not required for different originating numbering plan areas (NPA), it usually is required for different LATAs.

4.1.7 Table PXLAMAP

Table XLAMAP is used to map to a new pretranslator to translate digits coming into the SCP response when originator's pretranslator cannot be reused. The new pretranslator allows access to the public environment where digits are translated and routed. However, digits used into the public environment could have a format that cannot use public pretranslators. Then, new pretranslators should be defined to handle such cases. Table PXLAMAP (pretranslator mapping) is used to map to new pretranslators into the public environment to allow the DMS to translate differently given a RCNAME and a pretranslator.

Table PXLAMAP allows the operating company to alter translation through the following methods:

- The XLA selector directs the call to use a new pretranslator name.
- The POSITION selector provides access to a routing position when there are no address digits to translate on. Note that this selector is not supported by the current AIN release.

- The ROUTE selector provides direct access to a route list element when there are no address digits to translate on. Note that this selector is not supported by the current AIN release.
- The PREFIX selector activates the Response Translations Simplification. Digit conversion process is used in conjunction with the XLA selector to specify an exception pretranslator.

Note 1: This selector can be used only when the Response Translations Simplification feature is active.

Note 2: When no tuple is present for an RCNAME and an STDPRTNM the Response Translations Simplification digit conversion process is activated by default.

AIN response translations supports only the XLA and PREFIX selectors.

4.1.7.1 Recommended datafill for table PXLAMAP to support AIN response translation

The generic PXLAMAP datafill provided here is based on the following:

- The service switching point (SSP) is an equal-access end office (EAEO).
- This office supports a variety of AIN services that allow all types of national and international calls in the AIN response, including operator and carrier calls.
- The pretranslator names to be mapped are derived from the following:
 - All public line attributes for AIN supported agents
 - All public trunk groups for AIN supported agents
 - All private LINEATTRs that are used in AIN response translation, as defined in Section 4.1.6 “Table LINEATTR” on page 170.

Table 48 Recommended PXLAMAP datafill

RCNAME	XLANAME (Note)	Data
NACALL	P621	(XLA NAT) \$
NACAR	P621	(XLA NAT) \$
SUBCALL	P621	(XLA NAT) \$
SUBCAR	P621	(XLA NAT) \$
INCALL	P621	(XLA INT) \$
INCAR	P621	(XLA INT) \$
INOPER	P621	(XLA IOP) \$

Table 48 Recommended PXLAMAP datafill (Continued)

RCNAME	XLANAME (Note)	Data
INCAROP	P621	(XLA ICOP) \$
NACAROP	P621	(XLA NCOP) \$
SUBCAROP	P621	(XLA NCOP) \$
CAROP	P621	(XLA CAOP) \$
BOCOP	P621	(XLA NAOP) \$
NACALL	PTRK	(XLA NAT) \$
SUBCALL	PTRK	(XLA NAT) \$
NACAR	PTRK	(XLA NAPC) \$
SUBCAR	PTRK	(XLA NAPC) \$
INCALL	PTRK	(XLA INT) \$
INCAR	PTRK	(XLA NAPC) \$
Note: Assume P621 is the public translator for a public line and PTRK is the pretranslator for a public trunk.		

Though it is not necessary to separate the national and national carrier calls for lines, it is necessary to separate them for public trunks. Details of the new translator names and their function are provided in the next chapter.

The above entries for P621 need to be duplicated for each line pretranslator name. The new pretranslator names would be reused for each line pretranslator because there is only one dialing plan. Similarly, duplication of the PTRK entries would be required for public trunks.

The new pretranslator names (for example, NAT) would need to be datafilled in table STDPRTCT before datafilling table PXLAMAP.

4.1.7.2 Modifying generic PXLAMAP data for office or AIN service

When the AIN services do not support international or operator calls, the tuples with RCNAMEs reflecting these call types are required.

When the office supports only individual or customer group triggers, table PXLAMAP would require only the pretranslator for each subscribed agent. For office-based triggers, every pretranslator of each agent would be required.

4.1.7.2.1 Datafill for multiple public dialing plans When there is more than one dialing plan, additional new pretranslators would be required to support the additional dialing plans.

Note: The number of new pretranslators depends on several factors.

The example in Table 49 depicts sample datafill for two lines in different LATAs. Assume that the international carriers are the same for both LATAs.

Table 49 Sample datafill for two lines in different LATAs

RCNAME	XLANAME	Data
NACALL	P621	(XLA NAT) \$
NACALL	P622	(XLA NAT2) \$
NACAR	P621	(XLA NAT) \$
NACAR	P622	(XLA NAT2) \$
INCALL	P621	(XLA INT) \$
INCALL	P622	(XLA INT) \$
INCAR	P622	(XLA INT) \$
INCAR	P622	(XLA INT) \$

Note: The same pretranslator can be used for all international calls. Different pretranslators are used for national calls to differentiate among inter-LATA and intra-LATA calls.

4.1.7.2.2 Mapping RCNAMEs to reuse pretranslators The generic datafill illustrates seven new pretranslators for a line originator. Depending on the office, these can be further reduced to four pretranslators. The main difference is that the generic datafill allows a different carrier operator to be selected based on whether the 10XXX was dialed.

When different carrier operators are not required, the generic datafill can be modified as in Table 50 for the a line originator.

Table 50 Modified generic datafill

RCNAME	XLANAME	Data
NACALL	P621	(XLA NAT) \$
NACAR	P621	(XLA NAT) \$

Table 50 Modified generic datafill (Continued)

RCNAME	XLANAME	Data
SUBCALL	P621	(XLA NAT) \$
SUBCAR	P621	(XLA NAT) \$
INCALL	P621	(XLA INT) \$
INCAR	P621	(XLA INT) \$
INOPER	P621	(XLA IOP) \$
INCAROP	P621	(XLA IOP) \$
NACAROP	P621	(XLA NCOP) \$
SUBCAROP	P621	(XLA NCOP) \$
CAROP	P621	(XLA NCOP) \$
BOCOP	P621	(XLA NCOP) \$
NACALL	PTRK	(XLA NAT) \$

4.1.8 Table STDPRTCT

Table STDPRTCT and its subtable STDPRT are the main tables used in translating different call types. In the past, different call types were identified through unique digits datafilled in a standard pretranslator.

4.1.8.1 Datafill to support AIN response translations without simplification

Any new pretranslator to map to in table PXLAMAP should be defined in table STDPRTCT before.

The generic STDPRTCT datafill provided in Table 51 is based on the following:

- The generic SSP is an equal-access end office (EAEO).
- The generic SSP supports a variety of AIN services that allow all types of national and international calls in the AIN response, including operator and carrier calls.
- The datafill used in the previous STDPRTCT example is used as reference material.

The RCNAMES used in Table 51 are from the generic RTECHAR example. When an office modifies table RTECHAR data, the following example should be modified accordingly.

Table 51 Generic STDPRTCT datafill

STDPRTCT	
NAT	(1) (1234) ... (national calls)
	Subtable STDPRT
	The entry for the carrier below is similar to the destination provided in the MCI1 translator for national calls. 10488 10488 EA DD 5 T NA 488 Y OFRT 700 5 15 N
	9501542 9501542 FGB DD 0 C542 Y OFR3 542 7 7
	... other carriers ... (similar datafill as pretranslators for carrier, NA call)
	2 410 N DD 0 NA
	411 411 T NP 0 OFRT 1 3 3 NONE
	412 510 N DD 0 NA
	... other N11 Note that the standard North American entries are interleaved.
	The following entry is required for home area codes that do not require billing. 613 613 N NP 0 NA
INT	(1) (123) (international calls)
	Subtable STDPRT
	The entry for the carrier below is similar to the destination provided in the MCI1 recursive translator for international calls. 10488 10488 EA DD 5 T IN 488 Y OFRT 701 5 15 N
	... other carriers ... (same datafill as pretranslators for carrier, IN call)
	The entry below is similar to the P621 translator for international direct dialed calls. 2 9 N DD 0 IN
NAOP	(1) (122) ... (national operator call)
	Subtable STDPRT
	The entry below is similar to the P621 translator for national operator calls. 2 9 P OA 0 NA TOPS

Table 51 Generic STDPRTCT datafill (Continued)

STDPRTCT	
IOP	(1) (12) ... (international operator call)
	Subtable STDPRT
	The entry below is similar to the P621 translator for international operator calls. 2 9 P OA 0 IN TOPS
NCOP	(1) (127) ... (national carrier operator call)
	Subtable STDPRT
	The entry for the carrier below is similar to the destination provided in the MCI1 translator for national carrier operator call. 10488 10488 EA OA 5 T NA 488 Y OFRT 700 5 15 N
	... other carriers... (similar datafill as pretranslators for carrier)
CAOP	(1) (127) ... (operator carrier call—no address present)
	Subtable STDPRT
	The entry for the carrier below is similar to the destination provided in the MCI1 translator for “00” carrier operator call. 10488 10488 EA OA 5 T NO 488 Y OFRT 700 5 5 N
	... other carriers ... (similar datafill as pretranslators for carrier, “00” operator call)
ICOP	(1) (125) ... (international carrier operator call)
	Subtable STDPRT
	The entry for the carrier below is similar to the destination provided in the MCI1 translator for international operator calls. 10488 10488 EA OA 5 T IN 488 Y OFRT 701 5 15 N
	... other carriers ... (similar datafill as pretranslators for carrier, IN operator call)
NAPC	(1) (125) ... (NAP or access carrier call)
	Subtable STDPRT
	The entry for the carrier below is similar to the destination provided in the PTRK 0ZZ XXX call. 488 488 ET DD 3 MCI Y OFRT 900 3 15
	... other carriers ... (similar datafill OZZ XXX call)

4.1.8.2 Modifying generic STDPRTCT data for an office or an AIN service

Most switches do not differentiate between carrier operator–no address and national carrier operator within STDPRTCT. When your office does not need to differentiate, only one of NCOP or CAOP needs to be datafilled.

Some AIN services do not need to support operator calls, and so the operator pretranslators are not required.

4.1.9 Table HNPACONT.HNPACODE

Table HNPACONT and its subtable HNPACODE are probably the most straightforward to datafill for AIN response processing. In most instances, the tuples are already present.

The entry in table HNPACONT and subtable HNPACODE allows for 10-digit dialing of a number in the home numbering plan.

4.1.9.1 Recommended datafill to support AIN response processing

The generic HNPACONT datafill provided in Table 52 is based on the fact that the generic SSP does not currently support dialing of the home NPA.

Table 52 Generic datafill example

HNPACONT	
613	984 1 (270) (1) (84) (0)
	Subtable HNPACODE
	613 613 HNPA 0



CAUTION

Other table changes are required when 10-digit HNPA dialing is not supported in the network.

The previous example allows for 10-digit translation of a home numbering plan area (HNPA). When other switches in the network cannot support 10-digit dialing, then additional entries in the routing table are required to delete the HNPA.

4.1.10 Route mapping tables

The route mapping tables direct the call to a new route based on the RCNAME and a route derived by translations.

4.1.10.1 Recommended datafill to support AIN response processing

Additional datafill for the route mapping tables is not required in the generic SSP because it already meets the following conditions:

- The generic SSP does not have routing based on bearer capability.
- The generic SSP supports 10-digit outpulsing of home numbering plan numbers.

However, when routing based on BC is supported or 10-digit outpulsing of home numbering plan numbers is not supported, datafill is required for an office or an AIN service.

4.1.10.2 Routing based on bearer capability

The route mapping tables are currently used for routing based on bearer capability. Normally, the route derived from translations causes the use of standard facilities that support mainly voice communication. For some data calls, ISUP or ISDN facilities are required. Route mapping tables allow the DMS to map the standard facilities to the intelligent signaling facilities for data bearer capability.

As AIN uses other characteristics in conjunction with BC, the RCNAME that is derived from the response will probably not be the same as the RCNAME derived initially.

4.1.10.2.1 Example 1 BC64K would be used initially; NA64K would be used to translate and route the AIN response, as in Table 53.

Table 53 Datafill for example 1

Type of access	RCNAME	Routing characteristic combinations
64kbps call	BC64K	(BC 64KDATA \$) \$
National Call (64kbps)	NA64K	(CDN NA (BC 64KDATA) \$) \$

4.1.10.2.2 Example 2 When BC64K is datafilled in a route mapping table to select intelligent signaling facilities, the same tuple would need to be datafilled for NA64K as in Table 54.

Table 54 Datafill for example 2

RCNAME	INDEX	NEW INDEX
BC64K	10	510

Table 54 Datafill for example 2 (Continued)

RCNAME	INDEX	NEW INDEX
The following entry would be required:		
NA64K	10	510

4.1.10.3 Options for offices supporting only 7-digit dialing plan for HNP

See Chapter 53:“Options for offices supporting only 7-digit dialing for home numbering plan”.

4.2 Sample TRAVERs for private lines and trunks (no simplification)

This section contains TRAVER examples of various call types during AIN response translations without activating the Response Translations Simplification feature.

4.2.1 Additional data required for AIN response translations in TRAVERs

Table RCNAME and table RTECHAR are datafilled as specified in the recommended datafill to support AIN response translations in a generic SSP, as shown in Figure 50 on page 180.

Figure 50 Table RCNAME

```
TABLE RCNAME
. NACALL
. NACAR
. SUBCALL
. SUBCAR
. INCALL
. INCAR
. INOPER
. INCAROP
. NACAROP
. SUBCAROP
. CAROP
. BOCOP
```

For the generic SSP, Figure 51 on page 181 illustrates the entries for table RTECHAR.

Figure 51 Table RTECHAR

```

TABLE RTECHAR
. NACALL (CDN NA $) $
. NACAR (CDN NA (TNS NA) $) $
. SUBCALL (CDN L $) $
. SUBCAR (CDN L (TNS NA) $ $
. INCALL (CDN IN $) $
. INCAR (CDN IN (TNS NA) $) $
. INOPER (CDN IN (OSA PUBP) $) $
. INCAROP (CDN IN (OSA PUBA) (TNS NA) $) $
. NACAROP (CDN NA (OSA PUBA) (TNS NA) $) $
. SUBCAROP (CDN L (OSA PUBA) (TNS NA) $ $
. CAROP (OSA PUBA (TNS NA) $) $
. BOCOP (CDN NA (OSA PUBP) $) (CDN L (OSA PUBP $) (CDN (OSA PUBP $) $

```

When the SSP supports routing based on bearer capability, the above RTECHAR entries would be modified, as shown in Figure 52.

Figure 52 Table RTECHAR modified

```

TABLE RTECHAR
. NACALL (CDN NA $) (CDN NA (BC 3_1KHZ) $) $
. NACAR (CDN NA (TNS NA) $) (CDN NA (TNS NA) (BC 3_1KHZ) $) $
. SUBCALL (CDN L $) (CDN L (BC3_1KHZ) $) $
. SUBCAR (CDN L $) (CDN L (BC3_1KHZ) $) $
. INCALL (CDN IN $) (CDN IN (BC 3_1KHZ) $) $
. INCAR (CDN IN (TNS NA) $) (CDN IN (TNS NA) (BC 3_1KHZ) $) $
. INOPER (CDN IN (OSA PUBP) $) (CDN IN (OSA PUBP) (BC 3_1KHZ) $) $
. INCAROP (CDN IN (OSA PUBA) (TNS NA) $)
(CDN IN (OSA PUBA) (TNS NA) (BC 3_1KHZ)) $
. NACAROP (CDN NA (OSA PUBA) (TNS NA) $)
(CDN NA (OSA PUBA) (TNS NA) (BC 3_1KHZ)) $
. SUBCAROP (CDN L (OSA PUBA) (TNS NA) $)
(CDN L (OSA PUBA) (TNS NA) (BC3_1KHZ)) $
. CAROP (OSA PUBA (TNS NA) $) (OSA PUBA (TNS NA) (BC 3_1KHZ) $) $
. BOCOP (CDN NA (OSA PUBP) $) (OSA PUBP $) (CDN L (OSA PUBP) $)
(CDN NA (OSA PUBP) (BC 3_1KHZ) $) (CDN L (OSA PUBP) (BC3_1KHZ) $)
(OSA PUBP (BC 3_1KHZ) $)$

```

In order to simplify the TRAVER examples, only the three entries shown in Figure 53 on page 182 are used. The impact on the IBN environment for other call types is similar to the three call types shown.

Figure 53 Table XLAMAP

```
TABLE XLAMAP
. NACALL CESN ( XLA PUBXLA)$
. SUBCALL CESN ( XLA PUBXLA)$
. NACAR CESN ( XLA PUBXLA)$
. SUBCAR CESN (XLA PUBXLA)$
```

There is only one entry in table XLANAME, as shown in Figure 54, because the office supports only one dialing plan.

Figure 54 Table XLANAME

```
TABLE XLANAME
PUBXLA
      (NET N N N 0 N NDGT N N GEN ( LATTR 500) (EA NILC Y 0) $
```

All public calls from the AIN SCP that originate in the private environment use the new line attribute, as shown in Figure 55.

Figure 55 Table LINEATTR

```
TABLE LINEATTR
500 IBN NONE NT FR01 0 613 P722 L613 TSPS 10 NIL NILSFC LATA1 0 NIL NIL 00
```

The entries shown in Figure 56 map the RCNAME and pretranslator to obtain a new pretranslator based on call type.

Figure 56 Table PXLAMAP

```
TABLE PXLAMAP
. NACALL P722 ( XLA NAT)$
. NACALL P622 ( XLA NAT)$
. NACAR P722 ( XLA NAT)$
. SUBCALL P722 (XLA NAT)$
. SUBCALL P622 (XLA NAT)$
. SUBCAR P722 (XLA NAT)$
. INCALL P622 ( XLA INT)$
. INCAR P622 ( XLA INT)$
. INCAROP P622 ( XLA ICOP)$
. NACAROP P622 ( XLA NCOP)$
. SUBCAROP P622 (XLA NCOP)$
```

The new entries are pretranslators, as shown in Figure 57 on page 183.

Figure 57 Table STDPRTCT

```

TABLE STDPRTCT
NAT ( 1) ( 0) 0
. SUBTABLE STDPRT
. 10234 10234 EA DD 5 T NA MCI Y OFRT 963 3 15 N
. 613 613 N NP 0 NA
. 819 819 N DD 0 NA
INT ( 1) ( 0) 0
. SUBTABLE STDPRT
. 10234 10234 EA DD 5 T IN MCI Y OFRT 700 5 25 Y
. 10488 10488 EA DD 5 T IN ITT Y OFRT 900 5 20 N
. 2 9 N DD 0 IN
INCOP ( 1) ( 0) 0
. SUBTABLE STDPRT
. 10234 10234 EA OA 5 T IN MCI Y OFRT 700 6 25 Y
NCOP ( 1) ( 0) 0
. SUBTABLE STDPRT
. 10488 10488 EA OA 5 T NA ITT Y OFRT 963 5 20 N

```

The entry shown in Figure 58 allows for 10-digit dialing of home numbering plan.

Figure 58 Table HNPACONT

```

TABLE HNPACONT
613 20 15 ( 0) ( 1) ( 0) ( 0) 0
. SUBTABLE HNPACODE
. 613 613 HNPA 0

```

4.2.2 National call when the number returned is on the same SSP

The command line assumes that the originator is an IBN line 6137226962 and the CalledPartyID = National Number 6136221243. TRAVER 59 provides a sample TRAVER output for a national call with a returned number on the same SSP.

Figure 59 Sample TRAVER output for a national call (returned number on the same SSP)

```

>traver l 7226962 n cdn na 6136221243 ainres r02 ar 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 KSETLINE
HOST 00 1 06 10 2 DN Y 7226962 COMKODAK 0 0 613 (3WC) (MSB) $ MBS
TABLE DNATTRS
TUPLE NOT FOUND

```

Figure 59 Sample TRAVER output for a national call (returned number on the same SSP) (Continued)

```

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 6 COL L 1
TABLE XLAMAP
. CDNPUB PXDK ( XLA AINPUB)$
TABLE IBNXLA: XLANAME AINPUB
TUPLE NOT FOUND
DEFAULT FROM TABLE XLANAME:
AINPUB
      (NET N N 0 N NDGT N N GEN ( LATTR 862 613_AIN1_862 L613_LATA1_0)
      (EA GTE Y 9) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
862 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN1_862 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN1_862 FR01 613 AIN1 TOPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
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.
. 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 $

```

Figure 59 Sample TRAVER output for a national call (returned number on the same SSP) (Continued)

```

. SUBTABLE HNPACODE
. 613 613 HNPA 0
. 622 622 DN 613 622
TABLE TOFCNAME
613 622 $
TABLE DNINV
613 622 1243 P HOST 01 0 19 19 T1
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
613 622 1243
(PUBLIC (NONUNIQUE ) $)$ $
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 ( 17) OPTL N N
. SUBTABLE LCASCR
. 613 613
TABLE LCASCRCN
613 L613 ( 17) OPTL N N
. SUBTABLE LCASCR
. 622 623
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
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

```

Figure 59 Sample TRAVER output for a national call (returned number on the same SSP) (Continued)

```

1 LINE                      6136221243          ST

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

4.2.3 National call - returned number returned is in the user HNP

The command line assumes that the originator is an IBN line 6137226962 and the CalledPartyID = National Number 6134257320.

TRAVER 60 provides a sample TRAVER output for a national call, when the returned number is in the user HNP.

Figure 60 Sample TRAVER output for a national call (returned number is in on the user HNP)

```

>traver 1 7226962 n cdn na 6134257320 ainres r02 ar 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 KSETLINE
HOST 00 1 06 10 2 DN Y 7226962 COMKODAK 0 0 613 (3WC) (MSB) $ MBS
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 6 COL L 1
TABLE XLAMAP
. CDNPUB PXDK ( XLA AINPUB)$
TABLE IBNXLA: XLANAME AINPUB
TUPLE NOT FOUND
DEFAULT FROM TABLE XLANAME:

```


Figure 60 Sample TRAVER output for a national call (returned number is in on the user HNP) (Continued)

```

AINPUB
  (NET N N 0 N NDGT N N GEN ( LATTR 862 613_AIN1_862 L613_LATA1_0)
  (EA GTE Y 9) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
862 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN1_862 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN1_862 FR01 613 AIN1 TOPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
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.
. 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
. 425 425 DN 613 425
TABLE TOFCNAME
613 425 $
TABLE DNINV
613 425 7320 L HOST 01 0 09 09
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

```

Figure 60 Sample TRAVER output for a national call (returned number is in on the user HNP) (Continued)

```

. 613 613
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. 425 427
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
TABLE TRIGGRP
CUSTTRIGGRP_CDP INFOANAL
. CDP CODE ( DG CDPDIG)$ NIL
Trigger AIN CDP CODE is applicable to customer group.
TABLE TRIGGRP
OFCTTRIGGRP_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) ( ESCOA ) ( 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                6134257320                ST

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

4.2.4 National carrier call

The command line assumes that the originator is IBN line 6137226962, the CalledPartyID = National Number 4162581234, and the PrimaryCarrierID = 0488.

TRAVER 61 provides a sample TRAVER output for a national carrier call.

Figure 61 Sample TRAVER output for a national carrier call

```

>traver 1 7226962 n cdn na 4162581234 tns na cic 0488 ainres r02 ar b
Warning: Routing characteristics are present.

```

Figure 61 Sample TRAVER output for a national carrier call (Continued)

```

        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. TNSPUB (CDN NA (TNS NA)$) ( BC 3_1KHZ (CDN NA) (TNS NA)$)$
TABLE KSETLINE
HOST 00 1 06 10 2 DN Y 7226962 COMKODAK 0 0 613 (3WC) (MSB) $ MBS
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 1 RPT
TABLE XLAMAP
. TNSPUB PXDK ( XLA AINPUB)$
TABLE IBNXLA: XLANAME AINPUB
TUPLE NOT FOUND
DEFAULT FROM TABLE XLANAME:
AINPUB
      (NET N N 0 N NDGT N N GEN ( LATTR 862 613_AIN1_862 L613_LATA1_0)
      (EA GTE Y 9) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
862 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN1_862 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN1_862 FR01 613 AIN1 TOPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
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.
. 10488 10488 EA DD 5 P PEA1 ITT Y OFRT 900 5 20 N
. SUBTABLE AMAPRT

```

Figure 61 Sample TRAVER output for a national carrier call (Continued)

```

. 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 3
. . . S D OGEAITT
. . . N D ISUPOGITT 0 N N
. . . CND ALWAYS SK 2
. . . N D OGEAITT 15 D179 N
. . . 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 CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. . 4 9 EA DD 0 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 ( 315) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 416 416 HNPA 0
. 258 258 LRTE 719
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 719 N D ISUPITOG 0 $ Y
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
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
EA:Local override does not apply to this call.
TABLE LATAXLA
LATA1 416258 INTER INTER STD

```

Figure 61 Sample TRAVER output for a national carrier call (Continued)

```

TABLE OCCINFO
ITT 0488 EAP 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 Y
TABLE EASAC
TUPLE NOT FOUND
OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP
DEFINED
Using Equal Access (EA) route   OFRT   900 from Pretranslation
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
  900 CND EA INTNL SK 3
      S D OGEAITT
      N D ISUPOGITT 0 N N
      CND ALWAYS SK 2
      N D OGEAITT 15 D179 N
      N D ISUPOGITT 0 D179 N
TABLE OFRTMAP
. Tuple not found. Default to old index.
EXIT TABLE OFRT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 OGEAITT           4162581234           ST
2 ISUPOGITT         4162581234           ST

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

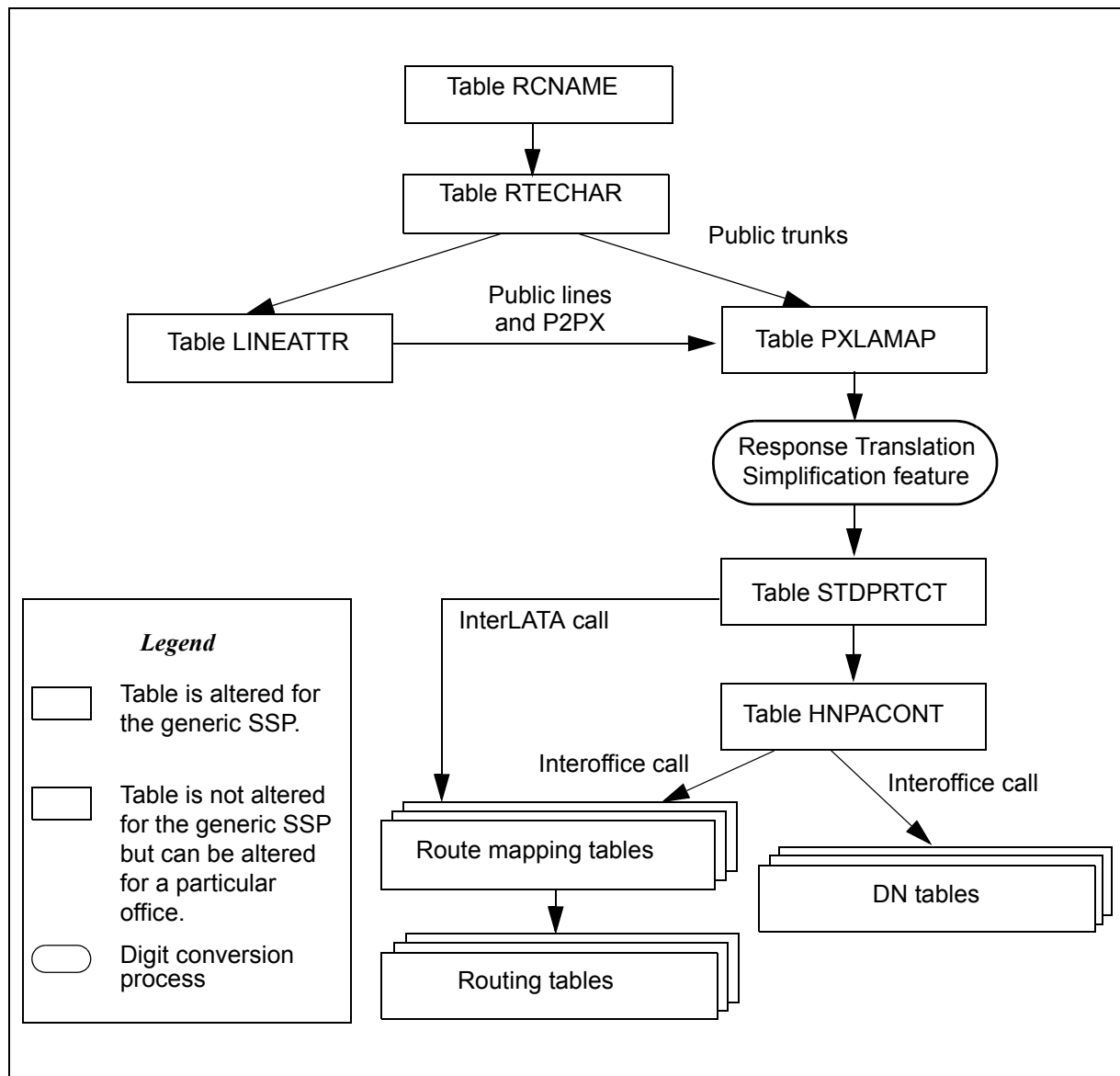
5 AIN simplified response translations for private agents

**CAUTION****Possible loss of service**

Incorrect translations can result in call failures or automatic message accounting (AMA) losses. To minimize the number of call failures, alter translations only during low-traffic periods.

The AIN response translations simplification feature has been introduced to reduce the amount of datafill required to support AIN response translation. This feature is used to convert the digits returned in the SCP response and convert them into a digit format that can reuse the triggering agent's translation datafill. See Table 42 on page 165.

Figure 62 on page 194 outlines the different tables needed for AIN simplified response translations for private agents and the relationship between these tables.

Figure 62 AIN table relationships for private agents - with simplification

For triggering private agents, the AIN Response Translations Simplification feature can be activated either in the private or in the public environment. When activated in the private environment, the feature converts the digits of the response in a format that can reuse private and public translation datafill. Whereas, when activated in the public environment AIN responses translation specific public network access datafill is required in table XLANAME and XLAMAP, but the converted digits can reuse the public translation datafill.

5.1 AIN response translations simplification in the private environment

This feature is activated by private lines and private trunks in the private environment under the following conditions:

- SOC AIN00026 is ON.
- No entry in table XLAMAP for any of the triggering agent's IBN translators (NCOS Prelim, CUSTHEAD Prelim, CUSTHEAD main).
- Option PUB_NET_ACC is datafilled in table NCOS or CUSTHEAD.

When response translations simplification is active, translations must be setup as described in Chapter 2: "AIN response translations for public agents" on page 47 . In particular, CDN L calls with OSA components do not trigger at the Operator_Services trigger unless such translations are in place.

Travers for SCP responses with subscriberNumberOperatedRequested called party numbers and PRI Setup messages with a CDN L information element (when the response translations simplification feature is active) indicate that the number has undergone ISDN digit conversion, but there is no change in the digits.

5.1.1 Option PUB_NET_ACC

Option PUB_NET_ACC is available in tables NCOS and CUSTHEAD and it has two sub values PFX_DIGITS and LINEATTR_OPT used to provision the public network access digits (e.g. 9) and a line attribute index required by the simplification feature. The option can be datafilled in either table NCOS or CUSTHEAD or both.

PFX_DIGITS is used to specify the public network access code that should be prefixed to the digits in the response to the public translation environment. A maximum of 5 digits can be specified in this parameter.

LINEATTR_OPT is used to specify the line attribute index where conversion of the 10D response into 7D, 1+7D, 10D or 1+10D, for responses where Nature_of_number = National Number, is based. The line attribute index used with this option should be the same one used by the NCOS or CUSTHEAD pretranslator used to enter public translation environment.

Note: For response simplification, option PUB_NET_ACC of table LINEATTR is mandatory. When option PUB_NET_ACC is absent, the system does not perform response simplification.

The digit conversion process of the simplification feature is based on the following steps:

- Obtain PUB_NET_ACC option from table NCOS or CUSTHEAD for the triggering agent. Precedence order is: NCOS first, CUSTHEAD second. That is, when the PUB_NET_ACC option is not datafilled for the agent's NCOS, the PUB_NET_ACC for the agent's customer group is used.
- Convert digits in the response to a public dialing format using the line attribute index obtained from PUB_NET_ACC option.
- Prefix the public network access digits obtained from the PUB_NET_ACC option in front of the digits resulting from the previous step.

It is recommended that the PUB_NET_ACC option in CUSTHEAD be used for all agents in the customer group when possible. When required, PUB_NET_ACC can be datafilled in table NCOS to provide NCOS specific overrides of the custhead value.

5.1.2 Option PUB_NET_ACC in table NCOS

Option PUB_NET_ACC is datafilled in table NCOS when a specific NCOS has a different public network access code than the one used by the other NCOSs in the customer group, or needs a different line attribute to use for conversion than the one used for the customer group.

Table 55 describes an example of IBNXLA datafill corresponding to a customer group.

Table 55 Example of IBNXLA datafill

KEY	RESULT
PKDK0 6	NET N Y 1 Y POTS Y N GEN (LATTR 80 L416_LATA1_80 L416_LATA1_80) (EA NILC Y 0) \$
PKDK1 9	NET N Y 1 Y POTS Y N GEN (LATTR 0 613_PUB_0 L613_LATA1_0) \$
CKDK 9	NET N Y 1 Y POTS Y N GEN (LATTR 80 L416_LATA1_80 L416_LATA1_80) (TOLL TDN Y)

Table 56 describes the datafill in table LINEATTR for line attributes used in Table 55.

Table 56 LINEATTR datafill

LNATTIDX	DATA
0	IBN NONE NT 0 0 NILSFC 0 NIL NIL 00 613_PUB_0 L613_LATA1_0 \$
80	IBN NONE NT 0 0 NILSFC 0 NIL NIL 00 416_PUB_80 L416_LATA1_80 \$

Table 57 describes an example of XLAPLAN datafill.

Table 57 XLAPLAN datafill

XLAPIDX	SCRNCL HSTS PRTNM ZEROMPOS RESINF OPTIONS ADMININF
416_PUB_80	ATGO 416 PUB NONE N \$ \$
613_PUB_0	ATGO 613 PUB NONE N \$ \$

Table 58 describes an example of RATEAREA datafill.

Table 58 RATEAREA datafill

RTAIDX	LCANAME MRSA LATANM ADMININF
L416_LATA1_80	L416 NIL LATA1 \$
L613_LATA1_0	L613 NIL LATA1 \$

Table 59 describes datafill needed for table NCOS in order to activate the simplification feature.

Table 59 Datafilling table NCOS with new option PUB_NET_ACC

CUSTGRP NCOS	DATA
COMKODAK 0	KDK0 0 0 (XLAS PKDK0) (CBQ 0 3 N 2) (PUB_NET_ACC 6 (LINEATTR 80 416_PUB_80 L416_LATA1_80)\$)\$
COMKODAK 1	KDK1 0 0 (XLAS PKDK1) (CBQ 0 3 N 2) (PUB_NET_ACC 9 (LINEATTR 0 613_PUB_0 L613_LATA1_0)\$)\$
COMKODAK 2	KDK2 0 0 (CBQ 0 3 N 2)

5.1.3 Option PUB_NET_ACC in table CUSTHEAD

Option PUB_NET_ACC is datafilled in table CUSTHEAD to be used for the entire customer group except the ones that have the option datafilled in table NCOS. Table 60 on page 197 describes datafill needed for table CUSTHEAD in order to activate the simplification feature.

Table 60 Datafilling table CUSTHEAD with the new option PUB_NET_ACC

CUSTNAME	CUSTXLA DGCOLNM IDIGCOL OPTIONS
COMKODAK	CXDK KDK NIL (VACTRMT 0) (EXTNCOS 0) (ACCT 5 N N) (FETXLA CUSTFEAT) (PLMXLA PXDK) (ERDT 7) (AUTH COMKODAK N N) (SUPERCNF)(OCTXLA CUSTSHRP) (ESAPXLA ESAKODAK) (PUB_NET_ACC 9 (LINEATTR 80 416_PUB_80 L416_LATA1_80)\$)\$

5.1.4 Different digit streams produced by simplification

For call types other than National Direct Dial (CDN=NA) and National Carrier Direct Dial (CDN=NA and TNS=NA), the conversion rules are based on existing dial plan conventions:

- “0” is prefixed for national number operator requested
- “011” are prefixed for international number
- “01” are prefixed for international number operator requested
- “10XXX” or “101XXXX” are prefixed for carrier access

Public network access code specified in the PUB_NET_ACC option is then prefixed to the resulting digits.

Table 61 summarizes the digits used in translation after being converted by the Response Translations Simplification feature when the triggering agent is a private line or private trunk and where call types are national direct dial and national carrier direct dial.

Table 61 Digits for private lines and trunks triggering agents

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits produced by the feature and used in translations	CDN	OSA	TNS
International number	7-15D	Not present	PFX+011+(7-15)D	IN	NIL	NIL
No address present, operator requested	0D	Not present	PFX+0-	NIL	PUBP	NIL
National number, operator requested	10D	Not present	PFX+0+(10)D	NA	PUBP	NIL
International number, operator requested	7-15D	Not present	PFX+01+(7-15)D	IN	PUBP	NIL
International number	7-15D	0XXX	PFX+10XXX+011+(7-15)D	IN	NIL	NA
Legend IN - International NA - National NIL - Not present PUBA - Carrier operator PUBP - Public operator PFX: Public network access code defined in option PUB_NET_ACC in table NCOS or CUSTHEAD.						

Table 61 Digits for private lines and trunks triggering agents (Continued)

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits produced by the feature and used in translations	CDN	OSA	TNS
No address present, operator requested	0D	0XXX	PFX+10XXX0-	NIL	PUBA	NA
National number, operator requested	10D	0XXX	PFX+10XXX+0+(10)D	NA	PUBA	NA
International number, operator requested	7-15D	0XXX	PFX+10XXX+01+(7-15)D	IN	PUBA	NA
International number	7-15D	XXXX	PFX+101XXXX+011+(7-15)D	IN	NIL	NA
No address present, operator requested	0D	XXXX	PFX+101XXXX0-	NIL	PUBA	NA
National number, operator requested	10D	XXXX	PFX+101XXXX+0+(10)D	NA	PUBA	NA
International number, operator requested	7-15D	XXXX	PFX+101XXXX+01+(7-15)D	IN	PUBA	NA
Legend IN - International NA - National NIL - Not present PUBA - Carrier operator PUBP - Public operator PFX: Public network access code defined in option PUB_NET_ACC in table NCOS or CUSTHEAD.						

For responses where CDN=NA, the conversion of the 10D (contained in the response) to a dial format is based on existing translation datafill in tables LCASCRCN and HNPACONT. The resulting digits are in 7D, 1+7D, 10D, or 1+10D format, being consistent with the originator's dialing plan. STS and LCANAME defined in the line attribute index in option PUB_NET_ACC are used as entries in tables HNPACONT and LCASCRCN.

When carrier ID is returned in the response, the carrier access digits 10XXX or 101XXXX are prefixed before the converted digits.

The Local Exchange (LEC) carrier (carrier ID = 0110) is handled as if no carrier ID were present, therefore no carrier access digits are prefixed. The conversion is carried out as shown in Table 62.

The Operating Telephone Company (OTC) carrier is treated as a valid carrier ID, therefore carrier access digits are prefixed.

The National Number conversion process is based on the following logic:

- Table HNPACONT datafill is used to determine when the 10D number should be converted to 7D or 10D. The conversion produces 7D (by removing the NPA) when one of the following conditions are met:
 - Indexing HNPACODE with the 10D called number results in VCT HNPI.
 - Originator's NPA is equal to the NPA of the 10D called number, and the HNPACODE subtable contains no entry for the NPA of the called number.
- Table LCASCRCN datafill is used to determine when a call is local or toll.
 - When NPA and NXX of the called number are found in LCASCRCN then the call is considered as local.
 - When NPA is not found but the originator's NPA is equal to the called number's NPA, a check is made to see when the called NXX is datafilled in subtable LCASCR. When it is found, then it is local. This is to handle the case where a 7D local dialling plan exists within a NPA, and the NPA is not datafilled in LCASCRCN.
 - Otherwise, it is toll.
- Using PFXFOR10 of table LCASCRCN and the local/toll result from step 2, the called number is modified as follows:

Table 62 Digit streams for call number modifications

Digits after step 1	Local or Toll	PFX FOR 10	Originator's NPA = Called NPA	Result when no Carrier ID is present or Carrier ID = LEC carrier	Result when 0XXX Carrier ID is present	Result when XXXX Carrier ID is present
7D	Local	Y	Not Applicable	PFX+7D	PFX+10XXX+ (7)D	PFX+101XXXX+ (7)D
7D	Local	N	Not Applicable	PFX+7D	PFX+10XXX+ (7)D	PFX+101XXXX+ (7)D
7D	Toll	Y	Not Applicable	PFX+7D	PFX+10XXX+ (7)D	PFX+101XXXX+ (7)D
7D	Toll	N	Not Applicable	PFX+1+7D	PFX+10XXX+1+ (7)D	PFX+101XXXX+1+ (7)D
10D	Local	Y	N	PFX+1+10D	PFX+10XXX+1+ (10)D	PFX+101XXXX+1+ (10)D

Table 62 Digit streams for call number modifications (Continued)

Digits after step 1	Local or Toll	PFX FOR 10	Originator's NPA = Called NPA	Result when no Carrier ID is present or Carrier ID = LEC carrier	Result when 0XXX Carrier ID is present	Result when XXXX Carrier ID is present
10D	Local	Y	Y	PFX+7D	PFX+10XXX+ 7D	PFX+101XXXX+ 7D
10D	Local	N	Not Applicable	PFX+10D	PFX+10XXX+ (10)D	PFX+101XXXX+ (10)D
10D	Toll	Y	Not Applicable	PFX+1+10D	PFX+10XXX+1+ (10)D	PFX+101XXXX+1+ (10)D
10D	Toll	N	Not Applicable	PFX+1+10D	PFX+10XXX+1+ (10)D	PFX+101XXXX+1+ (10)D

5.2 Residential lines

In most configurations, residential (RES) lines do not need a public network access code to access the public environment. In this case, they do not require the PUB_NET_ACC option in table CUSTHEAD or NCOS. When the RES lines are configured such that a public network access code is used, then PUB_NET_ACC option is required.

5.3 Response translations simplification in the public environment for triggering private agents

Simplification feature can be activated in the public environment instead of being activated in the private environment. Table XLAMAP is used to provide access the public environment as described in Section 4.1.4 and then simplification feature is activated to convert the digits used in the public environment into a format that can reuse public pretranslator used for public translation.

The option of activating simplification feature in the public environment will avoid additional datafill required for response translations in the public environment as described in Section 4.1.7 and additional datafill required to support response translations in the private environment are still required.

Activating simplification feature in the public environment can be done under the following conditions:

- Feature AIN00026 SOC is ON.
- The conditions to activate the feature in the private environment are not satisfied.
- No entry in table PXLAMAP corresponding to the public pretranslator used in the public environment and the RCNAME derived from the response; or an entry exist in table PXLAMAP with the PREFIX selector present.

Note that simplification feature is activated only once. When it is activated in the private environment, it won't be activated in the public environment regardless of whether an entry exist in table PXLAMAP or not.

5.3.1 Table PXLAMAP

For private lines and trunks, when a simplification feature is to be activated in the public environment, no additional datafill is required for table PXLAMAP. In fact, simplification feature converts the digits used in response translations in the public environment into a format that can use the originator's pretranslator used in the public environment. No exceptions are produced.

Simplification feature supposes that digits are in the format described in Table 42 on page 165. This means that no digit manipulation should be done prior to activate simplification feature such as setting up prefix fence or deleting or adding digits.

Simplification feature produces the same digit streams produced when the feature is activated in the private environment without public network access code prefixed.

Table 63 summarizes the digits used in translation after being converted by the response translations simplification feature in the public environment when the triggering agent is a private line or private trunk and where call types are national direct dial and national carrier direct dial.

Table 63 Digits for private lines and trunk triggering agents in the public environment

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits produced by the feature and used in translations	CDN	OSA	TNS
International number	7-15D	Not present	011+(7-15)D	IN	NIL	NIL
No address present, operator requested	0D	Not present	0-	NIL	PUBP	NIL

Table 63 Digits for private lines and trunk triggering agents in the public environment (Continued)

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits produced by the feature and used in translations	CDN	OSA	TNS
National number, operator requested	10D	Not present	0+(10)D	NA	PUBP	NIL
International number, operator requested	7-15D	Not present	01+(7-15)D	IN	PUBP	NIL
International number	7-15D	0XXX	10XXX+011+(7-15)D	IN	NIL	NA
No address present, operator requested	0D	0XXX	10XXX0-	NIL	PUBA	NA
National number, operator requested	10D	0XXX	10XXX+0+(10)D	NA	PUBA	NA
International number, operator requested	7-15D	0XXX	10XXX+01+(7-15)D	IN	PUBA	NA
International number	7-15D	XXXX	101XXXX+011+(7-15)D	IN	NIL	NA
No address present, operator requested	0D	XXXX	101XXXX0-	NIL	PUBA	NA
National number, operator requested	10D	XXXX	101XXXX+0+(10)D	NA	PUBA	NA
International number, operator requested	7-15D	XXXX	101XXXX+01+(7-15)D	IN	PUBA	NA
Legend IN - International NA - National NIL - Not present PUBA - Carrier operator PUBP - Public operator						

For responses where CDN=NA, the conversion of the 10D (coming in the response) to a dial format is based on existing translation datafill in tables LCASCRN and HNPACONT. The resulting digits are in 7D, 1+7D, 10D, or 1+10D format, being consistent with the originator's dialing plan. STS and

LCANAME defined in the line attribute index used to access the public environment are used as entries in tables HNPACONT and LCASCRCN.

When carrier ID is returned in the response, the carrier access digits 10XXX or 101XXXX are prefixed before the converted digits.

The Operating Telephone Company (OTC) carrier is treated as a valid carrier ID and carrier access digits are prefixed.

For the Local Exchange (LEC) carrier (carrier ID = 0110), no carrier access digits are prefixed. In this case, digit conversion is carried out as if no carrier ID were present, as shown in Table 64.

The National Number conversion process is based on the following logic:

1. Table HNPACONT datafill is used to determine when the 10D number should be converted to 7D or 10D. The conversion produces 7D (by removing the NPA) when one of the following conditions are met:
 - Indexing HNPACODE with the 10D called number results in VCT HNPI.
 - Originator's NPA is equal to the NPA of the 10D called number, and the HNPACODE subtable contains no entry for the NPA of the called number.
2. Table LCASCRCN datafill is used to determine when a call is local or toll.
 - When NPA and NXX of the called number are found in LCASCRCN then the call is considered as local.
 - When NPA is not found but the originator's NPA is equal to the called number's NPA, a check is made to see when the called NXX is datafilled in subtable LCASCR. When it is found, then it is local. This

is to handle the case where a 7D local dialling plan exists within a NPA, and the NPA is not datafilled in LCASCRN.

- Otherwise, it is toll.
3. Using PFXFOR10 of table LCASCRN and the local/toll result from step 2, the called number is modified as follows:

Table 64 Called number modification

Digits after step 1	Local or Toll	PFX FOR10	Originator's NPA = Called NPA	Result when no Carrier ID is present or Carrier ID = LEC carrier	Result when 0XXX Carrier ID is present	Result when XXXX Carrier ID is present
7D	Local	Y	Not Applicable	7D	10XXX+(7)D	101XXXX+(7)D
7D	Local	N	Not Applicable	7D	10XXX+(7)D	101XXXX+(7)D
7D	Toll	Y	Not Applicable	7D	10XXX+(7)D	101XXXX+(7)D
7D	Toll	N	Not Applicable	1+7D	10XXX+1+(7)D	101XXXX+1+(7)D
10D	Local	Y	N	1+10D	10XXX+1+(10)D	101XXXX+1+(10)D
10D	Local	Y	Y	7D	10XXX+7D	101XXXX+7D
10D	Local	N	Not Applicable	10D	10XXX+(10)D	101XXXX+(10)D
10D	Toll	Y	Not Applicable	1+10D	10XXX+1+(10)D	101XXXX+1+(10)D
10D	Toll	N	Not Applicable	1+10D	10XXX+1+(10)D	101XXXX+1+(10)D

5.3.2 Optional removal of NPA where 1+10-digit dialing is mandatory

Where CDN=NA, AIN Response Translation Simplification removes the NPA of the called number if all of the following conditions are true:

- SOC AIN00026 is ON.
- The call is local.
- Option PFXFOR10 is TRUE in Table LCASCRN or Table LCAINFO.
- The NPA of the SCP number is the same as the originator's NPA.

Removal of NPA represents a problem in areas where 1+10-digit dialing is mandatory for toll and local calls. The removal of NPA results in a 7-digit number, and the call is sent to treatment. This is an undesirable effect.

Removal of NPA is made optional by the addition of field STRIPNPA in Table LCASRCN and Table LCAINFO. When STRIPNPA is set to N, the NPA remains. When it is set to 'Y', the NPA is removed. This is illustrated in Table 65, and the applicable conditions are shown in bold:

Table 65 Digit Conversion with STRIPNPA

Digits after Step 1 (HNPACONT)	Local/ Toll	PFXFOR10	Originator's NPA = Called NPA	STRIPNPA	Result
7D	Local	Y	Not Applicable	Not Applicable	7D
7D	Local	N	Not Applicable	Not Applicable	7D
7D	Toll	Y	Not Applicable	Not Applicable	7D
7D	Toll	N	Not Applicable	Not Applicable	1+7D
10D	Local	Y	N	Not Applicable	1+10D
10D	Local	Y	Y	N	10D
10D	Local	Y	Y	Y	7D
10D	Local	N	Not Applicable	Not Applicable	10D
10D	Toll	Y	Not Applicable	Not Applicable	1+10D
10D	Toll	N	Not Applicable	Not Applicable	1+10D

5.3.3 PODPATTR interactions with response translation simplification

See Section 3.2.6 "PODPATTR Interactions with response translation simplification" on page 115.

5.3.4 TRAVER enhancements for AIN response translations simplification

Option DIGCONV is added to TRAVER to support response translations simplification feature for private lines and private trunks.

The DIGCONV parameter is designed to be used during the operating company's datafill transition.

While the Response Translations Simplification feature is deactivated or “idle”, the operating company can specify that it would like to see the results of a digit conversion in a TRAVER via use of the DIGCONV parameter. TRAVERS performed without this parameter will not invoke the feature. Hence the operating company has the ability to determine the affect of this feature without the need to affect call processing. It also preserves the ability to produce a TRAVER for current datafill.

The DIGCONV parameter is an optional parameter that falls under the AINRES parameter (that is itself optional).Figure 63 shows how the DIGCONV parameter can be used in a TRAVER.

Figure 63 TRAVER with the DIGCONV parameter

```
TRAVER 1 7224531 N CDN NA 6137220000 AINRES R01 AR DIGCONV B
```

5.4 Sample TRAVERs for private lines and trunks with simplification

This section contains TRAVER examples of various call types during AIN response translations with simplification feature activated.

5.4.1 Simplification feature activated in the private environment

In this section, the traver examples shown in Chapter 4: “AIN response translations for private agents” on page 151 are reproduced with simplification feature activated in the private environment.

5.4.1.1 Additional data required for AIN response translations to activate simplification feature in the private environment

Entries in table XLAMAP and PXLAMAP described respectively in Figure 53 on page 182 and Figure 54 on page 182 are removed. Entry in HNPACONT table Figure 58 on page 183 is changed and replaced with VCT HNPI as described in Figure 65.

Figure 64 Table HNPACONT

```
TABLE HNPACONT
613 20 15 ( 0 ) ( 1 ) ( 0 ) ( 0 ) 0
. SUBTABLE HNPACODE
. 613 613 VCT HNPI
```

Table CUSTHEAD is changed to include option PUB_NET_ACC as shown in Figure 65.

Figure 65 Table CUSTHEAD

CENTESN	CESN	CEN	NIL
(VACTRMT 0)	(EXTNCOS 0)	(ACCT 5 N N)	(PLMXLA CESN) (AUTH CESNAUTH N N) (ACR AUTH 0)
(PUB_NET_ACC 9 (LINEATTR 500) \$) \$			

5.4.1.2 National call - number returned is within user HNP

The command line assumes that the originator is an IBN line 6137226962 and the CalledPartyID = National Number 6134257320. TRAVER 66 provides a sample TRAVER output for a national call when the number returned is in the user HNP.

Figure 66 Sample TRAVER output for a national call (number returned is in user HNP)

```
>traver 1 7226962 n cdn na 6134257320 ainres r02 ar 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 KSETLINE
HOST 00 1 06 10 2 DN Y 7226962 COMKODAK 0 0 613 (3WC) (MSB) $ MBS
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 6 COL L 1
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
. PUB_NET_ACC Option present in table CUSTHEAD.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 94257320
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
```

Figure 66 Sample TRAVER output for a national call (number returned is in user HNP) (Continued)

```

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.
. 42 44 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
. 425 425 HRTE 1
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 1 N D OTMF1 0 N N
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
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
. 425 427
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
TABLE FNPA7DIG
TUPLE NOT FOUND
TABLE TRIGGRP
CUSTTRIGGRP_CDP INFOANAL

```

Figure 66 Sample TRAVER output for a national call (number returned is in user HNP) (Continued)

```

. 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 +++

DIGIT TRANSLATION ROUTES

1 OTMF1                      4257320          ST

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

5.4.1.3 National call when the number returned is on the same SSP

The command line assumes that the originator is an IBN line 6137226962 and the CalledPartyID = National Number 6136221243. TRAVER 67 provides a sample TRAVER output for a national call when the returned number is on the same SSP.

Figure 67 Sample TRAVER output for a national call (returned number is on the same SSP)

```

>traver 1 7226962 n cdn na 6136221243 ainres r02 ar 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 KSETLINE
HOST 00 1 06 10 2 DN Y 7226962 COMKODAK 0 0 613 (3WC) (MSB) $ MBS
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND

```


Figure 67 Sample TRAVER output for a national call (returned number is on the same SSP) (Continued)

```

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 6 COL L 1
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
. PUB_NET_ACC Option present in table CUSTHEAD.
. NOTE: ISDN Digit Conversion has been performed:
.     Resulting digits are: 96221243
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.
. 622 632 N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT

```

Figure 67 Sample TRAVER output for a national call (returned number is on the same SSP) (Continued)

```

613 Y 999 1 ( 316) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 622 622 DN 613 622
TABLE TOFCNAME
613 622 $
TABLE DNINV
613 622 1243 P HOST 01 0 19 19 T1
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
613 622 1243
(PUBLIC (NONUNIQUE ) $)$ $
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
. 622 623
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
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) ( ESCOA ) ( 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                6136221243                ST

```

Figure 67 Sample TRAVER output for a national call (returned number is on the same SSP) (Continued)

```

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

5.4.1.4 National carrier call

The command line assumes that the originator is an IBN line 6137226962, the CalledPartyID = National Number 4162581234, and the PrimaryCarrierID = 0488. TRAVER 68 provides a sample TRAVER output for a national carrier call.

Figure 68 Sample TRAVER output for a national carrier call

```

>traver 1 7226962 n cdn na 4162581234 tns na cic 0488 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 KSETLINE
HOST 00 1 06 10 2 DN Y 7226962 COMKODAK 0 0 613 (3WC) (MSB) $ MBS
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 1 RPT
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
. PUB_NET_ACC Option present in table CUSTHEAD.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 91048814162581234
TABLE IBNXLA: XLANAME PXDK
TUPLE NOT FOUND
Default is to go to next XLA name.
TABLE XLAMAP

```

Figure 68 Sample TRAVER output for a national carrier call (Continued)

```

. 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.
. 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 OFRTMAP
. . . Tuple not found. Default to old index.
. . 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
TABLE PXLAMAP
. . Tuple not found. Default to old pretranslator name.
. 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

```

Figure 68 Sample TRAVER output for a national carrier call (Continued)

```
. 416 416 HNPA 0
. 258 258 LRTE 719
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 719 N D ISUPITOG 0 $ Y
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNPA 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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 ISUPITOG          4162581234          ST

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

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

5.4.2 Additional data required for AIN response translations to activate simplification feature in the public environment

Entries in table PXLAMAP described respectively in Figure 56 on page 182 are removed. Changes in Table CUSTHEAD to include option PUB_NET_ACC as shown in Figure 65 on page 208 are also removed.

5.4.2.1 National call when the number returned is on the same SSP

The command line assumes that the originator is an IBN line 6137226962 and the CalledPartyID = National Number 6136221243. TRAVER 69 provides a sample TRAVER output for a national call when the returned number is on the same SSP.

Figure 69 Sample TRAVER output for a national call (returned number is on the same SSP)

```
>traver 1 7226962 n cdn na 6136221243 ainres r02 ar b
```

Figure 69 Sample TRAVER output for a national call (returned number is on the same SSP) (Continued)

```

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 KSETLINE
HOST 00 1 06 10 2 DN Y 7226962 COMKODAK 0 0 613 (3WC) (MSB) $ MBS
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 6 COL L 1
TABLE XLAMAP
. CDNPUB PXDK ( XLA AINPUB)$
TABLE IBNXLA: XLANAME AINPUB
TUPLE NOT FOUND
DEFAULT FROM TABLE XLANAME:
AINPUB
        (NET N N 0 N NDGT N N GEN ( LATTR 862 613_AIN1_862 L613_LATA1_0)
        (EA GTE Y 9) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
862 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN1_862 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN1_862 FR01 613 AIN1 TOPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.      Resulting digits are: 6221243
TABLE STDPRTCT
AIN1 ( 1) ( 0) 2
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE

```

Figure 69 Sample TRAVER output for a national call (returned number is on the same SSP) (Continued)

```

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
. 622 622 DN 613 622
TABLE TOFCNAME
613 622 $
TABLE DNINV
613 622 1243 P HOST 01 0 19 19 T1
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
613 622 1243
(PUBLIC (NONUNIQUE ) $)$ $
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
. 622 623
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
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) ( ESCOA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.

```

Figure 69 Sample TRAVER output for a national call (returned number is on the same SSP) (Continued)

```

AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.

```

```

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

```

DIGIT TRANSLATION ROUTES

```

```

1 LINE                      6136221243          ST

```

```

TREATMENT ROUTES.  TREATMENT IS: GNCT

```

```

1 *OFLO

```

```

2 LKOUT

```

```

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

5.4.2.2 National call when the number returned is within the home numbering plan of the user

The command line assumes that the originator is an IBN line 6137226962 and the CalledPartyID = National Number 6134257320. TRAVER 70 provides a sample TRAVER output for a national call when the returned number is in the user HNP.

Figure 70 Sample TRAVER output for a national call (returned number is in the user HNP)

```

>traver 1 7226962 n cdn na 6134257320 ainres r02 ar 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 KSETLINE
HOST 00 1 06 10 2 DN Y 7226962 COMKODAK 0 0 613 (3WC) (MSB) $ MBS
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

```


Figure 70 Sample TRAVER output for a national call (returned number is in the user HNP) (Continued)

```

COMKODAK PXDK CXDK FTCOMM 0 KDK
TABLE DIGCOL
KDK 6 COL L 1
TABLE XLAMAP
. CDNPUB PXDK ( XLA AINPUB)$
TABLE IBNXLA: XLANAME AINPUB
TUPLE NOT FOUND
DEFAULT FROM TABLE XLANAME:
AINPUB
      (NET N N 0 N NDGT N N GEN ( LATTR 862 613_AIN1_862 L613_LATA1_0)
      (EA GTE Y 9) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
862 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN1_862 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN1_862 FR01 613 AIN1 TOPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.      Resulting digits are: 4257320
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.
. 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
. 425 425 HRTE 1
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
.      1 N D OTMF1 0 N N
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is resident.

```

Figure 70 Sample TRAVER output for a national call (returned number is in the user HNP) (Continued)

```

LNP Info: Called DN has native NPANXX.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCR
. 425 427
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
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 +++

DIGIT TRANSLATION ROUTES

1 OTMF1                      4257320          ST

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

5.4.2.3 National carrier call

The command line assumes that the originator is an IBN line 4167226962, the CalledPartyID = National Number 4162581234, and the PrimaryCarrierID = 0488. TRAVER 71 provides a sample TRAVER output for a national carrier call.

Figure 71 Sample TRAVER output for a national carrier call

```
>traver 1 7226962 n cdn na 4162581234 tns na cic 0488 ainres r02 ar b
```

Figure 71 Sample TRAVER output for a national carrier call (Continued)

```

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 KSETLINE
HOST 00 1 06 10 2 DN Y 7226962 COMKODAK 0 0 613 (3WC) (MSB) $ MBS
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 1 RPT
TABLE XLAMAP
. TNSPUB PXDK ( XLA AINPUB)$
TABLE IBNXLA: XLANAME AINPUB
TUPLE NOT FOUND
DEFAULT FROM TABLE XLANAME:
AINPUB
        (NET N N 0 N NDGT N N GEN ( LATTR 862 613_AIN1_862 L613_LATA1_0)
        (EA GTE Y 9) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
862 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN1_862 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN1_862 FR01 613 AIN1 TOPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.      Resulting digits are: 1048814162581234
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

```

Figure 71 Sample TRAVER output for a national carrier call (Continued)

```

DOCUMENTATION.
. 10488 10488 EA DD 5 P PEA1 ITT Y OFRT 900 5 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 3
. . S D OGEAITT
. . N D ISUPOGITT 0 N N
. . CND ALWAYS SK 2
. . N D OGEAITT 15 D179 N
. . N D ISUPOGITT 0 D179 N
. . EXIT TABLE OFRT
TABLE PXLAMAP
. . Tuple not found. Default to old pretranslator name.
. 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
. 416 416 HNPA 0
. 258 258 LRTE 719
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 719 N D ISUPITOG 0 $ Y
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNPA 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

```

Figure 71 Sample TRAVER output for a national carrier call (Continued)

```
EA:Local override does not apply to this call.
TABLE LATA1
LATA1 416258 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 Y
TABLE EASAC
TUPLE NOT FOUND
OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP
DEFINED
Using Equal Access (EA) route OFRT 900 from Pretranslation
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
900 CND EA INTNL SK 3
S D OGEAITT
N D ISUPOGITT 0 N N
CND ALWAYS SK 2
N D OGEAITT 15 D179 N
N D ISUPOGITT 0 D179 N
TABLE OFRTMAP
. Tuple not found. Default to old index.
EXIT TABLE OFRT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 OGEAITT 4162581234 ST
2 ISUPOGITT 4162581234 ST

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

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

Part I Billing

Part I: “Billing” consists of the following:

Chapter 6: “Billing” on page 227.

Chapter 7: “AMA structures and modules” on page 275.

6 Billing

AIN billing records are generated for all AIN Service Enablers triggers and events, including those for toll-free service and Send_To_Resource. Agents are supported as described in Chapter 4: “Agent support” on page 117.

The Bellcore AMA format (BAF) recording for advanced intelligent network (AIN) is used as defined in *AINGR: Switching Systems*, Bellcore, GR-1298-CORE, Issue 4, September 1997.

The DMS-100 SSP currently produces BAF records for AIN calls as specified by the service control point (SCP) and switch-based translations. The presence of an AMA service logic program identification (AMAslpID) parameter in a response message overrides switch-based AMA, and invokes AIN AMA recording. Switch-based call type is mapped into the AIN AMA structure (structure codes 0220 and 0221). Additional AMA information provided by the SCP as well as AMA information encountered in service switching point (SSP) translations can be appended to the base AMA structure in the form of modular codes. When the SCP response message does not contain an AMAslpID parameter, normal switch-based AMA recording applies to the call. When translations do not determine a base AMA call type, the default AIN call type (047) is used.

Note: AIN recording applies when there is an AMAslpID in a response message. There are however, exceptions when the call goes to treatment. See Table 70 on page 236.

6.1 Billing Areas

The following areas are discussed in this chapter:

- Call Type Codes
- structure record generation
- TCAP related AMA
- switch-based modules
- AMA affecting parameters
- AMA for AIN default routing

- Send_To_Resource billing
- Offer_Call billing
- double carrier access record suppression
- alternate carrier routing
- Collect_Information message
- Create_Call message

6.1.1 Call Type Codes

An AIN default Call Type Code (047) is created after a Continue, Disconnect, or Send_To_Resource response for the following triggers and events:

- trigger SDS
- O_Called_Party_Busy trigger and event
- O_No_Answer trigger and event
- Network_Busy event
- trigger Channel_Setup_PRI
- T_Busy and T_No_Answer triggers and events
- Collect_Info message
- Offer_Call message

The information from translations and the originating agent does not affect the Call Type Code value in the AMA record. However, when local area screening and rate areas are not set up correctly, local calls can be interpreted as direct-dialed, resulting in an incorrect Call Code 006 “Station Paid”.

The Call Type Code produced after an SDS trigger and an Analyze_Route response is based on the default AIN Call Type Code or switch-based translations.

When the SDS line attribute feature activates, the Call Type Code comes from the datafill value in the feature table.

6.1.2 Structure record generation

The originating structure record generation function generates the appropriate AIN records for AMA billing based upon the parameters that are received by the SSP and provides the population criteria for these records in the originating call model.

6.1.2.1 Product view

The structure record generation function implements the Originating Structure Record Generation FS.

6.1.2.2 Recording for O_No_Answer and O_Called_Party_Busy triggers and events

Encountering one of these triggers in a call indicates a new call portion that causes a new record to be generated and populated.

Additional AMA records are generated when the O_Called_Party_Busy or O_No_Answer events are encountered.

A separate AMA record is generated when one of the following situations occurs:

- an Analyze_Route response (with AMAslpID) is received following an O_Called_Party_Busy or O_No_Answer EDP-R
- a Continue response (with AMAslpID) is received following an O_Called_Party_Busy or O_No_Answer EDP-R
- a Send_To_Resource message in a Response package (with AMAslpID) is received following an O_Called_Party_Busy or O_No_Answer EDP-R

Parameters AMAMeasure and AMAslpID are processed in a Send_To_Resource message in a Conversation package. No other billing parameters are considered in a conversation package.

When the call reroutes after encountering an O_Called_Party_Busy or O_No_Answer trigger, all previous AMA records are marked as Unanswered. See Section 6.4.2 , “Completion indicator field,” on page 234, for more details.

6.1.2.3 Recording for T_Busy, T_No_Answer and Network_Busy triggers and events

Encountering one of these events or triggers in a call indicates a new call portion that causes a new record to be generated and populated.

When a NEL event reroutes the call, the AMA record produced for the response that armed the NEL event is marked as Unanswered. See Section 6.4.2 , “Completion indicator field,” on page 234, for more details.

6.1.2.4 Originating DN

The billing records generated by routing attempt responses (for example, Analyze Route or Forward Call) received from the SCP in response to an

O_Called_Party_Busy or an O_No_Answer event have the originating DN field populated as follows:

- Calling Party DN - when initially the NEL is received with Analyze Route in response to trigger Off_Hook_Delay
- SDS number - when initially the NEL is received with Analyze Route in response to an Info_Analyzed query
- TAT DN - when initially the NEL is received with Forward Call in response to a Termination Attempt Trigger

6.1.2.5 Recording for Prefix triggers and events

The AIN Service Enablers trigger prefix feature enhances AIN Service Enablers trigger detection point (TDP) processing, by creating four triggers: Specified_Carrier, One_Plus_Prefix, International, and Operator_Services. The term Prefix triggers indicates the four triggers created by this feature.

Three of the Prefix triggers: (One_Plus_Prefix, International, and Operator_Services) can be encountered based on a prefix dialed by the customer before the main digit string or based on prefix information received in an SCP/Adjunct Response message. Trigger Specified_Carrier is encountered based on a carrier access code (CAC) prefix dialed by the customer before the main digit string. Trigger Specified_Carrier can be encountered on an incoming trunk using the carrier selection information (CSI) Specified_Carrier digit string. Info_Analyzed is the TDP for these Prefix triggers.

AIN AMA produces records for these triggers according to GR-1298-CORE requirements for non-SDS Info_Analyzed triggers. Messages sent by the SCP in response to these triggers (with parameter AMAslpID) cause existing records to merge into AIN records. When there is no existing record, the system generates a new AIN record. The generated structure code is 0220 when parameter AMAslpID is present. When no AMAslpID is present, record generation is based on switched-based AMA rules.

6.2 TCAP related AMA

The TCAP-related AMA function implements the TCAP-related AMA FS.

6.2.1 Overview

The TCAP related AMA function defines the SCP based modules that can be appended to a billing record and also defines the TCAP parameters received in an SCP or adjunct response message that causes the individual modules to be appended.

Two TCAP parameters are supported:

- AMAMeasure
- AMAMeasurement

The reply sent from the SCP can contain the above optional parameters that are utilized by the SSP billing function. Table 66 illustrates the parameters and the associated modules implementation.

Table 66 AIN AMA recording parameters

SCP parameters	Module name	Module number
AMAMeasure	Resource timing	Module 290
AMAMeasurement	N/A	Module 290

6.2.2 AMAMeasure parameter

Parameter AMAMeasure describes the request for the SSP to make a duration time measurement that measures how long the user is connected to a resource that is located either within the SSP or at an IP. When this parameter with the value of “connectTimeRecordedDestinationSSP” along with the AMAslpID parameter is received in a Send_To_Resource message by the SSP, the SSP creates the Resource Timing Module.

The AMAMeasure parameter is sent from the SCP to the SSP in the Send_To_Resource message. Values of “connectTimeRecordedDestinationSSP” or “connectTimeRecordedDestinationSCP” indicate that the SSP should measure the duration time the call is connected to an Intelligent Peripheral (IP) or an internal SSP resource. This timing for a connection to an IP starts when the SSP receives a CONNect message from the IP, and ends when one of the following events occur: On-hook from calling party, SSP sends a clearing message, or the SSP receives a clearing message. When timing for connection to an internal resource is to be recorded, the SSP measures the duration time associated with the actual connection of the calling party to the internal resource.

When the value of the AMAMeasure parameter in the Send_To_resource message is “connectTimeRecordedDestinationSSP” (and an AMAslpID was sent), the SSP records the duration timing in the Resource Timing Module (MC 290).

When the value of the AMAMeasure parameter is “connectTimeRecordedDestinationSCP”, the SSP returns the timing information to the SCP in the AMAMeasurement parameter of the Resource_Clear message. The AMAslpID is not needed for this timing to take

place and be returned to the SCP. In fact, the AMAslpID is ignored by the DMS switch when it is included with the AMAMeasure parameter value of “connectTimeRecordedDestinationSCP”

The AMAMeasure parameter is processed in both a Response package and in a Send_To_Resource message in a Conversation Package. It is controlled by SOC option AIN00220.

The resource timing module 290 is defined for AMA in both AIN Essentials and AIN Service Enablers.

6.2.2.1 Module code 290

Module Code 290 is appended to AIN AMA records when the SSP has received a Send_To_Resource (STR) message with an AMAslpID and an AMAMeasure with a value of “connectTimeRecordedDestinationSSP”. The SSP records the duration of a connection to a resource (IP or internal). Module code 290 consists of the fields shown in Table 67. Since multiple STR messages can be received by the SSP in one call leg, the resource timing module (MC 290) must be repeated.

Table 67 Resource timing module 290

Information	Table number	Number of characters
Module Code	88	4
Service Logic Identifier	77	10
Trigger Sequence Number	802	4
Start Date	6	6
Timing Indicator	7	6
Start Time	18	8
Elapsed Time	19	10
Resource Type	608	4
Destination Address NPA	13	4
Destination Address	14	8

The Trigger Sequence Number is not a supported field and is data-filled as “FFFF” (that is, unused). The Resource Type field indicates whether the resource was an IP or an SSP internal resource. The rest of the fields already exist.

6.2.3 AMAMeasurement parameter

The AMAMeasurement parameter provides the duration time measurement that was requested by the AMAMeasure parameter in a Send_To_Resource message.

The AMAMeasurement parameter is added to the Resource_Clear message. This contains the resource connection duration timing being sent back to the SCP. The field AMATimeGuard is part of the AMAMeasurement parameter and the AMATimeGuard will indicate the validity of the timing measurement.

This parameter is controlled by SOC option AIN00220.

6.3 Switch-based modules

The Switch-Based Modules FS groups these modules based on non-AIN switch processing or switch features; those that are not based on the presence of TCAP parameters received from the SCP.

6.3.1 Product view

The switch-based module implements the Switch-Based Module FS.

6.3.2 Indicator module

The indicator module identifies conventional AMA records as preceding an AIN trigger when record contains timing and completed call status in the Called Party Off Hook indicator field.

A module 204, is defined for AMA in both AIN Essentials and AIN Service Enablers.

6.3.2.1 Module code 204

This module is appended to non-AIN AMA records prior to the SDS, O_Called_Party_Busy and O_No_Answer triggers and events that do not contain the final routing number in the Terminating Number fields (BAF Tables 16 and 17). Module code 204 consists of one field: BAF Table 610.

Table 68 Indicator module 204

Information	Table number	Number of characters
Module Code	88	4
Indicator Identification	610	4

Table 610 has two values as show in Table 69.

Table 69 BAF Table 610

Value	Meaning
1	Not Final Route (AIN query encountered on structure's terminating number)
2	O_Called_Party_Busy or O_No_Answer trigger/event encountered, or Network_Busy NEL encountered

6.3.3 ISDN module

When an ISDN call originator encounters an SDS trigger, the first record only has the ISDN modules appended to it, not the post query record; except for ISDN modules 180 and 181.

6.3.4 MDR module

When a post query record is generated for a customer that is using MDR capabilities, then MDR modules are appended to the post query record.

6.3.5 WATS module

When the originating call agent is a WATS line, then the WATS module code is not appended to the post query record.

6.4 AMA affecting parameters

The AMA affecting parameters FS describes procedures and generation criteria when non-AMA TCAP parameters are received by the SSP.

6.4.1 Product view

AMA affecting parameters implements the AMA Affecting Parameters FS.

6.4.2 Completion indicator field

The "Completion Indicator" field of the AIN billing record contains the same information as the "AnswerIndicator" field of the SSP-based billing record. In this chapter, the term "Completion Indicator" is used for both AIN and SSP-based billing records.

For scenarios with one or more NELs in a call leg, the following conditions apply:

1. For call scenarios where an O_CPB or O_NoA EDP-R is followed by a Continue response:
 - records for all (NEL EDPR - response) have a completion indicator value of the final call disposition (001 or 006, 007)
 - all other records are marked “Pre-final Route” according to the final call disposition: 009 (Pre-final route, final call disposition completed) or 010 (Pre-final route, final call disposition not completed).
2. When the last EDP-R receives a response that is a NEL routing message (Analyze_Route, Forward_Call, or Collect_Info) then the following conditions apply, rather than (1) above:
 - the record for the final (EDPR- response) has a completion indicator value of the true call disposition (001 or 006, 007)
 - records for all (except the final) (EDP-R+ response) have a completion indicator value reflecting what occurred at the terminating DN returned in the response message, rather than reflecting the final call disposition; this includes (006, 007)
 - the record for any other (Query-Reponse+NEL) has a completion indicator value reflecting what occurred at the terminating DN returned in the response message rather than reflecting the final call disposition; this includes (006, 007, 009, 010). When the terminating DN returned in the response message rings or is busy, a 006 or 007 is produced. When the response does not route to a real DN (that is, it goes to an SDS number), then pre-final route indicators, 009 or 010 is produced.
 - for any other records [for (Query+Response) packages not involving NELs] the Completion Indicator is populated according to requirements for those messages.

For examples, see Section 6.13.10 , “Multiple extended TCAP transactions (METT),” on page 271.

Completion Indicator value 014 (Pre-final route, NEL follows) was removed; 009 (Pre-final route, final call disposition complete) and 010 (Pre-final route, final call disposition incomplete) replace the removed completion indicator.

An additional completion indicator value was added to BAF table 280 (value 15 “Not Completed: Call Sent to Treatment”). This value was

added along with the four values introduced in the NA008 product release. Value 15 is used only with AIN structure codes of 0220 and 0221.

Table 70 completion indicator summary

Completion indicator meaning	Value	Population criteria
"AIN Pre-final route record - final call disposition completed"	9	When the SSP receives an off-hook indication from the terminating access facility and the "final routing" number for this record is not available.
"AIN Pre-final route record - final call disposition not completed"	10	When the SSP does not receive an off-hook indication from the terminating access facility or is not able to complete the call for any reason and the "final routing" number for this record is not available.
"Not Completed, AIN SCP requested release time (Disconnect message received)"	11	When the Disconnect message is received in the response message of a transaction initiated by a originating or terminating BCM trigger and an AMAspID parameter is received.
"AIN Pre-final route record - NEL follows"	14	Not used as of the NA013 product release. Values 009 and 010 replace 014.
"Not Completed: Call sent to treatment"	15	When the call cannot complete because the call was sent to one of the following treatments: • vacant code (VACT) • unassigned number (UNDN) • blank directory number (BLDN) All other treatments applied during AIN calls do not produce AIN billing records. See Chapter 20.24.3: "Billing features limitations and restrictions" on page 701

These completion indicator values provide a more accurate representation of true call disposition.

See Chapter 20.24.10: "Emergency service limitations and restrictions" on page 705.

6.5 Default routing AMA

The default routing AMA function implements the Default Routing AMA FS.

6.5.1 AMA for default routing

The default routing AMA function describes what the SSP should do in the event that the SSP receives no SCP response to a query due to error processing. Default routing is invoked so that the billing system will have an indication of what occurred on the call.

When default AIN routing is invoked (due to some error conditions), a Structure Code 0220 record is generated and the AMAslpID (BAF Table 77) is populated with the value of AIN default routing: “9000000000”. This affects AIN Essentials and AIN Service Enablers.

6.6 Send_To_Resource AMA

Send_To_Resource billing includes the use of module code 290, based on the value of the AMAMeasure TCAP parameter. AMAMeasurement is also supported. See Section 6.2 “TCAP related AMA” on page 230.

The Send_to_Resource (STR) message can be sent by the SCP in either a Conversation Package or in a Response Package. When the STR message is received in a Conversation Package, the SSP must return a Resource_Clear message to the SCP, when the STR operation is finished and waits for further information from the SCP. When the STR is sent within a Response Package then it can not contain a DestinationAddress parameter and must contain a DisconnectFlag Parameter. When the preceding two parameter conditions are true, then the SSP does not return a Resource_Clear message, and does not wait for a final TCAP response. The SSP will close this Response Package and process the STR as a final response.

Recording (for AMA purposes) of the elapsed connection time (with IP or internal resources) is controlled by the AMAMeasure and AMAslpID parameters in the STR. When the STR has an AMAslpID and an AMAMeasure value of “connectTimeRecordedDestinationSSP” a Response Timing Module (Code 290) is appended to the AIN structure code record. See Section 6.2.3 , “AMAMeasurement parameter,” on page 233.

AMAslpID fields in the AIN structure and the MC0290 are populated as follows:

- The SSP generates structure code 220/221 for the transaction using the Bellcore-defined, AMAslpID value of ‘9000000050’ in the structure and a

Call Type Code of '047' in the structure when all of the following conditions apply:

- A Response Timing Module (Code 290) is generated using the requirements of Section 9.7.2.7 of GR-1298 and the AMAslpID field of the Module is populated with the AMAslpID of the STR.
- The final response message from the SCP following the completion of an STR connection either does not contain an AMAslpID or the STR itself was sent in a response package.
- When the STR is returned in a Conversation Package and the final response has an AMAslpID, the final response's AMAslpID is populated in the structure and the STR's AMAslpID is populated in the MC0290.

Figures 72 and 73 give examples of when the STR AMAslpID are used (both examples assume the AMAMeasure value will require SSP timing recording). In Figure 72 the STR is received in a response package, the new STR AMAslpID value (900000050) is put into the Structure 0220 and the AMAslpID received in the STR is put into the Module Code 290 appended to the SC 0220. In figure 73 the STR is received in a conversation package but the final response does not have an AMAslpID, the new STR AMAslpID value (900000050) is handled in the same manner as when the STR is in a response package. See Figures 74 and 75 for examples of the AMA records for this feature before and after NA010 processing of the AMAMeasure parameter with a value of "connectTimeRecordedDestinationSCP".

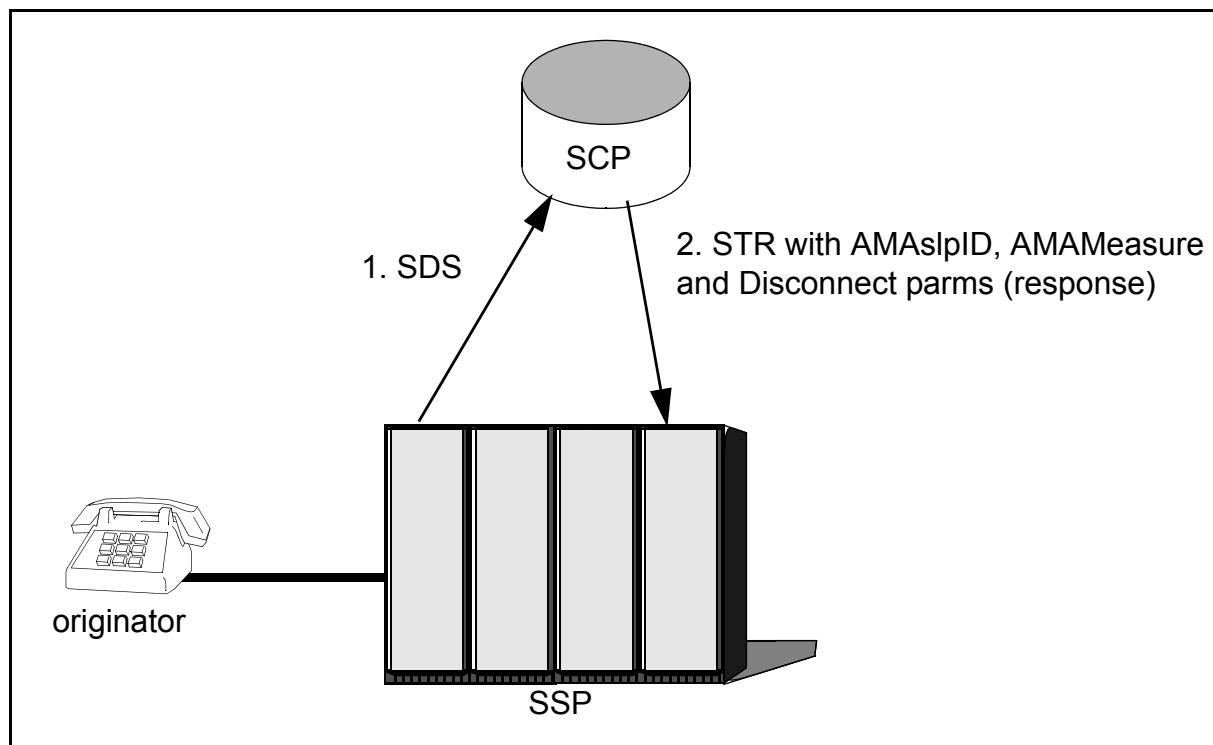
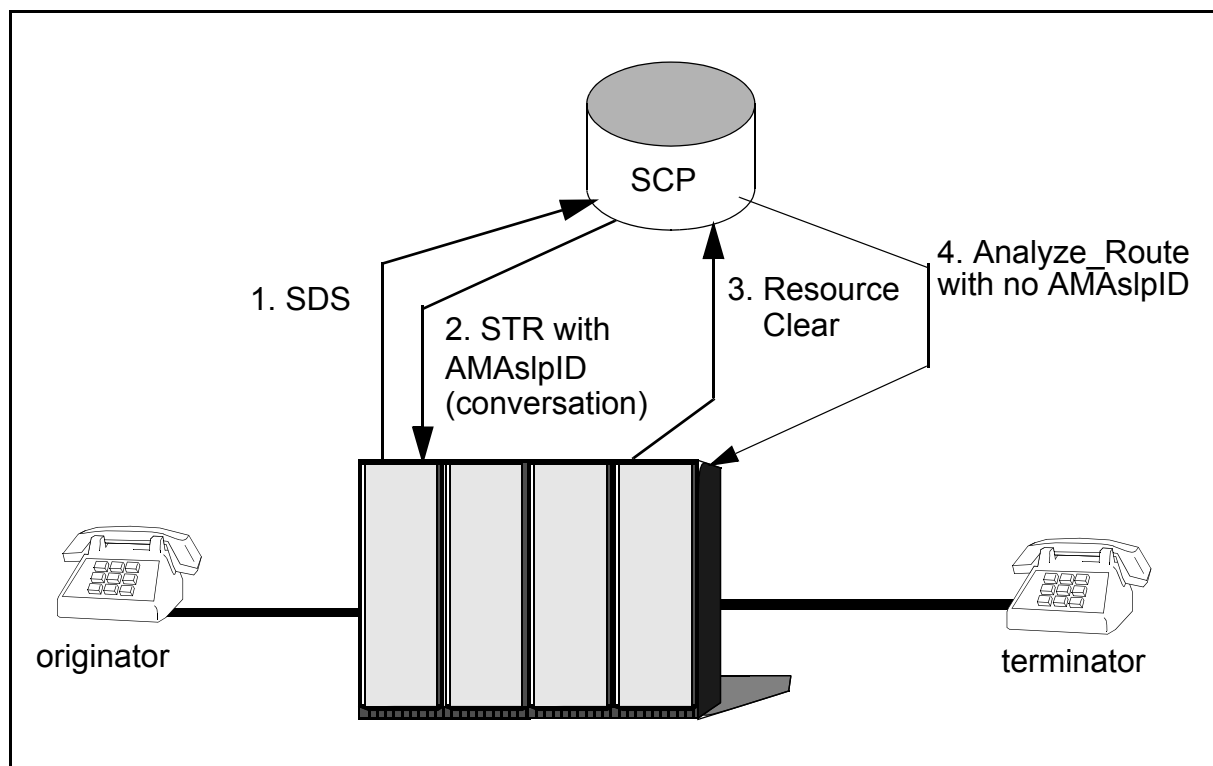
Figure 72 Orphan MC290 Scenario - STR in Response Package**Figure 73 Orphan MC290 Scenario - STR in Conversation Package**

Figure 74 Pre-NA010 AMAMeasure Service Logic Identification

```
*HEX ID:AA  STRUCTURE CODE:40220C  CALL CODE:047C  SENSOR TYPE:036C
SENSOR ID:0200200C  REC OFFICE TYPE:036C  REC OFFICE ID:0200200C
DATE:70530C  TIMING IND:00000C  STUDY IND:0200000C  COMPLETION IND:001C
OPER ACTION:0C  SERVICE FEATURE:027C  ORIG NPA:800C  ORIG NUMBER:8112000C
OVERSEAS IND:1C  TERM NPA:00613C  TERM NUMBER:6211512C
CONNECT TIME:1157473C  ELAPSED TIME:000000075C  SLP ID:111222333C
MODULE CODE:290C  SLP ID:111222333C  TRIGGER SEQUENCE NUMBER:FFFF
DATE:70530C  TIMING IND:00000C  CONNECT TIME:1157251C
ELAPSED TIME:000000103C  RESOURCE TYPE:004C  DESTINATION NPA:335C
DESTINATION ADDRESS:7224914C  MODULE CODE:039C  SLP ID:333444455C
MODULE CODE:000C
```

Note: Module Code 039 is included when the STR is received in a conversation package and the final response has an AMASlpID.

Figure 75 Post-NA010 AMAMeasure Service Logic Identification

```
*HEX ID:AA  STRUCTURE CODE:40220C  CALL CODE:047C  SENSOR TYPE:036C
SENSOR ID:0200200C  REC OFFICE TYPE:036C  REC OFFICE ID:0200200C
DATE:70530C  TIMING IND:00000C  STUDY IND:0200000C  COMPLETION IND:001C
OPER ACTION:0C  SERVICE FEATURE:027C  ORIG NPA:800C  ORIG NUMBER:8112000C
OVERSEAS IND:1C  TERM NPA:00613C  TERM NUMBER:6211512C
CONNECT TIME:1157473C  ELAPSED TIME:000000075C  SLP ID:333444455C
MODULE CODE:290C  SLP ID:111222333C  TRIGGER SEQUENCE NUMBER:FFFF
DATE:70530C  TIMING IND:00000C  CONNECT TIME:1157251C
ELAPSED TIME:000000103C  RESOURCE TYPE:004C  DESTINATION NPA:335C
DESTINATION ADDRESS:7224914C  MODULE CODE:000C
```

Note: The Module Code 039 is not appended. The value for the final response's AMASlpID is store in the Structure.

When a Send_To_Resource message contains an IP DN requiring use of IC facilities for call routing, and the AMASlpID parameter is not received with the Send_To_Resource message, the SSP generates a carrier access record (Call Type 110, Structure 0625) with the originating DN as the triggering number and the terminating DN as the IP DN. The special AMASlpID parameter 900000050 is used when no AMASlpID is received in the final response message.

When the resource timing module is to be generated for connection involving IC facilities, the SSP generates an AIN AMA record (Call Type Code 110, Structure Code 0220) with the originating DN as the triggering number and the terminating DN as the IP DN. The AMASlpID in the Send_To_Resource message is used in the AMA record.

When Destination Address based line attributes are applicable to the Send_To_Resource transaction, the attributes are the originating DN for the

Send_To_Resource transaction records. This is applicable to the Send_To_Resource transaction only, not to subsequent triggers/responses in the further legs of the call.

Carrier Access record generation is controlled by the BILLING option provided while the Send_To_Resource specific Destination Address based line attributes are available in Table STRATTRS. When the BILLING option is set to N in the corresponding tuple, no Carrier Access Record (Switch based or AIN AMA record) is generated. When the corresponding tuple is not available, the Carrier Access record is generated as the default.

6.6.1 Send To Resource and Connect To Resource AMA enhancements

The enhancements in AMA for SendToResource and ConnectToResource are done as per the modifications in GR 1298, Chapter 9 requirements. The following are the affected areas.

6.6.1.1 IP Connection Using Interexchange Carrier Facilities

The GR1298 (V.7) dictates new requirements for Send To Resource when used to access an IP over Interexchange Carrier (IC) facilities (typically FGD facilities). If an AMAslpID parameter is received with the Send_To_Resource message, then a separate AIN record will be generated for the IP connection, and Module 290 will not be generated. Since this separate AIN AMA record will contain the IP interaction duration in the customer elapsed time field, as well as the AMAslpID in the structure, generation of Module Code 290 will not be necessary. If no AMAslpID parameter is received with the Send_To_Resource, then a switch-based access record will be generated for the connection to the IP. The AIN or switch-based record is generated regardless of the receipt of the AMAMeasure parameter and its value. The changes are applicable for both STR and CTR.

It should be noted that no Module Code 290 will be generated, and neither an AIN AMA Record nor a Switch-based record will be generated for the IP call over an IC, regardless of whether the AMAMeasure parameter is present or not. Although it appears that the SCP can ignore the presence of the AMAMeasure parameter for AMA purposes, the SSP shall not ignore the AMAMeasure parameter for call processing purposes. For example, if the AMAMeasure parameter is sent with the value that indicates that the SCP needs the IP duration (i.e., “connectTimeRecordedDestinationSCP”), the SSP shall return the start date and time and the duration time measurement to the SCP/ Adjunct in an AMAMeasurement parameter as per requirements.

Call Sample:

- Party A calls an SDS number.
- SSP queries the SCP for the dialed SDS number.

- SCP sends an STR in conversation package with a destination address, primary carrier, AMASLPID and AMAMEASURE parameters.
- A is connected to IP for finite amount of time using the interexchange carrier.
- IP releases the connection and SSP reports a Resource_Clear to SCP.
- SCP in turn sends an Analyze Route (AR) with called party = B.
- Party A is connected to Party B.

When AMA records are generated with enhancements in place, only the carrier record Call type = 110, is generated for STR. If the final response for the conversation (like AR in the example) also has an AMASLPID then a separate AIN record is generated as usual.

The following snip of AMA records generated from SSP shows the only carrier record generated for the Interexchange IP calls and there are no records for Module 290 generated. Similar record generation is done for CTR (Connect To Resource) using IC to connect to IP.

```
*HEX ID:AA STRUCTURE CODE:40220C CALL CODE:110C SENSOR TYPE:036C
SENSOR ID:0619351C REC OFFICE TYPE:036C REC OFFICE ID:0619351C
DATE:20423C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:008C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:909C ORIG NUMBER:5507777C
OVERSEAS IND:0C TERM NPA:00909C TERM NUMBER:5503333C
CONNECT TIME:1414246C ELAPSED TIME:000000000C SLP ID:111222333C
MODULE CODE:306C OLIP:031C MODULE CODE:021C IC/INC PREFIX:02221C
CC DATE:20423C CC TIME:1414167C ELAPSED CC:000000078C
IC/INC EVENT STATUS:001C TRUNK GROUP NUMBER:30638C ROUTING INDICATOR:0C
DIALING INDICATOR:2C ANI INDICATOR:0C MODULE CODE:000C
```

6.6.1.2 Consecutive AIN AMA Records with AMASlpID of 900000050

When two or more “orphan” AIN AMA records (records with AMASlpID of 900000050) would be generated for consecutive Send_To_Resource messages, these resulting Module 290s would be appended to separate Structures. The Structures would contain the same DN in the originating number fields of Structure 0220 or terminating number fields of Structure 0221, the SSP shall only generate one of these structures and append both (or more) Module 290s to this structure.

This requirement is valid for consecutive STR and consecutive CTR. Also it is valid for scenarios where CTR is followed by STR also.

Another point to consider is that if one of the consecutive STR or CTR is using Inter Exchange Carrier then the Module 290 for that transaction is suppressed and the rest of the Module 290s will be appended and generated in the same record.

Note: Consecutive records here mean that STR or CTR in conversation package will have STR or CTR as response to Resource Clear or CTR_clear messages respectively.

Call Example :

- Party A calls and SDS number.
- SSP sends a query to SCP for the SDS digits disled.
- SCP responds with a STR in conversation package carrying the destination address, AMASlpID1, AMAMeasure Parameter.
- A is connected to the IP resource.
- Resource clear is reported from SSP to SCP.
- SCP responds back with STR in response package with AMASlpID2, AMAMeasure parameter.
- Party A is disconnected after the final STR response.

Following is the AMA record generated with Module 290's for both the above STRs being appended in one single "orphan" record which is a record with AMASlpId = 900000050. The AMASlpIds of the two STRs can be distinguished in the two attached Module 290s to the same record.

```
*HEX ID:AA STRUCTURE CODE:40220C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0619351C REC OFFICE TYPE:036C REC OFFICE ID:0619351C
DATE:20805C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:008C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:613C ORIG NUMBER:7238888C
OVERSEAS IND:1C TERM NPA:00613C TERM NUMBER:7238888C
CONNECT TIME:1152474C ELAPSED TIME:000000000C SLP ID:900000050C
MODULE CODE:025C CIRCUIT DATE:20805C CIRCUIT TIME:1153094C
MODULE CODE:306C OLIP:031C MODULE CODE:290C SLP ID:111222333C
TRIGGER SEQUENCE NUMBER:FFFF DATE:20805C TIMING IND:00000C
CONNECT TIME:1153062C ELAPSED TIME:000000001C RESOURCE TYPE:004C
RESOURCE DESTINATION NPA:613C RESOURCE DESTINATION ADDRESS:7233333C
MODULE CODE:290C SLP ID:222111222C TRIGGER SEQUENCE NUMBER:FFFF
DATE:20805C TIMING IND:00000C CONNECT TIME:1153069C
ELAPSED TIME:000000018C RESOURCE TYPE:000C RESOURCE DESTINATION NPA:000C
RESOURCE DESTINATION ADDRESS:0000000C MODULE CODE:000C
```

6.6.1.3 Long Duration Enhancements

The "Orphaned Records" in this section refer to the AIN AMA Structure (either Structure Code 0220 or 0221) that contains the AMASlpID of

900000050 in the core structure. When this AIN AMA record is generated, one or more Module Code 290s will be appended to it. As long as the call remains in session, there is a possibility that additional Module Code 290s may be generated.

If long duration applies to this call, the record will be generated at the scheduled long duration record generation time when the proper conditions are met and any Module Code 290s that are appended to this record will only be appended to this record. Once the “Orphaned Record” is generated with the Module Code 290s appended to it, the SSP should not generate another “Orphan Record” unless additional Module Code 290s are created.

For example, if a long duration call has an “Orphan Record” with a Module Code 290 open, then at the next scheduled long duration record generation time, the SSP should generate this “Orphan Record” including the Module Code 290. For the rest of the call, if there are no additional Module Code 290s created, then there is no need to generate any “Orphaned Record.”

Thus, at the next scheduled long duration record generation time, or at the end of the call, the SSP should not generate any “Orphaned Record.”

The SSP shall append the Module Code 290s only to the generated long duration record, and not to any other long duration records generated there after (including the final record).

If no additional Module Code 290s have been created after the long duration record has been generated, the SSP shall

- suppress the generation of “Orphaned Record” as the final continuation record if the call does not reach the next scheduled continuation record generation time.
- suppress the generation of “Orphaned Record” at the next scheduled continuation record generation time.

If the call in the previous example did have additional Module Code 290s that were created after the long duration record was generated, the SSP should generate a new “Orphaned Record” and append these Module Code 290s to this record. Again, once these Module Code 290s are appended to this “Orphaned Record,” the SSP should not append these Module Code 290s to any other “Orphaned Records.” Hence for additional Module Code 290s have been created after the long duration record has been generated, the SSP shall

- Generate a new “Orphaned Record” and append the Module Code 290s if the call does not reach the next scheduled continuation record generation time after the previous long duration record has been already cut.
- Generate a new “Orphaned Record” and append the Module Code 290s only to this record at the next scheduled continuation record generation

time. This record (including the Module Code 290s) should not be generated again.

Please note that the additional 290s appended to the same record are for STR or CTR which came from SCP for a Resource Clear or CTR_clear message sent from SSP for the previous STR or CTR respectively.

Call Examples

- NO continuation Record and NO Final-continuation records :
- A calls a party B subscribed to Termination Attempt trigger.
- Termatt trigger sends a query from SSP to SCP.
- SCP responds with a Authorize termination while arming a Timeout event of 24 hours.
- Party A continues to talk to B.(say A started talking to B at 11 am first day)
- Timeout event detected after the 24 hrs time expiry and sends a query to SCP.(11 am 2nd day)
- SCP responds with a CTR (leg id = 0) with destination address (IP) , AMAslpID and AMaMeasure parameters with other required parms.
- After CTR-IP conversation is over, a CTR Clear message is reported from SSP to SCP.
- SCP sends back a Continue response as a final response.
- At midnight at the end of second day the “first record” is generated which will have the AIN “orphan” record for the long duration record.
- Party A and B keep talking for another 48 hours.(i.e. till 11 am fourth day).
- The “Continuation Record” generated on the end of third day midnight will not re-generate the orphan record already generated for the purpose of CTR on the second day.

The following record example shows the AIN call record generated at the First record generation time of the long duration record. The same record is not generated at the next long duration continual record generation time and at the time when the call brought down before the next continual record generation time.

HEX ID:AA STRUCTURE CODE:40221C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0619351C REC OFFICE TYPE:036C REC OFFICE ID:0619351C
DATE:20805C TIMING IND:00100C STUDY IND:0200030C COMPLETION IND:001C
SERVICE FEATURE:027C TERM NPA:00613C TERM NUMBER:7234529C
CONNECT TIME:1207439C ELAPSED TIME:000001168C SLP ID:900000050C
MODULE CODE:306C OLIP:031C MODULE CODE:290C SLP ID:111222333C
TRIGGER SEQUENCE NUMBER:FFFF DATE:20805C TIMING IND:00000C
CONNECT TIME:1207400C ELAPSED TIME:000000004C RESOURCE TYPE:159C
RESOURCE DESTINATION NPA:613C RESOURCE DESTINATION ADDRESS:7233333C
MODULE CODE:000C

6.6.1.4 New “orphan” record generated for Resource connection after the long duration first or continuation record is cut

- A calls a party B subscribed to Termination Attempt trigger.
- Termatt trigger sends a query from SSP to SCP.
- SCP responds with a Authorize termination while arming a Timeout event of 24 hours.
- Party A continues to talk to B.(say A started talking to B at 11 am first day)
- Timeout event detected after the 24 hrs time expiry and sends a query to SCP.(11 am 2nd day)
- SCP responds with a CTR (leg id = 0) with destination address (IP) , AMAslpID and AMaMeasure parameters with other required parms.
- After CTR-IP conversation is over, a CTR Clear message is reported from SSP to SCP.
- SCP sends back a Continue in response while arming a Timeout event with a timer of 24 hours. (Till around 11 am of 3rd day).
- At the end of the second day at midnight the first record for the long duration record is cut.This will have an an “orphan record” with Module 290 for the CTR.
- A and B continue to talk till next 24 hours, then a timeout event is detected and a query sent to SCP.(Around 11am of third day)
- SCP responds with a CTR (leg Id = 0), in conversation package with announcement and digit collection.
- After announcement and digit collection at party A, CTR Clear reported to SCP.
- SCP responds with another CTR in conversation package with destination address, legId = 0, AMaMeasure and AMAslpId parms alongwith other required parms.
- After conversation of pty A with IP gets over a CTR Clear reported to SCP.

- SCP responds with a Continue response and clears the conversation in transaction.
- The continuation record of the long duration record is generated at end of the third day at midnight. The orphan record will have all the consecutive resource connection Module 290s appended.
- Party A and B keep the connection alive for another 48 hours (till around 11 am of 5th day).
- The continuation long duration record at midnight on the end of 4th day will not have any Module 290 carrying orphan records re-generated.
- After the call ends on the 5th day the orphan records will NOT be re-generated.

The following record examples shows the CTR records with module 290 being generated as appended to the “orphan records”. As in the previous example we have one orphan record generated for the first CTR which happened on the first day of the call. Then there is a new orphan record generated for the two consecutive CTRs. These records are never regenerated at the following continual record generation time of the long duration call. Also, they are NOT re-generated when the call ends before the next continual record generation time (midnight by default) is reached for the call.

CTR 1:

```
*HEX ID:AA STRUCTURE CODE:40221C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0619351C REC OFFICE TYPE:036C REC OFFICE ID:0619351C
DATE:20805C TIMING IND:00100C STUDY IND:0200030C COMPLETION IND:008C
SERVICE FEATURE:027C TERM NPA:00613C TERM NUMBER:7234529C
CONNECT TIME:1212581C ELAPSED TIME:000000000C SLP ID:900000050C
MODULE CODE:025C CIRCUIT DATE:20805C CIRCUIT TIME:1214005C
MODULE CODE:306C OLIP:031C MODULE CODE:290C SLP ID:111222333C
TRIGGER SEQUENCE NUMBER:FFFF DATE:20805C TIMING IND:00000C
CONNECT TIME:1213035C ELAPSED TIME:000000000C RESOURCE TYPE:159C
RESOURCE DESTINATION NPA:613C RESOURCE DESTINATION ADDRESS:7233333C
MODULE CODE:000C
```

```
RTP305BD AMA112 AUG05 12:14:00 4100 INFO LONG DURATION CALL
ORIG= HOST 03 0 09 02 DN 6137234529
TERM=
CLG NO= 6137234533
CLD NO= $
CONNECT TIME= 217/1212581 REPORT COUNT= 1
ANSWERED= N
```

HEX ID:AA STRUCTURE CODE:40221C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0619351C REC OFFICE TYPE:036C REC OFFICE ID:0619351C
DATE:20805C TIMING IND:00100C STUDY IND:0200030C COMPLETION IND:001C
SERVICE FEATURE:027C TERM NPA:00613C TERM NUMBER:7234529C
CONNECT TIME:1217243C ELAPSED TIME:000001363C SLP ID:900000050C
MODULE CODE:306C OLIP:031C **MODULE CODE:290C SLP ID:111222333C**
TRIGGER SEQUENCE NUMBER:FFFF DATE:20805C TIMING IND:00000C
CONNECT TIME:1217189C ELAPSED TIME:000000001C RESOURCE TYPE:159C
RESOURCE DESTINATION NPA:613C RESOURCE DESTINATION ADDRESS:7233333C
MODULE CODE:290C SLP ID:222111333C TRIGGER SEQUENCE NUMBER:FFFF
DATE:20805C TIMING IND:00000C CONNECT TIME:1216557C
ELAPSED TIME:000000014C RESOURCE TYPE:001C RESOURCE DESTINATION NPA:000C
RESOURCE DESTINATION ADDRESS:0000000C **MODULE CODE:290C SLP ID:222111333C**
TRIGGER SEQUENCE NUMBER:FFFF DATE:20805C TIMING IND:00000C
CONNECT TIME:1216532C ELAPSED TIME:000000018C RESOURCE TYPE:001C
RESOURCE DESTINATION NPA:000C RESOURCE DESTINATION ADDRESS:0000000C
MODULE CODE:000C

>open ama
Done.

RTP305BD AMA112 AUG05 12:19:00 0800 INFO LONG DURATION CALL
ORIG= HOST 03 0 09 02 DN 6137234529
TERM= HOST 03 0 09 02 DN 6137234529
CLG NO= 6137234533
CLD NO= \$
CONNECT TIME= 217/1217243 REPORT COUNT= 1
ANSWERED= Y

6.7 Connect To Resource AMA

When the SSP receives a Connect To Resource message from the SCP/Adjunct containing an *AMAslpID* parameter, an *AMAAAlternateBillingNumber* parameter, and no *AMASequenceNumber* parameter, the SSP generates a Module Code of 029.

The SSP generates a Structure Code 0220/0221 for the transaction using the *AMAslpID* parameter value “900000050” and a Call Type Code ‘047’ and appends Module Code 290, under the following conditions:

- A Resource Timing Module (Code 290) is generated, regardless of the Package type.
- The final response message from the SCP/Adjunct following the completion of a CTR connection does not contain an *AMAslpID* parameter, the CTR itself is the final response message, or the call terminates before the final response is received.

When the SSP receives a Connect To Resource message from the SCP/Adjunct that does not contain a Destination Address parameter, but does contain an *AMAMeasure* parameter indicating a duration time must be recorded, the SSP measures the duration time associated with the user’s actual connection to the internal SSP resource. The SSP generates a module code 290. Module 290,

Resource Timing Module, records the internal or IP resource usage measurements.

When the SSP receives a CTR message from the SCP/Adjunct containing an AMAslpID parameter, an AMAAlternateBillingNumber parameter, and an AMASequenceNumber parameter, the SSP generates a module code 229. The existing AIN and switch based records are closed as a normal exit after the call has been answered and the Disconnect response is received for the CTR message.

6.8 Offer_Call billing

The Offer_Call message can be sent by the SCP or Adjunct in response to the T_Busy TDP event or trigger query. The Offer_Call message allows the SSP to offer the call to the called party. The Offer_Call message can contain parameter DisplayText. When this occurs, the SSP attempts to deliver this information to the called party.

The Offer_Call message can offer features already enabled on the called party's line, such as call waiting (for a non-ISDN line) or additional call offering (for BRIs), to the called party.

The following parameters are allowed in the Offer_Call message:

- CallingPartyID
- DisplayText
- ControllingLegTreatment
- AMA parameters
 - PrimaryBillingIndicator
 - AMAAlternateBillingNumber
 - AMABusinessCustomerID
 - AMALineNumber
 - AMAslpID
 - AMADigitsDialedWC

When the SSP cannot offer the call to the called party because a call is already waiting (for a non-ISDN line) or the call cannot be offered under additional call offering (for an ISDN BRI), then the call encounters the CFBL or (I-CFIB) feature when it is available. When the CFBL or I-CFIB feature is not available, a check is made on the originating call model to see whether the calling party is subscribed to OCPB. After the above checks have failed the SSP provides final treatment.

When the Offer_Call response is received with parameter AMASlpID, AIN AMA records are generated, similar to the AIN AMA processing for the Continue message received in response to trigger T_Busy. When no AMASlpID parameter is returned, only switch-based AMA can be recorded.

Offer_Call is a response to triggers and events in the terminating call model and produces structure code 0221 with a CTC of 047 (AIN default).

6.9 Double carrier access record suppression

The DMS switch complies with the suppression of the pre-SDS query originating access record. Suppressed records are shown in Table 71 on page 250. These records are only suppressed when an Analyze_Route response is received following trigger SDS. Other information (for example, ISDN, MDR, Study) that is recorded in the originating EA record is lost.

In NA013, AIN AMA continues to delete any pre-SDS originating EA records. Records are not re-generated when the originator has ISDN and/or Study/LCDR information that requires recording.

Table 71 Suppressed CTCs

CTC	Definition
110	InterLATA station paid
111	InterLATA WATS station detail
114	InterLATA WATS billing number
117	InterLATA PSDS
134	FGB originating

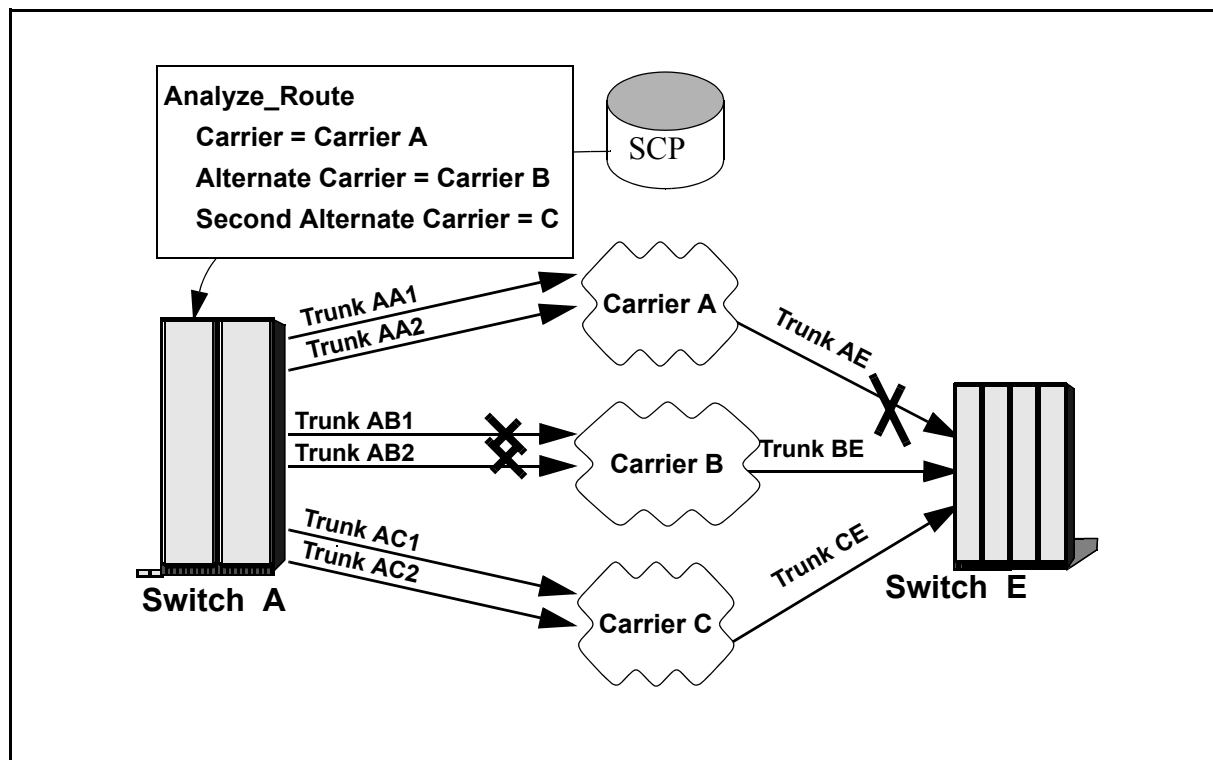
When a Continue response is received, pre-SDS query records are not suppressed and the post query record is converted into CTC 47. See Chapter 18: "Toll-free service".

6.10 Alternate carrier routing

Per Bellcore ILR - 11-2436, AIN AMA generates a record (structure code 220 when AMASlpID included in the response, otherwise SC 625) and includes or appends all needed carrier info for each carrier attempt that signals out of the office.

In the example shown in Figure 76, an AMA record is generated to record access charges for carrier A and carrier C. The switch sent IAMs for both Carrier A and C, thus access recording is needed. Carrier B was blocked (all trunks busy) intra-switch, an IAM was not sent, thus access recording is not needed.

Figure 76 ACR in an Analyze_Route Response



6.11 Collect Information message

The `Collect_Information` message sent from the SCP is a response to `Info_Analyzed`, `O_Called_Party_Busy`, `O_No_Answer`, `Network_Busy`.

The `Collect_Information` message returns the call to the `Collect_Information` PIC in the AIN Call Model, that requires the switch to check the information in the `CollectedDigits` parameter against the dialling plan in force. The dial plan element(s) contained within the `CollectedDigits` parameter are then translated by the switch. Translations can determine several results including start-up of a switch-based feature, routing over a trunk, routing to a local DN on the switch or prompting caller for more digits.

When a `Collect_Info` message contains an `AMAslpID` parameter, then AIN AMA will generate the appropriate AIN AMA record per trigger type (structure code 0220). When the message contains a vertical service then the appropriate switch based AMA for that service is generated as well (for NA010, CLASS record SC 1030, CTC 330). The presence of an `AMAslpID` is not necessary for the vertical service to generate a record.

6.12 Create_Call message

The system generates AMA records when the originator accepts the `Create_Call` message by going off-hook. When the originator does not go

off-hook, nether switch-based nor AIN AMA records are generated. (Unanswered recording does not apply.).

When the originator accepts the Create_Call by going off-hook and an AMAslpID is present in the Create_Call message, AIN AMA recording applies. When the system generates a record for Create_Call, the record is always the first AIN record for that call scenario.

When the Create_Call is accepted but no AMAslpID is present in the Create_Call message, switch-based billing applies using existing requirements.

Whether or not the Create_Call message has an AMAslpID, AIN AMA is generated for subsequent triggers according to existing requirements.

6.13 AMA call scenarios

The following sections describe some typical call scenarios where AMA records are generated. Specifically, the following types of calls are described:

- calls where non-AIN AMA records are appended with module code 204
- calls interacting with the following triggers:
 - O_Called_Party_Busy
 - O_No_Answer
- calls interacting with the following events:
 - T_Busy
 - T_No_Answer
 - Network_Busy
- calls generating an AMA record with a completion indicator of 009
- calls using default routing
- calls involving the Send_To_Resource message
- calls involving multiple extended TCAP transactions (that is, multiple NELs in the originating call model)

Note: In the following examples, the call code generated in the various sample AMA records can vary, depending on switch translations.

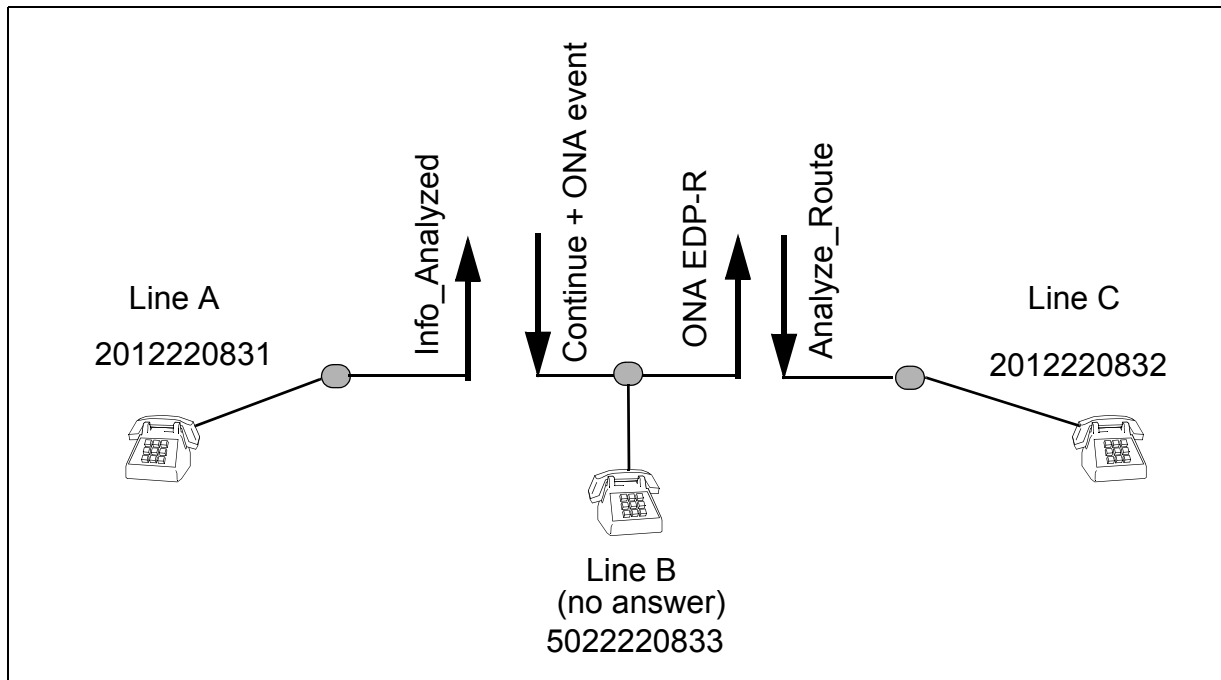
6.13.1 AMA records with module code 204

This scenario assumes that the user has datafilled trigger SDS. See Figure 77 “AMA record call scenario with module code 204” on page 254. The

following steps describe the call flow for a call that uses trigger SDS and generates a non-AIN AMA record with module code 204:

1. Office-wide triggers are enabled.
2. Line A (2012220831) goes off-hook and dials SDS digits (5022220833).
3. The call encounters an SDS trigger. The SSP sends an Info_Analyzed query message to the SCP.
4. The SCP returns a Continue response with an AMAslpID parameter (123456789) and a RRBCME arming the O_No_Answer event.
5. The call is not answered. The O_No_Answer timer expires.
6. The SSP sends an O_No_Answer EDP-R message to the SCP. The SCP responds with an Analyze_Route message.
7. The Analyze_Route message with a another AMAslpID parameter (987654321) and instructs the SSP to reroute the call to line C (2012220832).
8. The call is answered.
9. After all lines return to the on-hook state, a non-AIN AMA record is generated with call code 006, structure code 40500, and module code 204. See Figure 78 “Sample non-AIN AMA record with module code 204” on page 254.

Note: This scenario also produces AIN-specific AMA records. See Figure 79 “Sample one-AIN AMA record” on page 255 and Figure 80 “Sample two-AIN AMA record” on page 255.

Figure 77 AMA record call scenario with module code 204**Figure 78 Sample non-AIN AMA record with module code 204**

```
*HEX ID:AA STRUCTURE CODE:40500C CALL CODE:006C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:70719C CLD PTY OFF-HK:0C SERVICE FEATURE:000C ORIG NPA:201C
ORIG NUMBER:2220831C OVERSEAS IND:0C TERM NPA:00502C
TERM NUMBER:2220833C CONNECT TIME:1043128C ELAPSED TIME:000000069C
MODULE CODE:204C INDICATOR IDENTIFICATION:001C MODULE CODE:000C
```

Figure 79 Sample one-AIN AMA record

```
*HEX ID:AA STRUCTURE CODE:40220C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:70719C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:009C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:502C ORIG NUMBER:2220833C
OVERSEAS IND:0C TERM NPA:00502C TERM NUMBER:2220833C
CONNECT TIME:1043128C ELAPSED TIME:000000000C SLP ID:123456789C
MODULE CODE:025C CIRCUIT DATE:70719C CIRCUIT TIME:1043198C
MODULE CODE:029C ALTERNATE BILLING NUMBER:02012220831C MODULE CODE:027C
BUSINESS CUSTOMER ID:02012220834C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:00000000000000C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:00000000000000C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:00000000000000C MODULE CODE:307C LINE NUMBER TYPE:005C
NPA LINE:00201C LINE NUMBER:2220831C MODULE CODE:307C
LINE NUMBER TYPE:005C NPA LINE:00201C LINE NUMBER:2220831C
MODULE CODE:030C CONTEXT ID:001C TRANS SETTABLE:272C MODULE CODE:030C
CONTEXT ID:002C TRANS SETTABLE:888C MODULE CODE:000C
```

Figure 80 Sample two-AIN AMA record

```
*HEX ID:AA STRUCTURE CODE:40220C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:70719C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:001C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:502C ORIG NUMBER:2220833C
OVERSEAS IND:0C TERM NPA:00201C TERM NUMBER:2220832C
CONNECT TIME:1043128C ELAPSED TIME:000000069C SLP ID:987654321C
MODULE CODE:029C ALTERNATE BILLING NUMBER:02012220831C MODULE CODE:027C
BUSINESS CUSTOMER ID:02012220834C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:00000000000000C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:00000000000000C MODULE CODE:307C LINE NUMBER TYPE:005C
NPA LINE:00201C LINE NUMBER:2220831C MODULE CODE:307C
LINE NUMBER TYPE:005C NPA LINE:00201C LINE NUMBER:2220831C
MODULE CODE:000C
```

6.13.2 AMA records for trigger O_Called_Party_Busy

This scenario assumes that the originator subscribes to the O_Called_Party_Busy trigger. See Figure 81 “AMA record call scenario for trigger OCPB” on page 256. The following steps describe the call flow of a call that uses trigger O_Called_Party_Busy and generates an AMA record. See Figure 81 “AMA record call scenario for trigger OCPB” on page 256.

The following steps describe a call that uses trigger O_Called_Party_Busy and generates an AMA record:

1. Line A (2012220831) is configured with trigger O_Called_Party_Busy.
2. Line B is busy.
3. Line A calls line B and encounters trigger O_Called_Party_Busy.
4. The SSP sends an O_Called_Party_Busy query message to the SCP. The SCP responds with an Analyze_Route message with an AMAslpID parameter (123456789).
5. The Analyze_Route message instructs the SSP to forward the call to line C (2012220833).
6. The call is answered.
7. When all lines return to the on-hook state, an AMA record is generated with call code 047, structure code 40220, and various module codes. See Figure 82 “Sample AMA record” on page 257.

Figure 81 AMA record call scenario for trigger OCPB

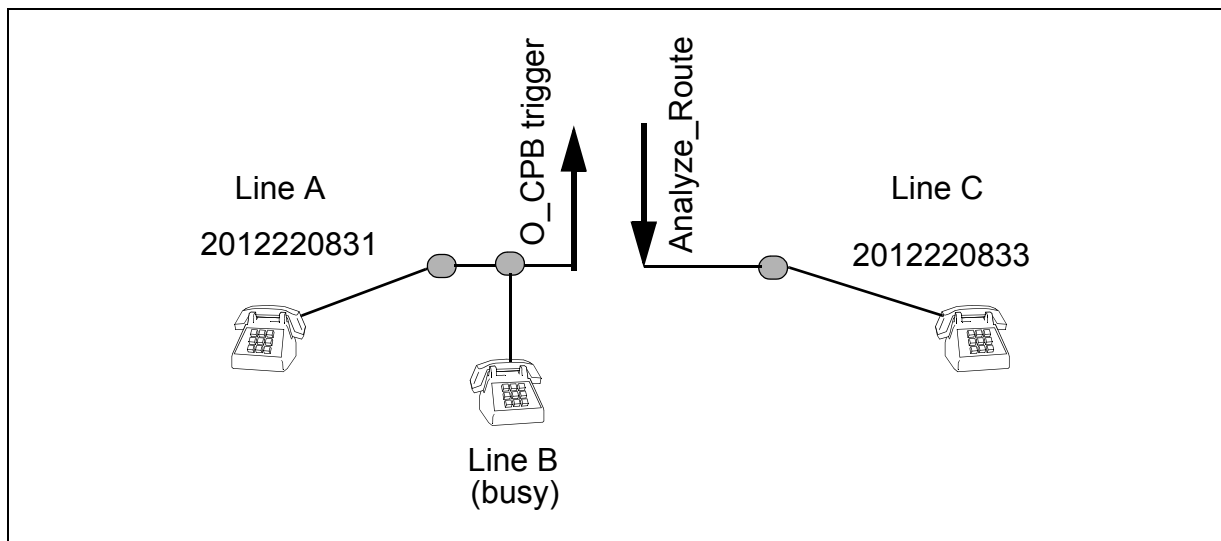


Figure 82 Sample AMA record

```

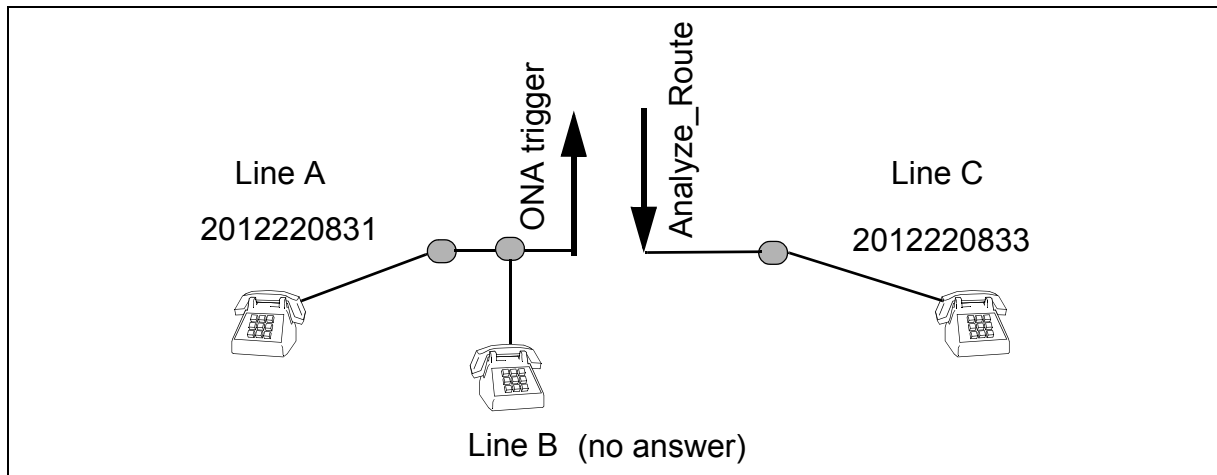
*HEX ID:AA  STRUCTURE CODE:40220C  CALL CODE:047C  SENSOR TYPE:036C
SENSOR ID:0999999C  REC OFFICE TYPE:036C  REC OFFICE ID:0999999C
DATE:71223C  TIMING IND:00000C  STUDY IND:0200000C  COMPLETION IND:001C
OPER ACTION:0C  SERVICE FEATURE:027C  ORIG NPA:201C  ORIG NUMBER:2220831C
OVERSEAS IND:0C  TERM NPA:00201C  TERM NUMBER:2220833C
CONNECT TIME:1400593C  ELAPSED TIME:000000048C  SLP ID:123456789C
MODULE CODE:306C  OLIP:031C  MODULE CODE:029C
ALTERNATE BILLING NUMBER:02012220831C  MODULE CODE:027C
BUSINESS CUSTOMER ID:00201222083C  MODULE CODE:040C  DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C  DIGITS DIALED1:02012220831C
DIGITS DIALED2:00000000000000C  MODULE CODE:040C  DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C  DIGITS DIALED1:02012220831C
DIGITS DIALED2:00000000000000C  MODULE CODE:307C  LINE NUMBER TYPE:005C
NPA LINE:00201C  LINE NUMBER:2220831C  MODULE CODE:307C
LINE NUMBER TYPE:005C  NPA LINE:00201C  LINE NUMBER:2220831C
MODULE CODE:000C

```

6.13.3 AMA records for trigger O_No_Answer

This scenario assumes the originator subscribes to trigger O_No_Answer. See Figure 83 “AMA record call scenario for trigger ONA” on page 258. The following steps describe a call that uses trigger O_No_Answer and generates an AMA record:

1. Line A (2012220831) is configured with trigger O_No_Answer.
2. Line A calls line B.
3. The call is not answered.
4. The call encounters trigger O_No_Answer.
5. The SSP sends an O_No_Answer query message to the SCP. The SCP responds with an Analyze_Route message with an AMAslpID parameter (123456789).
6. The Analyze_Route message instructs the SSP to forward the call to line C (2012220833).
7. The call is answered.
8. When all lines return to the on-hook state, and AMA record is generated with call code 047, structure code 40220, and various module codes. See Figure 84 “Sample AMA record” on page 258.

Figure 83 AMA record call scenario for trigger ONA**Figure 84 Sample AMA record**

```
*HEX ID:AA STRUCTURE CODE:40220C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:71223C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:001C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:201C ORIG NUMBER:2220831C
OVERSEAS IND:0C TERM NPA:00201C TERM NUMBER:2220833C
CONNECT TIME:1114317C ELAPSED TIME:000000027C SLP ID:123456789C
MODULE CODE:306C OLIP:031C MODULE CODE:029C
ALTERNATE BILLING NUMBER:02012220831C MODULE CODE:027C
BUSINESS CUSTOMER ID:00201222083C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:00000000000000C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:00000000000000C MODULE CODE:307C LINE NUMBER TYPE:005C
NPA LINE:00201C LINE NUMBER:2220831C MODULE CODE:307C
LINE NUMBER TYPE:005C NPA LINE:00201C LINE NUMBER:2220831C
MODULE CODE:000C
```

6.13.4 AMA records for the T_Busy event

This scenario assumes that the called party subscribes to trigger Termination_Attempt.

See Figure 85 “AMA record call scenario for the T_Busy event” on page 259. The following steps describe the call flow of a typical call that uses the T_Busy event and generates an AMA record.

1. Office-wide triggers are enabled.
2. Line B is busy.
3. Line A calls line B (2012220832) and encounters trigger Termination_Attempt.

4. The SSP sends Termination_Attempt query message to the SCP.
5. The SCP responds with an Authorize_Termination message with an AMAslpID parameter (123456789) and an RRBCME arming the T_Busy event.
6. Also, an AMA record is generated. See Figure 86 on page 260.
7. The T_Busy event is encountered.
8. The SSP sends T_Busy EDP-R query message to the SCP. The SCP responds with a Forward_Call message with another AMAslpID parameter (987654321).
9. The Forward_Call message instructs the SSP to forward the call to line C (2012220833).
10. The call is answered.
11. When all lines return to the on-hook state, a second AMA record is generated with call code 047, structure code 40221, and various module codes. See Figure 87 “Sample of second AMA record” on page 260.

Figure 85 AMA record call scenario for the T_Busy event

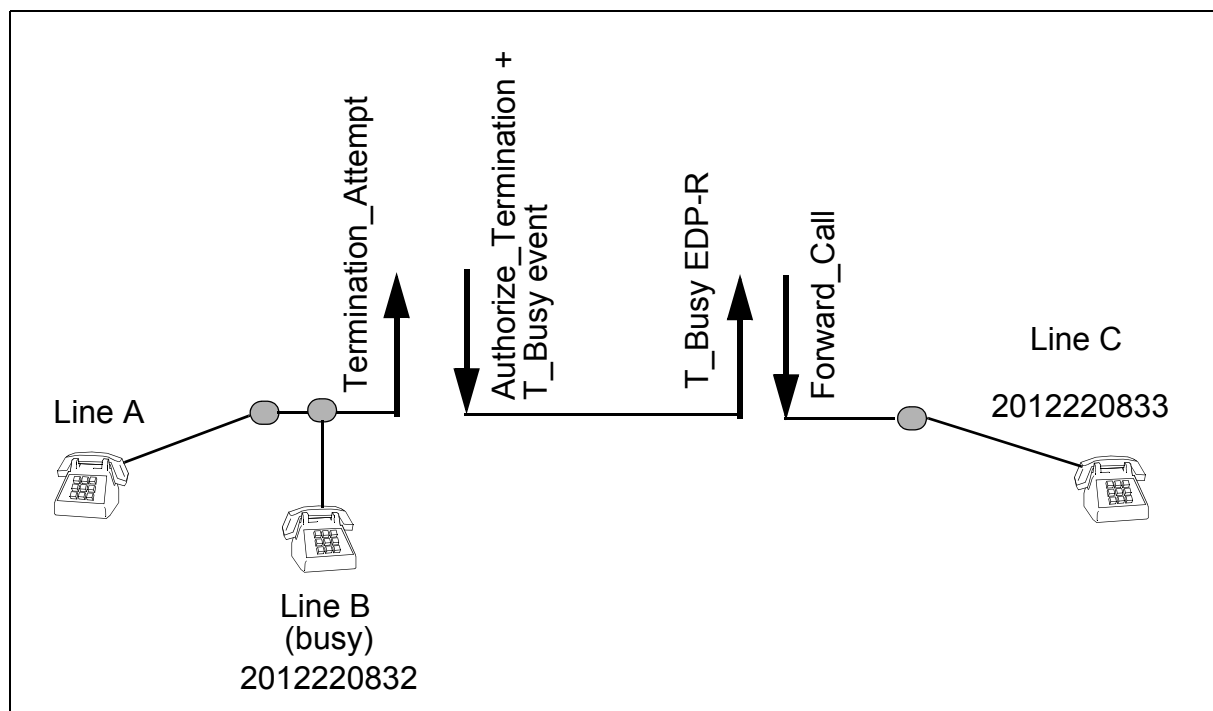


Figure 86 Sample of first AMA record

```
*HEX ID:AA STRUCTURE CODE:40221C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:90912C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:007C
SERVICE FEATURE:027C TERM NPA:00201C TERM NUMBER:2220832C
CONNECT TIME:1153306C ELAPSED TIME:000000000C SLP ID:123456789C
MODULE CODE:025C CIRCUIT DATE:90912C CIRCUIT TIME:1153356C
MODULE CODE:306C OLIP:031C MODULE CODE:029C
ALTERNATE BILLING NUMBER:02012220831C MODULE CODE:027C
BUSINESS CUSTOMER ID:02012220834C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:00000000000000C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:00000000000000C MODULE CODE:307C LINE NUMBER TYPE:005C
NPA LINE:00201C LINE NUMBER:2220831C MODULE CODE:307C
LINE NUMBER TYPE:005C NPA LINE:00201C LINE NUMBER:2220831C
MODULE CODE:030C CONTEXT ID:001C TRANS SETTABLE:272C MODULE CODE:030C
CONTEXT ID:002C TRANS SETTABLE:888C MODULE CODE:000C
```

Figure 87 Sample of second AMA record

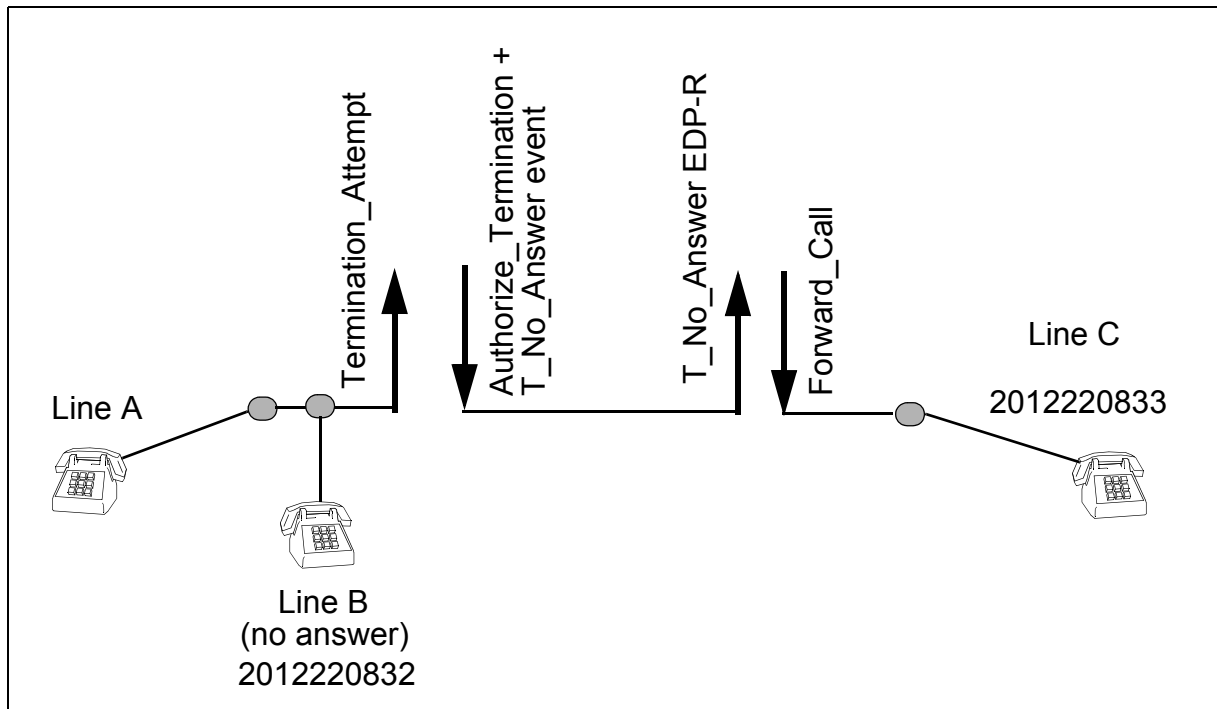
```
*HEX ID:AA STRUCTURE CODE:40220C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:90912C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:001C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:201C ORIG NUMBER:2220832C
OVERSEAS IND:0C TERM NPA:00201C TERM NUMBER:2220833C
CONNECT TIME:1153306C ELAPSED TIME:000000049C SLP ID:987654321C
MODULE CODE:306C OLIP:031C MODULE CODE:029C
ALTERNATE BILLING NUMBER:02012220831C MODULE CODE:027C
BUSINESS CUSTOMER ID:02012220834C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:006C DIGITS DIALED1:00000222083C
DIGITS DIALED2:00000000000000C MODULE CODE:040C DIGITS ID:300C
SIG DIGITS NEXT FIELD:024C DIGITS DIALED1:54004900002C
DIGITS DIALED2:8183920122208C MODULE CODE:307C LINE NUMBER TYPE:800C
NPA LINE:00906C LINE NUMBER:2261914C MODULE CODE:307C
LINE NUMBER TYPE:006C NPA LINE:00201C LINE NUMBER:2220834C
MODULE CODE:000C
```

6.13.5 AMA records for the T_No_Answer event

This scenario assumes that the called party subscribes to trigger Termination_Attempt.

See Figure 88 “AMA record call scenario for the T_No_Answer event” on page 262. The following steps describe the call flow of a typical call that uses the T_No_Answer event and generates an AMA record.

1. Office-wide triggers are enabled.
2. Line A calls line B (2012220832) and encounters trigger Termination_Attempt.
3. The SSP sends Termination_Attempt query message to the SCP.
4. The SCP responds with an Authorize_Termination message with an AMAslpID parameter (123456789) and an RRBCME arming the T_No_Answer event.
5. Also, an AMA record is generated. See Figure 89 on page 262.
6. The call is not answered. The T_No_Answer event timer expires.
7. The SSP sends the T_No_Answer EDP-R query message to the SCP. The SCP responds with a Forward_Call message with another AMAslpID parameter (987654321).
8. The Forward_Call message instructs the SSP to forward the call to line C (2012220833).
9. The call is answered.
10. When all lines return to the on-hook state, an AMA record is generated with call code 047, structure code 40221, and various module codes. See Figure 90 on page 263.

Figure 88 AMA record call scenario for the T_No_Answer event**Figure 89 Sample of first AMA record**

```

*HEX ID:AA  STRUCTURE CODE:40221C  CALL CODE:047C  SENSOR TYPE:036C
SENSOR ID:0999999C  REC OFFICE TYPE:036C  REC OFFICE ID:0999999C
DATE:70826C  TIMING IND:00000C  STUDY IND:0200000C  COMPLETION IND:006C
SERVICE FEATURE:027C  TERM NPA:00201C  TERM NUMBER:2220832C
CONNECT TIME:0944148C  ELAPSED TIME:000000000C  SLP ID:123456789C
MODULE CODE:025C  CIRCUIT DATE:70826C  CIRCUIT TIME:0944196C
MODULE CODE:306C  OLIP:031C  MODULE CODE:029C
ALTERNATE BILLING NUMBER:02012220831C  MODULE CODE:027C
BUSINESS CUSTOMER ID:02012220834C  MODULE CODE:040C  DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C  DIGITS DIALED1:02012220831C
DIGITS DIALED2:0000000000000C  MODULE CODE:040C  DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C  DIGITS DIALED1:02012220831C
DIGITS DIALED2:0000000000000C  MODULE CODE:307C  LINE NUMBER TYPE:005C
NPA LINE:00201C  LINE NUMBER:2220831C  MODULE CODE:307C
LINE NUMBER TYPE:005C  NPA LINE:00201C  LINE NUMBER:2220831C
MODULE CODE:030C  CONTEXT ID:001C  TRANS SETTABLE:272C  MODULE CODE:030C
CONTEXT ID:002C  TRANS SETTABLE:888C  MODULE CODE:000C
  
```

Figure 90 Sample of second AMA record

```
*HEX ID:AA STRUCTURE CODE:40220C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:70826C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:001C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:201C ORIG NUMBER:2220832C
OVERSEAS IND:0C TERM NPA:00201C TERM NUMBER:2220833C
CONNECT TIME:0944148C ELAPSED TIME:000000048C SLP ID:987654321C
MODULE CODE:306C OLIP:031C MODULE CODE:029C
ALTERNATE BILLING NUMBER:02012220831C MODULE CODE:027C
BUSINESS CUSTOMER ID:02012220834C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:006C DIGITS DIALED1:00000222083C
DIGITS DIALED2:00000000000000C MODULE CODE:040C DIGITS ID:300C
SIG DIGITS NEXT FIELD:024C DIGITS DIALED1:54004900002C
DIGITS DIALED2:8183920122208C MODULE CODE:307C LINE NUMBER TYPE:800C
NPA LINE:00906C LINE NUMBER:2261914C MODULE CODE:307C
LINE NUMBER TYPE:006C NPA LINE:00201C LINE NUMBER:2220834C
MODULE CODE:000C
```

6.13.6 AMA records for the Network_Busy event

This scenario assumes the called party subscribes to trigger Termination_Attempt. See Figure 91 “AMA record call scenario for the Network_Busy event” on page 264.

The following steps describe a call flow that uses the Network_Busy event and generates an AMA record:

1. Office-wide triggers are enabled.
2. The trunks to line D are busy.
3. Line A calls line B (2012220832) and encounters trigger Termination_Attempt.
4. The SSP sends Termination_Attempt query message to the SCP.
5. The SCP responds with an Forward_Call message with an AMAslpID parameter (123456789) and an RRBCME arming the Network_Busy event.
6. An AMA record is generated. See Figure 92 “Sample of first AMA record” on page 264.
7. The Forward_Call message instructs the SSP to forward the call to line D.
8. The call encounters the Network_Busy event.
9. The SSP sends the Network_Busy EDP-R query message to the SCP. The SCP responds with an Analyze_Route message with an AMAslpID parameter (987654321).
10. The Analyze_Route message instructs the SSP to forward the call to line C (2012220833).

11. The call is answered.
12. When all lines return to the on-hook state, an AMA record is generated with call code 047, structure code 40220, and various module codes. See Figure 93 "Sample of second AMA record" on page 265.

Figure 91 AMA record call scenario for the Network_Busy event

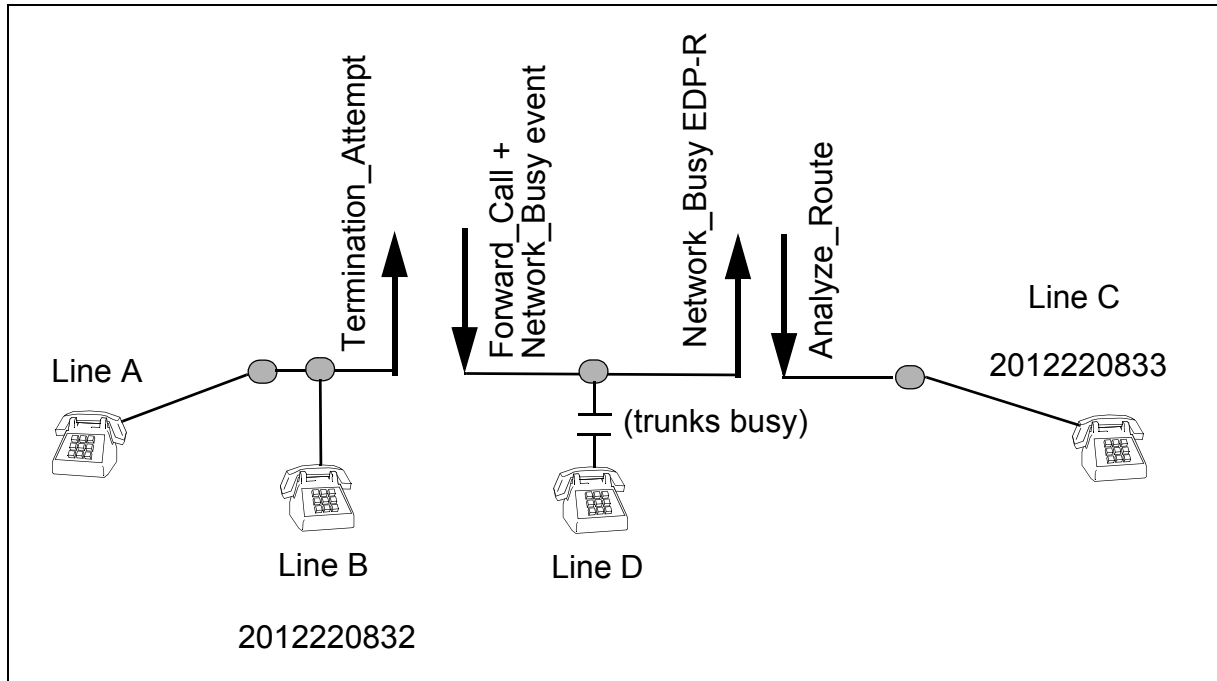


Figure 92 Sample of first AMA record

```
*HEX ID:AA STRUCTURE CODE:40220C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:70826C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:009C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:201C ORIG NUMBER:2220832C
OVERSEAS IND:0C TERM NPA:00201C TERM NUMBER:3330007C
CONNECT TIME:1259002C ELAPSED TIME:000000000C SLP ID:123456789C
MODULE CODE:025C CIRCUIT DATE:70826C CIRCUIT TIME:1259072C
MODULE CODE:306C OLIP:031C MODULE CODE:029C
ALTERNATE BILLING NUMBER:02012220831C MODULE CODE:027C
BUSINESS CUSTOMER ID:02012220834C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:0000000000000C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:0000000000000C MODULE CODE:307C LINE NUMBER TYPE:005C
NPA LINE:00201C LINE NUMBER:2220831C MODULE CODE:307C
LINE NUMBER TYPE:005C NPA LINE:00201C LINE NUMBER:2220831C
MODULE CODE:030C CONTEXT ID:001C TRANS SETTABLE:272C MODULE CODE:030C
CONTEXT ID:002C TRANS SETTABLE:888C MODULE CODE:000C
```

Figure 93 Sample of second AMA record

```
*HEX ID:AA  STRUCTURE CODE:40220C  CALL CODE:047C  SENSOR TYPE:036C
SENSOR ID:0999999C  REC OFFICE TYPE:036C  REC OFFICE ID:0999999C
DATE:70826C  TIMING IND:00000C  STUDY IND:0200000C  COMPLETION IND:001C
OPER ACTION:0C  SERVICE FEATURE:027C  ORIG NPA:201C  ORIG NUMBER:2220832C
OVERSEAS IND:0C  TERM NPA:00201C  TERM NUMBER:2220833C
CONNECT TIME:1259002C  ELAPSED TIME:000000069C  SLP ID:987654321C
MODULE CODE:306C  OLIP:031C  MODULE CODE:029C
ALTERNATE BILLING NUMBER:02012220831C  MODULE CODE:027C
BUSINESS CUSTOMER ID:02012220834C  MODULE CODE:040C  DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C  DIGITS DIALED1:02012220831C
DIGITS DIALED2:00000000000000C  MODULE CODE:040C  DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C  DIGITS DIALED1:02012220831C
DIGITS DIALED2:00000000000000C  MODULE CODE:307C  LINE NUMBER TYPE:005C
NPA LINE:00201C  LINE NUMBER:2220831C  MODULE CODE:307C
LINE NUMBER TYPE:005C  NPA LINE:00201C  LINE NUMBER:2220831C
MODULE CODE:000C
```

6.13.7 AMA records with completion indicator 009

This scenario assumes:

- The originator subscribes to trigger OHD.
- Office-wide triggers are enabled.
- The user has datafilled the SDS digits in the TRIGDIG table.
- The terminating line has SDY option assigned.

See Figure 94 “AMA record call scenario with completion indicator 009” on page 266. The following steps describe the call flow of a typical call that generates an AMA record with completion indicator 009.

1. Line A (2012220831) goes off-hook and detects the dial tone.
2. Line A dials Off-hook_Delay digits. The call encounters trigger Off-hook_Delay.
3. The SSP sends the Info_Collected query message to the SCP.
4. The SCP sends an Analyze_Route response message with an AMAslpID parameter (123456789) to the SSP. An AMA record is generated with a completion indicator of 009. See Figure 95 on page 267.
5. The CalledPartyID parameter in the Analyze_Route message contains the SDS digits (2012220836).
6. Call processing continues. The call encounters trigger SDS.
7. The SSP send the Info_Analyzed query message to the SCP.

8. The SCP sends an `Analyze_Route` response message with an `AMAslpID` parameter (987654321) to the SSP. A second AMA record is generated. See Figure 96 “Sample of second AMA record” on page 267.
9. The `Analyze_Route` message instructs the SSP to forward the call to line B (2012220834).
10. The call is answered.
11. When all lines return to the on-hook state, a third AMA record is generated with call code 036 and structure code 00079. See Figure 97 “Sample of third AMA record” on page 267.

Figure 94 provides a sample AMA record call scenario with completion indicator 009.

Figure 94 AMA record call scenario with completion indicator 009

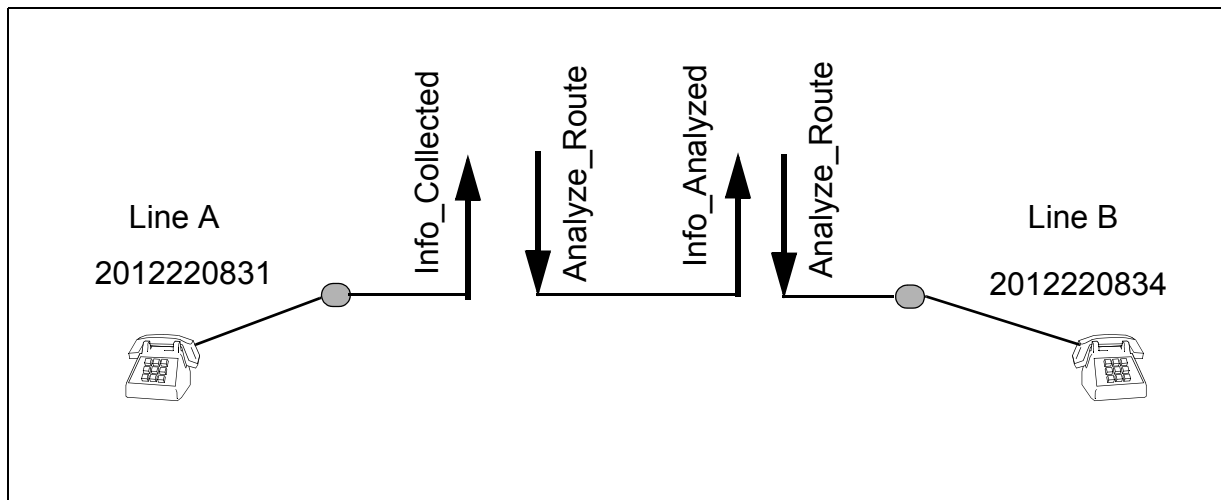


Figure 95 on page 267 provides a sample of the first AMA record.

Figure 95 Sample of first AMA record

```
*HEX ID:AA STRUCTURE CODE:40220C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:71219C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:009C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:201C ORIG NUMBER:2220831C
OVERSEAS IND:0C TERM NPA:00201C TERM NUMBER:2220836C
CONNECT TIME:0948495C ELAPSED TIME:000000040C SLP ID:123456789C
MODULE CODE:029C ALTERNATE BILLING NUMBER:02012220831C MODULE CODE:027C
BUSINESS CUSTOMER ID:00201222083C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:00000000000000C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:00000000000000C MODULE CODE:307C LINE NUMBER TYPE:005C
NPA LINE:00201C LINE NUMBER:2220831C MODULE CODE:307C
LINE NUMBER TYPE:005C NPA LINE:00201C LINE NUMBER:2220831C
MODULE CODE:000C
```

Figure 96 provides a sample of the second AMA record.

Figure 96 Sample of second AMA record

```
*HEX ID:AA STRUCTURE CODE:40220C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:71219C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:001C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:201C ORIG NUMBER:2220836C
OVERSEAS IND:0C TERM NPA:00201C TERM NUMBER:2220834C
CONNECT TIME:0948495C ELAPSED TIME:000000040C SLP ID:987654321C
MODULE CODE:029C ALTERNATE BILLING NUMBER:02012220831C MODULE CODE:027C
BUSINESS CUSTOMER ID:00201222083C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:00000000000000C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:00000000000000C MODULE CODE:307C LINE NUMBER TYPE:005C
NPA LINE:00201C LINE NUMBER:2220831C MODULE CODE:307C
LINE NUMBER TYPE:005C NPA LINE:00201C LINE NUMBER:2220831C
MODULE CODE:000C
```

Figure 96 provides a sample of the third AMA record.

Figure 97 Sample of third AMA record

```
*HEX ID:AA STRUCTURE CODE:00079C CALL CODE:036C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:71219C TIMING IND:00000C STUDY IND:2000000C CLD PTY OFF-HK:0C
SERVICE OBSERVED:0C OPER ACTION:0C SERVICE FEATURE:000C ORIG NPA:201C
ORIG NUMBER:2220834C CONNECT TIME:0948495C ELAPSED TIME:000000040C
```

6.13.8 AMA records for default routing

This scenario assumes that the user has datafilled trigger SDS.

See Figure 98 “AMA record call scenario for default routing” on page 268. The following steps describe the call flow of a typical call that generates an AMA record with completion indicator 1:

1. Office-wide triggers are enabled.
2. Line A (2012220836) calls line B and encounters trigger SDS.
3. The SSP sends the Info_Analyzed query message to the SCP. The SCP does not send a response.
4. The call routes to line C (2012227103) based on default routing translations.
5. The call is answered.
6. When all lines return to the on-hook state, an AMA record is generated with call code 047, structure code 00220, and SLP ID of 9000000000. See Figure 99 “Sample AMA record” on page 269.

Figure 98 on page 268 provides a sample AMA record call scenario for default routing.

Figure 98 AMA record call scenario for default routing

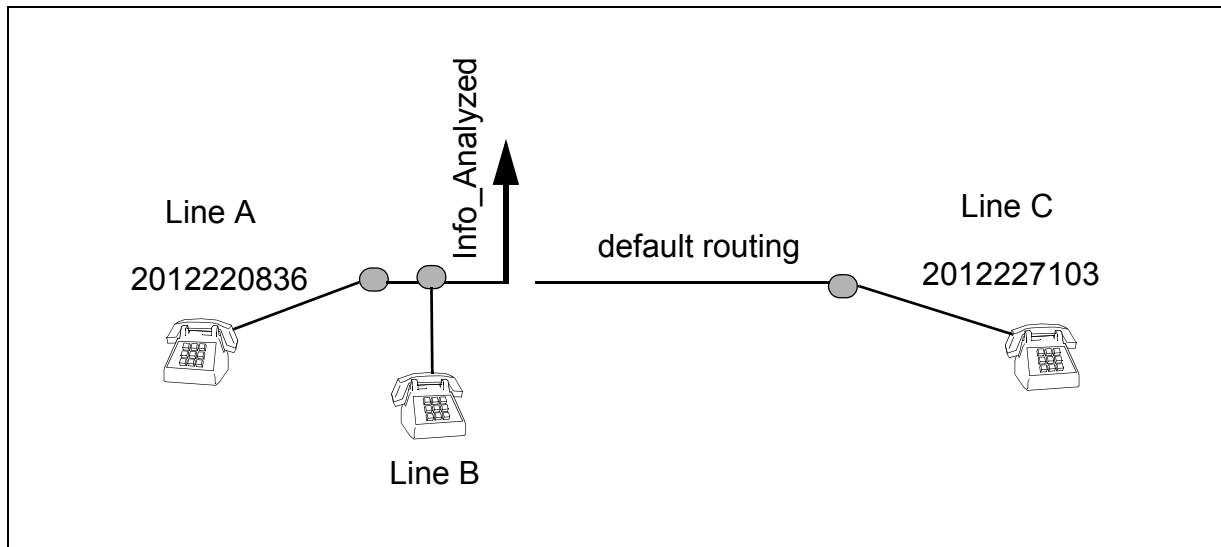


Figure 99 Sample AMA record

```
*HEX ID:AA  STRUCTURE CODE:00220C  CALL CODE:047C  SENSOR TYPE:036C
SENSOR ID:0999999C  REC OFFICE TYPE:036C  REC OFFICE ID:0999999C
DATE:70926C  TIMING IND:00000C  STUDY IND:0200000C  COMPLETION IND:001C
OPER ACTION:0C  SERVICE FEATURE:027C  ORIG NPA:201C  ORIG NUMBER:2220836C
OVERSEAS IND:0C  TERM NPA:00201C  TERM NUMBER:2227103C
CONNECT TIME:0748226C  ELAPSED TIME:000000048C  SLP ID:900000000C
```

6.13.9 AMA records for Send_To_Resource

This scenario makes the following assumptions:

- Line B subscribes to trigger Termination_Attempt.
- The service provider has already datafilled a remote SSP with an intelligent peripheral to process Send_To_Resource messages.

See Figure 100 “AMA record call scenario for Send_To_Resource message” on page 270. The following steps describe the call flow of a typical call that generates an STR message and AMA records.

1. Office-wide triggers are enabled.
2. Line A (6136213311) calls line B (6137225311).
3. The call encounters trigger Termination_Attempt.
4. The SSP send a Termination_Attempt query message to the SCP.
5. The SCP sends a Send_To_Resource response message to the SSP with the following parameters:
 - DestinationAddress set to 5897224914
 - AMAMeasure set to connectTimeRecordedDestinationSSP
 - AMASlpID set to 11111111

An AMA record is generated. See Figure 101 on page 271.

The DestinationAddress parameter specifies the location of the remote intelligent peripheral.

The AMAMeasure parameter set to connectTimeRecordedDestinationSSP ensures the SSP appends a module code 290 to the AMA record. The module code records the elapsed time of the connection to the remote IP and the DestinationAddress parameter.

Note: The resulting AMA record contains two elapsed time values. The first one records the elapsed time of the connection between the calling and called parties. The second one is in the module code and records only the elapsed time of the connection to the remote IP.

6. The calling party interacts with the remote intelligent peripheral.
7. Once the interaction is complete, the SSP sends a `Resource_Clear` message to the SCP.
8. The SCP responds with an `Forward_Call` message with an `AMAslpID` parameter (22222222) to the SSP.
9. A second AMA record is generated. See Figure 102 “Sample of second AMA record” on page 271.
10. The `Forward_Call` message instructs the SSP to forward the call to line C (6137227312).
11. The call is answered.

Figure 100 on page 270 provides a sample AMA record call scenario for `Send_To_Resource` message.

Figure 100 AMA record call scenario for `Send_To_Resource` message

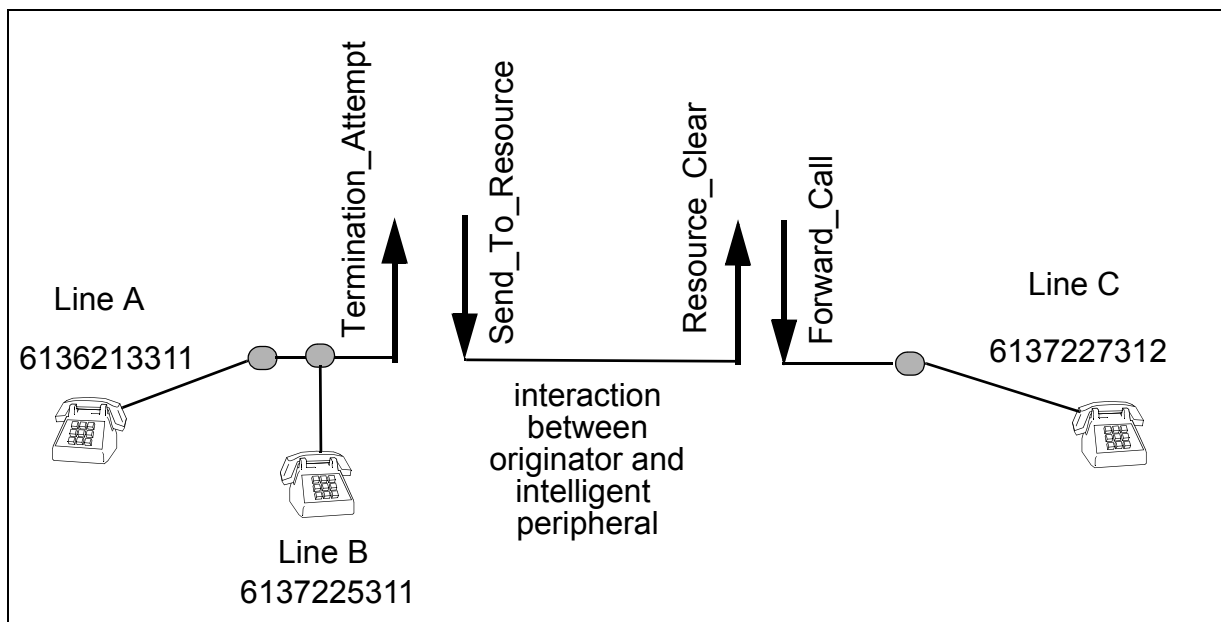


Figure 101 provides a sample of the first AMA record.

Figure 101 Sample of first AMA record

```
*HEX ID:AA STRUCTURE CODE:40221C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0200200C REC OFFICE TYPE:036C REC OFFICE ID:0200200C
DATE:80421C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:001C
SERVICE FEATURE:027C TERM NPA:00613C TERM NUMBER:7225311C
CONNECT TIME:1930286C ELAPSED TIME:000001097C SLP ID:111111111C
MODULE CODE:290C SLP ID:111111111C TRIGGER SEQUENCE NUMBER:FFFF
DATE:80421C TIMING IND:00000C CONNECT TIME:1929391C
ELAPSED TIME:000000432C RESOURCE TYPE:004C RESOURCE DESTINATION NPA:583C
RESOURCE DESTINATION ADDRESS:7224914C MODULE CODE:000C
```

Figure 102 provides a sample of the second AMA record.

Figure 102 Sample of second AMA record

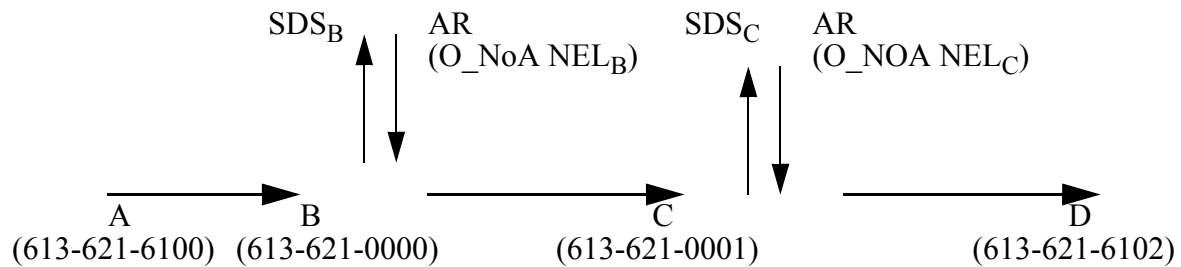
```
*HEX ID:AA STRUCTURE CODE:00220C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0200200C REC OFFICE TYPE:036C REC OFFICE ID:0200200C
DATE:80421C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:001C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:613C ORIG NUMBER:7225311C
OVERSEAS IND:0C TERM NPA:00613C TERM NUMBER:7227312C
CONNECT TIME:1930286C ELAPSED TIME:000001097C SLP ID:222222222C
```

6.13.10 Multiple extended TCAP transactions (METT)

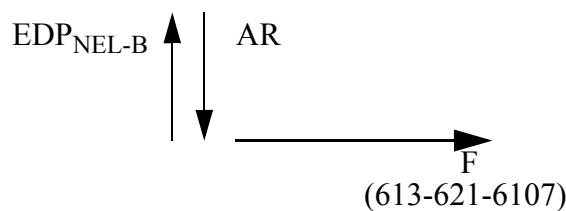
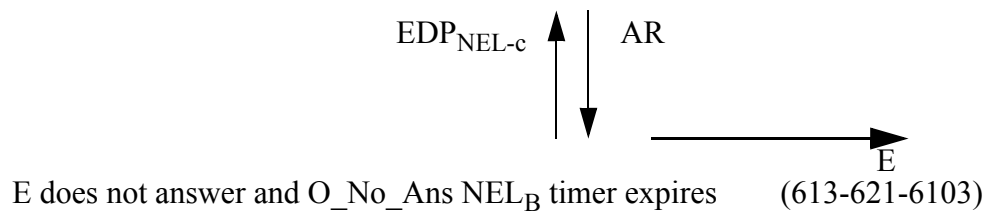
Multiple extended TCAP transactions (METT) means multiple NELs in the originating call model.

The OCM-METT activity does not affect AIN AMA records.

The following scenario illustrates how the switch generates AMA records when METT is involved in a call.

Figure 103 Sample OCM METT scenario

D does not answer and O_No_Ans NEL_C timer expires (has smaller timer value)



F Answers

The following AMA record example represents the SDS trigger encountered at B and gets an AR response to C with a O_NoA NEL armed:

```
*HEX ID:AA  STRUCTURE CODE:40220C  CALL CODE:047C  SENSOR
TYPE:036C
  SENSOR ID:0200200C  REC OFFICE TYPE:036C  REC OFFICE
ID:0200200C
  DATE:90708C  TIMING IND:00000C  STUDY IND:0200000C  COMPLETION
IND:009C
  OPER ACTION:0C  SERVICE FEATURE:027C  ORIG NPA:613C  ORIG
NUMBER:6210000C
OVERSEAS IND:0C  TERM NPA:00613C  TERM NUMBER:6210001C
  CONNECT TIME:1015427C  ELAPSED TIME:000000000C  SLP
ID:000000001C
MODULE CODE:025C  CIRCUIT DATE:90708C  CIRCUIT TIME:1015464C
MODULE CODE:000C
```

The following AMA record example represents the SDS trigger encountered at C and gets an AR response to D with a O_NoA NEL armed:

```
*HEX ID:AA  STRUCTURE CODE:40220C  CALL CODE:047C  SENSOR
TYPE:036C
  SENSOR ID:0200200C  REC OFFICE TYPE:036C  REC OFFICE
ID:0200200C
  DATE:90708C  TIMING IND:00000C  STUDY IND:0200000C  COMPLETION
IND:009C
  OPER ACTION:0C  SERVICE FEATURE:027C  ORIG NPA:613C  ORIG
NUMBER:6210001C
OVERSEAS IND:0C  TERM NPA:00613C  TERM NUMBER:6216102C
  CONNECT TIME:1015429C  ELAPSED TIME:000000000C  SLP
ID:000000002C
MODULE CODE:025C  CIRCUIT DATE:90708C  CIRCUIT TIME:1015454C
MODULE CODE:000C
```

The following AMA record example represents the O_NoA EDP-R encountered at C and gets an AR response to E:

```
*HEX ID:AA  STRUCTURE CODE:40220C  CALL CODE:047C  SENSOR
TYPE:036C
  SENSOR ID:0200200C  REC OFFICE TYPE:036C  REC OFFICE
ID:0200200C
  DATE:90708C  TIMING IND:00000C  STUDY IND:0200000C  COMPLETION
IND:006C
  OPER ACTION:0C  SERVICE FEATURE:027C  ORIG NPA:613C  ORIG
NUMBER:6210001C
OVERSEAS IND:0C  TERM NPA:00613C  TERM NUMBER:6216103C
  CONNECT TIME:1015454C  ELAPSED TIME:000000000C  SLP
ID:000000003C
MODULE CODE:025C  CIRCUIT DATE:90708C  CIRCUIT TIME:1015464C
MODULE CODE:000C
```

The following AMA record example represents the O_NoA EDP-R encountered at B and gets an AR response to F:

```
*HEX ID:AA  STRUCTURE CODE:40220C  CALL CODE:047C  SENSOR
TYPE:036C
  SENSOR ID:0200200C  REC OFFICE TYPE:036C  REC OFFICE
ID:0200200C
  DATE:90708C  TIMING IND:00000C  STUDY IND:0200000C  COMPLETION
IND:006C
  OPER ACTION:0C  SERVICE FEATURE:027C  ORIG NPA:613C  ORIG
NUMBER:6210000C
OVERSEAS IND:0C  TERM NPA:00613C  TERM NUMBER:6216107C
  CONNECT TIME:1016151C  ELAPSED TIME:000000000C  SLP
ID:000000004C
MODULE CODE:025C  CIRCUIT DATE:90708C  CIRCUIT TIME:1016157C
MODULE CODE:000C9
```

6.13.11 AMA records for the O_Disconnect, O_Disconnect_Called and Timeout events

The SSP generates an AMA record containing Structure code 0220 when an AMAslpID parameter is correctly received in:

- an SCP response arming the O_Disconnect or O_Disconnect_Called event, or
- an SCP response sent in response to a O_Disconnect query message is launched because one of those two events were detected, or
- the Disconnect response and Timeout was armed in either Collect_Info or Analyze_Route Message

The SSP generates Structure 0221 when an AMAslpID parameter is correctly received in the O_Disconnect response and Timeout was armed in an Offer_Call Response.

The AMA record Completion Indicator (BAF Table 280) is set to 001 (“Completed: Connected” from BAF Table 280 in GR-1100CO) and when the SCP response is Analyze Route, Collect Information, Forward Call, Continue, or Send To Resource, elapsed time is set to the duration of the call. Existing open AMA records are closed and a new record is started upon receipt of the response.

For the AMA record generated for AMAsLpID received in Continue response for Timeout, elapsed time is calculated from when Continue message is received, through the end of the call.

If the received response is a Disconnect response, the completion indicator is 011 (“AIN SCP-requested release time/disconnect message” received from BAF Table 280 in GR-1100CO) and the elapsed time is set to zero. The other AMA records in the call are unchanged.

7 AMA structures and modules

AIN SSP-specific billing uses the following two AMA structures:

- AIN call completion, structure code 220
- AIN call termination, structure code 221

The AMA structure that is used by the SSP for a call depends upon the trigger that is encountered during the call. AMA structure 221 is used only when a call triggers at trigger Termination_Attempt and a Forward_Call response is NOT received. For all other AIN SSP triggers and for trigger Termination_Attempt with a Forward_Call response, AMA structure 220 is used.

Table 72 and Table 73 on page 276 list the components of AMA structures 220 and 221.

Table 72 AIN Call Termination AMA structure code 221

Information	Table number	Number of characters
Record descriptor word	000	8
Hexadecimal identifier	00	2
Structure code	0	6
Call type	1	4
Sensor type	2	4
Sensor identification	3	8
Recording office type	4	4
Recording office identification	5	8
Date	6	6
Timing indicator	7	6
Study indicator	8	8

Table 72 AIN Call Termination AMA structure code 221 (Continued)

Information	Table number	Number of characters
Completion indicator	280	4
Service feature	12	4
Terminating NPA	16	6
Terminating number	17	8
Connect time	18	8
Elapsed time	19	10
Service logic program identification	77	10

Table 73 AIN Call Completion AMA structure code 220

Information	Table number	Number of characters
Record descriptor word	000	8
Hexadecimal identifier	00	2
Structure code	0	6
Call type	1	4
Sensor type	2	4
Sensor identification	3	8
Recording office type	4	4
Recording office identification	5	8
Date	6	6
Timing indicator	7	6
Study indicator	8	8
Completion indicator	280	4
Operator action	11	2
Service feature	12	4
Originating NPA	13	4
Originating number	14	8

Table 73 AIN Call Completion AMA structure code 220 (Continued)

Information	Table number	Number of characters
Overseas indicator	15	2
Terminating NPA	6	6
Terminating number	17	8
Connect time	18	8
Elapsed time	19	10
Service logic program identification	77	10

Table 74 lists all the possible modules that can be appended to AMA structures 220 and 221. Not all of the modules can appear on a record at the same time. Some of these modules have been introduced or enhanced by AIN SSP. Some modules are explained in further sections. See TR-NWT-001100, BAF Requirements for detailed descriptions of other AMA modules.

Table 74 Appended modules for structures 220 and 221

Module code	Module name	New/Change/Unchanged
Mod 021	Carrier access (originating)	Unchanged
Mod 022	Long duration	Unchanged
Mod 023	WATS	Unchanged
Mod 024	PSDS	Unchanged
Mod 025	Circuit seizure	Unchanged
Mod 027	Business customer ID	Unchanged
Mod 029	Alternate billing number	Unchanged
Mod 030	Translation settable	New
Mod 039	Service logic program ID	New
Mod 040	Digits	New
Mod 070	ISDN core	Unchanged
Mod 071	ISDN core (abv)	Unchanged
Mod 102	Authorization code	Unchanged

Table 74 Appended modules for structures 220 and 221 (Continued)

Module code	Module name	New/Change/Unchanged
Mod 103	Account code	New
Mod 104	Trunk network number	Unchanged
Mod 307	Line number	Changed

AIN-specific AMA recording takes place when an AMAslpID parameter is received in a response message. In addition to the AMAslpID parameter, other optional AMA parameters may be received in the response message and used by SSP billing. These parameters are recorded in some of the AMA modules listed above. Table 75 lists the AMA-related parameters and the associated module used to record the information.

Table 75 AIN AMA-related message parameters

Message parameter	Module name	Module number
AMAAAlternateBillingNumber	Alternate Billing Number	Mod 029
AMABusinessCustomerID	Business Customer ID	Mod 027
AMALineNumber	Line Number	Mod 307
AMAslpID	Service Logic Program ID	Mod 039
PrimaryBillingIndicator	Translation Settable	Mod 030
AlternateBillingIndicator	Translation Settable	Mod 030
SecondAlternateBillingIndicator	Translation Settable	Mod 030
OverflowBillingIndicator	Translation Settable	Mod 030
AMADigitsDialedWC	Digits	Mod 040
PrimaryCarrierID	Carrier Access	Mod 021
AlternateCarrierID	Carrier Access	Mod 021
SecondAlternateCarrierID	Carrier Access	Mod 021
PrimaryTrunkGroup	Trunk Network Number	Mod 104
AlternateTrunkGroup	Trunk Network Number	Mod 104
SecondAlternateTrunkGroup	Trunk Network Number	Mod 104

A default Call Type and default Service Feature are used in AIN AMA recording. Call Type and Service Feature are normally determined by switch-based translations. Whenever these values cannot be determined by switch-based translations, the default Call Type, 047, and default Service Feature, 027, is recorded in the AMA structure. It is possible that the off-board processor may specify Call Type and Service Feature in the AMA billing indicator parameters (PrimaryBillingIndicator, AlternateBillingIndicator, SecondAlternateBillingIndicator and OverflowBillingIndicator) in a response message. In this case, the Call Type and Service Feature is stored in Translation Settable Module 030. The Call Type and Service feature values supplied by the off-board processor are never recorded in the AMA structure.

7.1 Translation Settable module 030

Translation Settable Module 030 (see Table 76) records the Call Type or Service Feature code returned by the off-board processor, or MBI information encountered in SSP translations. Module 030 may appear up to three times in the same AMA record.

Table 76 Translation Settable module 030

Information	Table number	Number of characters
Module code	88	4
Context ID	152	4
Translation settable field	89	4

7.2 Service Logic Program Identification module 039

Service Logic Program Identification module 039 (see Table 77) records the AMAslpIDs received in a response message from the off-board processor. Note that the first AMAslpID received from the off-board processor is recorded in the base AIN structure (0220 or 0221). Subsequent AMAslpIDs are recorded in appended 039 modules. The number of times Module 039 may appear in the same AMA record is based on the maximum number of times a call may trigger. This value is set by office parameter AIN_MAX_SERIAL_TRIGGERS that has a range of 1 to 8.

Table 77 Service Logic Program Identification module 039

Information	Table number	Number of characters
Module code	88	4
Service logic program identification	77	10

7.3 Digits module 040

Digits module 040 (see Table 72) records AMA digits returned by the off-board processor. The AMA parameter AMADigitsDialedWC as well as the outpulse number (used in private networks) are recorded in this module. There can be at most 6 module code 040 containing AMADigitsDialedWC per AMA record. This limit does NOT apply to module code 040 containing the outpulse number, that is, there could be 7 module code 040 in one AMA record, 6 for AMADigitsDialedWC and 1 for the outpulse number

Table 78 Digits module 040

Information	Table number	Number of characters
Module code	88	4
Digits identifier	78	4
Significant digits next field	55	4
Digits dialed 1	32	12
Digits dialed 2	33	14

7.4 Account Code/CDAR module 103

Account Code/CDAR module 103 (see Table 79) records account codes collected by a switch-based feature. Previously, the first character of the Structure Code field indicated that CDAR information was appended to the record. Beginning in BCS36, module 103 is appended to the base structure, and the structure code field is not marked. This change applies to all AMA (not AIN-specified), as per Bellcore TR-NWT-001100.

Table 79 Account Code/CDAR module 103

Information	Table number	Number of characters
Module code	88	4
Significant digits next field	55	4
Account code/CDAR	126	16

7.5 Line Number module 307

Prior to this feature, Line Number module 307 was used only for TOPS AMA recording. The Line Number field in module 307 is expanded to make this module applicable to AIN AMA recording.

Line Number module 307 (see Table 80 on page 281) records the original calling party ID, incoming terminating number, or automatic number

identification (ANI) delivered. The AMA parameter, AMALineNumber, is recorded in this module. Module 307 may appear up to two times in the same AMA record.

Table 80 Line Number module 307

Information	Table number	Number of characters
Module code	88	4
Line number type	423	4
Numbering plan area	16	6
Line number	17	8

Part II OAMP

Part II: “OAMP” consists of the following:

Chapter 8: “Network management” on page 287

Chapter 9: “Resource monitoring” on page 293

Chapter 10: “Information revision messages” on page 313

Chapter 11: “Operational measurements for AIN” on page 327

Chapter 12: “OM group EXT” on page 341

Chapter 13: “OM group AIN” on page 347

Chapter 14: “OM group AINICOFF” on page 367

Chapter 15: “OM group AINICSUB” on page 381

Chapter 16: “OM group AINNCR” on page 397

Chapter 17: “OM group AINOGOFF” on page 409

Chapter 18: “OM group AINOFSUB” on page 425

Chapter 19: “OM group AINOFSB2” on page 451

Chapter 20: “OM group FTROM” on page 457

Chapter 21: “AIN message tracing tool” on page 463

Chapter 22: “Translation verification tool for AIN” on page 483

Chapter 23: “TSTQUERY tool” on page 635

Chapter 24: “AIN Scope Change tool (AINSCT)” on page 663

Chapter 25: “Other CI commands for AIN” on page 693

Chapter 26: “Trouble locating for AIN” on page 733

Chapter 27: “Logs for AIN” on page 749

Chapter 28: “AUD579” on page 751

Chapter 29: “AIN300” on page 753

Chapter 30: “AIN301” on page 755

Chapter 31: “AIN302” on page 757

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Chapter 33: “AIN304” on page 761

Chapter 34: “AIN500” on page 763

Chapter 35: “AIN501” on page 765

Chapter 36: “AIN510” on page 767

Chapter 37: “AIN511” on page 769

Chapter 38: “AIN600” on page 771

Chapter 39: “AIN601” on page 775

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Chapter 42: “AIN611” on page 785

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Chapter 47: “DFIL109” on page 819

Chapter 48: “DFIL320” on page 821

Chapter 49: “Game100” on page 823

8 Network management

Automatic code gapping (ACG) is a network management mechanism used to control network congestion. When an SCP becomes congested with queries, it can request that the SSP slow down or stop sending queries for a desired length of time.

Code gapping can be initiated from the SCP in the following two ways:

- automatically with SCP initiated code control
- manually with service management system (SMS) originated code control (SOCC).

The manual SOCC method complements the automatic SCP method. The controls are managed on the SSP, in either an SCP or SMS control list.

AIN ACG has the following features:

- alerting the SCP when an attempt to add to a control list fails because the control list is full
- support of private-gap intervals and national-gap intervals
- supports global restores for both SCP and SMS control lists

An SMS or SCP control list can have up to 256 controls.

Note: ACG functionality, when it accompanies Create_Call, behaves the same way as an ACG message that accompanies any call-related AIN message.

8.1 ACG messages and parameters

AIN ACG supports the following ACG messages:

- ACG
- ACG_Global_Ctrl_Restore, that can be sent from the SCP to the SSP in a query package

- ACG_Global_Ctrl_Restore_Success, that can be sent from the SSP to the SCP in a response Package
- ACG_Overflow, that can be sent from the SSP to the SCP in a unidirectional Package

See Section 6.4.5 “Non call-related message processing” on page 249. Note that ACG overflow notification is not provided by the Termination_Notification message.

8.2 ACG control list overflow

AIN ACG sends an ACG_Overflow message to notify the SCP that is initiating the add request, that the control was not added. When an overflow condition occurs, the following events occur:

- An AIN300 or AIN301 log is generated.
- The SCPOVLDO or SMSOVLDO OM (OM group AINACG) increments.
- The ACG_Overflow message is sent to the SCP in a unidirectional TCAP package.
- OM register NAOVFW increments (OM group AINNCR).

8.3 Gap intervals

The gap interval is the length of time queries are blocked. After this interval expires a query is allowed. After the allowed query is sent, the gap interval is reset and queries are again blocked until the gap interval expires. This cycle repeats until the gap duration has expired.

Table 81 lists the supported values for the gap intervals for SCP initiated and SMS initiated controls.

The gap intervals shown are average intervals, with the actual interval is randomly chosen from a uniform distribution so that the result is as follows:

- between 90% and 110% of the average value for SCP controls
- between 50% and 150% for SMS controls

This is done to prevent synchronization problems that can arise when several SCPs implement code gapping controls against the same code. The random

determination is repeated each time an interval expires to set the length of the next interval.

Table 81 Gap interval values

Gap interval parameter	Average interval (s)	
	SCP (PRIV) initiated	SMS (NATL) initiated
0	0 (Note 2)	Remove control
1	3	0.0 (control exclusion)
2	4	0.1
3	6	0.25
4	8	0.5
5	11	1.0
6	16	2.0
7	22	5.0
8	30	10.0
9	42	15.0
10	58	30.0
11	81	60.0
12	112	120.0
13	156	300.0
14	217	600.0
15	300	infinity (block all queries)
16	Remove Control	N/A (Note 3)
17	.1	N/A (Note 3)
18	.25	N/A (Note 3)
19	.5	N/A (Note 3)
20	1	N/A (Note 3)
21	2	N/A (Note 3)

Table 81 Gap interval values (Continued)

Gap interval parameter	Average interval (s)	
	SCP (PRIV) initiated	SMS (NATL) initiated
Note 1: The system does not support Intervals in shaded areas for this release. Note 2: The system permits control exclusion (SMS gap interval = 0.0) only for SMS initiated controls. An SCP gap interval = 0 is a fatal application error. When the ACG component was part of a multi-component package, the call-related component of the message is not affected. Note 3: The system treat messages containing this value are as fatal application errors. When the ACG component was part of a multi-component package, the call-related component is not affected by the ACG fatal application error.		

8.4 Global restore of a control list

AIN ACG allows global re-initialization of the control lists based on one of four request types specified in the ACG_Global_Ctrl_Restore message. The message is generated through the SCP or by SSP operating company personnel using the CI command ACGRESTORE. The types of restore requests that are supported are as follows:

- remove all items from the AIN outgoing control lists (both SMS and SCP)
- remove all SMS controls
- remove all SCP controls
- remove all SMS controls, except controls with a zero gap interval

When a restore has been requested, the SSP alerts the SCP and operating company personnel as follows:

- when the request was initiated by an SCP
 - An ACG_Global_Ctrl_Restore_Success return result is sent to the SCP.
 - OM register NAGCR increments (OM group AINNCR) once for each incoming ACG_Global_Ctrl_Restore from the SCP.
 - Log AIN612 is generated, specifying the control lists that were restored, the source of the restore request, the type of restore request,

- the number of controls deleted, and the SSN and PointCode of the SCP originating the restore request.
- OM register NAGCRS increments (OM Group AINNCR) once for each ACG_Global_Ctrl_Restore_Success message sent by the SSP to the SCP.
- when the request was initiated by the SSP operating company personnel
 - Warnings and confirmation prompts are provided to the operating company personnel.
 - The results of the restore request is displayed on the operating company personnel's terminal.
 - An AIN612 log is generated specifying the control list(s) restored, the source of the restore request, the type of restore request, and the number of controls deleted.
- Optionally, an operating company can elect to use audible or visual alarms to alert them to restore events. This can be achieved by datafilling table OMTHRESH as indicated in NTP 297-8021-327, Volume 24, to set the alarm and the conditions which should cause the alarm.

See Chapter 11: “Operational measurements for AIN” on page 327 for a description of the AIN612 log.

8.4.1 ACGRESTORE command

See Section 25.10.2 “Automatic Code Gapping commands” on page 711.

8.5 Limitations

See Section 20.7 “ACG limitations” on page 683.

9 Resource monitoring

This chapter describes the feature AIN Monitor_For_Change for lines and hunt groups. Monitor_For_Change for lines was developed in NA006 and enhanced in NA008 for ISDN and KSET agents. Monitor_For_Change for hunt groups was developed in NA012.

9.1 Overview

Monitor_For_Change allows an SCP to request the SSP to monitor the status of a facility (a line or a multi-line hunt group). When the status of the facility matches that requested by the SCP, a message is sent to the SCP indicating a StatusMatch. When the status of the facility is different from that requested by the SCP, the facility is monitored either till a time when the status matches that requested by the SCP or the monitor time specified by the SCP expires.

Monitor_For_Change is currently supported for single lines and for multi-line hunt groups.

9.1.1 Monitoring single lines

The overall functionality of the Monitor Resources feature for lines is illustrated in Figure 104, "Process for monitoring single lines" on page 300. The individual functional blocks shown are then further described in the following sections.

When the SSP receives a Monitor_For_Change message from the SCP it must undergo a series of checks to determine when the line matches the state requested by the FacilityStatus parameter. When the status of the line does not match the requested status and the MonitorTime parameter is non-zero, the SSP sets up a monitor on the line. When the status of the line changes to the desired state, the SSP returns a Status_Reported message with the FacilityStatus parameter set to StatusMatch. When the timer expires before the line switches to the desired state, the SSP returns a Status_Reported message with the StatusCause parameter set to TimeOut.

When the BearerCapability parameter is present in the Monitor_For_Change message and a call can be established using the specified BearerCapability, the SSP must consider the applicability of switch-based features.

When the BearerCapability parameter is not present in the Monitor_Resources message then the physical state of the line is used directly to determine the response, without considering any switch-based features.

When a monitor is active on a line the switch can consider a change in switch-based features that affect the status of the line. CCW is the only switch-based feature supported in the NA012 release that can result in a change of line status during the duration of the monitor.

For example, a monitor is set up to determine when the line becomes busy. At some point in the call the dial cancel call waiting feature is invoked. The SSP immediately sends a Status_Reported message with parameter StatusCause set to StatusMatch.

The parameters used in the Monitor Resources messages are described in Section 9.2.1, "Monitor_For_Change SCP request message" on page 295, Section 9.2.2, "Monitor success SSP response message" on page 298, Section 9.2.3, "Status_Reported SSP response message" on page 298.

9.1.2 Monitoring hunt groups

The overall functionality of the monitor resources feature for hunt groups is illustrated in Figure 105, "Process for monitoring hunt groups" on page 307. The individual functional blocks shown are then further described in the following sections.

The Mlhg field in parameter FacilityGID is used to monitor a hunt group and its value ranges from 0 to 32767. When parameter FacilityGID is present and parameter CalledPartyID is not present, the contents of parameter FacilityGID field is used for further processing. When parameters FacilityGID and CalledPartyID are present, parameter FacilityGID is ignored and the message is processed as in single lines. The presence of a valid BearerCapability parameter in the Monitor_For_Change message determines when switch-based features are considered in determining the status of the hunt group. The physical state of the hunt group is used to determine the status when parameter BearerCapability is not present. When the status of the hunt group matches the status requested by the SCP, a Status_Reported message with the StatusCause parameter set to StatusMatch is sent to the SCP.

A monitor is set up on the hunt group when the status of the hunt group does not match the requested state in Monitor_For_Change message and the MonitorTime parameter is non-zero. A Monitor_Success message is sent immediately by the SSP when a monitor can be setup on the hunt group.

A Status_Reported message with the FacilityStatus parameter set to StatusMatch is sent by the SSP when the status of the hunt group changes to the desired state before the timer expires. When the timer expires before the

hunt group changes to the desired state, the SSP returns a Status_Reported message with the StatusCause parameter set to timeOut.

A hunt group is considered idle when at least one of the members is idle. The hunt group is also considered idle when the pilot subscribes to CWT, all members of a hunt group are in Call Processing busy state and no call is waiting.

A hunt group is considered busy when all members of the hunt group are in Call Processing busy state. A hunt group is also considered busy when all the members are in Call Processing Busy state, pilot subscribes to CWT and a call is already on hold.

9.2 Messages

Communication between the SCP and the SSP is by SS7 with TCAP user parts. For monitor resource, there are three TCAP messages:

Monitor_For_Change SCP request message, Monitor_Success switch response message and Status_Reported switch response message.

9.2.1 Monitor_For_Change SCP request message

The Monitor_For_Change message is an SCP query message requesting the SSP to notify it of the status of a particular resource. The parameters that make up the Monitor_For_Change message are as follows:

- BearerCapability (O)
- CalledPartyID (O)
- FacilityGID (O)
- FacilityMemberID (O)
- FacilityStatus (M)
- MonitorTime (M)

A Monitor_For_Change message must be received in a query package, in an invoke (last) component type. When a Monitor_For_Change operation is received in any other component type, a fatal application error of “Unexpected Communication” is raised.

The parameters must appear in the following order or an unexpected parameter sequence, fatal application error is reported to the SCP:

- FacilityStatus
- MonitorTime
- CalledPartyID
- FacilityGID

- FacilityMemberID
- BearerCapability

Unknown or extraneous parameters are ignored.

When either of the mandatory parameters is missing, it is reported as missing mandatory parameter, this is a fatal protocol error.

While decoding each parameter, the following items are checked:

- Parameter Tag Type is SIMPLE_PARAMETER
- TCAP Parameter Class is CONTEXT_SPECIFIC_CLASS
- TCAP Parameter Form is PRIMITIVE

When any of these items does not match, the parameter type cannot be determined and the parameter is not decoded. This results in a missing mandatory parameter error.

9.2.1.1 FacilityStatus parameter

Parameter FacilityStatus is verified to ensure that it does not exceed the maximum length and that it has one of the following values:

- busy (0)
- idle (3)

Any error is reported as an erroneous data value, fatal application error.

9.2.1.2 Monitor time parameter

Parameter MonitorTime is checked to ensure that it does not exceed the maximum length. No checking is done to ensure that the BCD digits are in the range 0 to 9 (that is, it is possible for the digits to be hexadecimal values A through F).

9.2.1.3 CalledPartyID parameter

Either parameter CalledPartyID or FacilityGID must be present. When both parameters are present, parameter FacilityGID is ignored and parameter CalledPartyID is used. When neither are present, a fatal application error of missing conditional parameter is raised.

See Section 6.4.4.19.8, "CalledPartyID parameter" on page 222.

9.2.1.4 FacilityGID parameter

Parameter FacilityGID can take four different values, but for monitoring hunt groups the only valid field would be MLHG. This field contains the index of a hunt group that must be monitored. These indices are mapped to valid hunt

groups on the SSP. According to BellCore specifications, Mlhg is an integer in the range of 1 through 2047, inclusive.

The Mlhg field in parameter FacilityGID, maps to the hunt group index in table HUNTGRP.

Note 1: This activity supports extended range of FacilityGID parameter from 0 to 32767 and a Bellcore specification regarding the extended range has been sought.

Note 2: Either the CalledPartyID or FacilityGID must be present. When both are present, FacilityGID is ignored and CalledPartyID is used. When neither are present, a fatal application error of missing conditional parameter is raised.

9.2.1.5 FacilityMemberID parameter

This parameter contains an identifier of a trunk group member of MLHG member.

For AIN Service Enablers, The range of values for this parameter is 1 through 2047, inclusive for MLHG member IDs, because the FacilityGID parameter can only be set to MLHG.

For AIN Essentials, the range of values for this parameter is 0 through 4095, inclusive for trunk IDs and 1 through 2047, inclusive for MLHG member IDs. It is checked to ensure that its length does not exceed the allowable maximum and that its value in the appropriate range

9.2.1.6 BearerCapability

Any error in parameter BearerCapability is reported as an erroneous data value fatal application error.

When parameter BearerCapability is not included in the Monitor_For_Change message, only the physical state of the facility is used to determine when the facility is busy or idle. For ISDN, when all channels allocated to a DN are in use the facility is busy, when a channel is not in use the facility is idle.

When parameter BearerCapability is included in the Monitor_For_Change message, the SSP must determine when a call using the specified BearerCapability can be established.

For a hunt group with POTS, RES, IBN, or KSET agents as members, the only valid BearerCapability is Speech. When the BearerCapability is not valid for the specified agent a Status_Reported message is sent to the SCP with parameter FailureCause set to unavailableResources. When the BearerCapability is valid for the hunt group with specified agents, it is required

to consider the applicability of switch-based features when determining the status of the hunt group.

See Section 6.4.4.19.4, "BearerCapability parameter" on page 220.

9.2.2 Monitor success SSP response message

The Monitor_Success message is an SSP response message that is sent from the SSP to the SCP in a Conversation Package Type. This message is sent when the SSP has successfully started monitoring the resource for the status (either idle or busy) as determined from the Monitor_For_Change message.

The Monitor_Success message contains parameter FacilityStatus. Parameter FacilityStatus contains the status of the facility when the monitor was started. The monitor resource application is responsible for ensuring that the parameter data of the Monitor_Success message that is passed to the AIN messaging software are correct.

The Monitor_Success message must be a conversation package with an invoke (not last) component with an operation code of Monitor_Success. Parameter FacilityStatus (mandatory) contains the status that the monitor resource application is waiting for (either busy or idle).

9.2.3 Status_Reported SSP response message

The Status_Reported message is an SSP response message that is sent from the SSP to the SCP in a response package type. This message is sent when the SSP has determined that the monitored resource has reached the required status or the monitor timer has expired.

A Status_Reported message contains the following parameters:

- FacilityStatus (optional)
- StatusCause(optional)
- FailureCause (optional)

Although all the parameters are optional, at least one of the parameters must be present in a Status_Reported message.

The Monitor Resource application is responsible for ensuring that the parameter data of the Status_Reported message to the AIN messaging software are correct.

9.3 Monitor_For_Change process

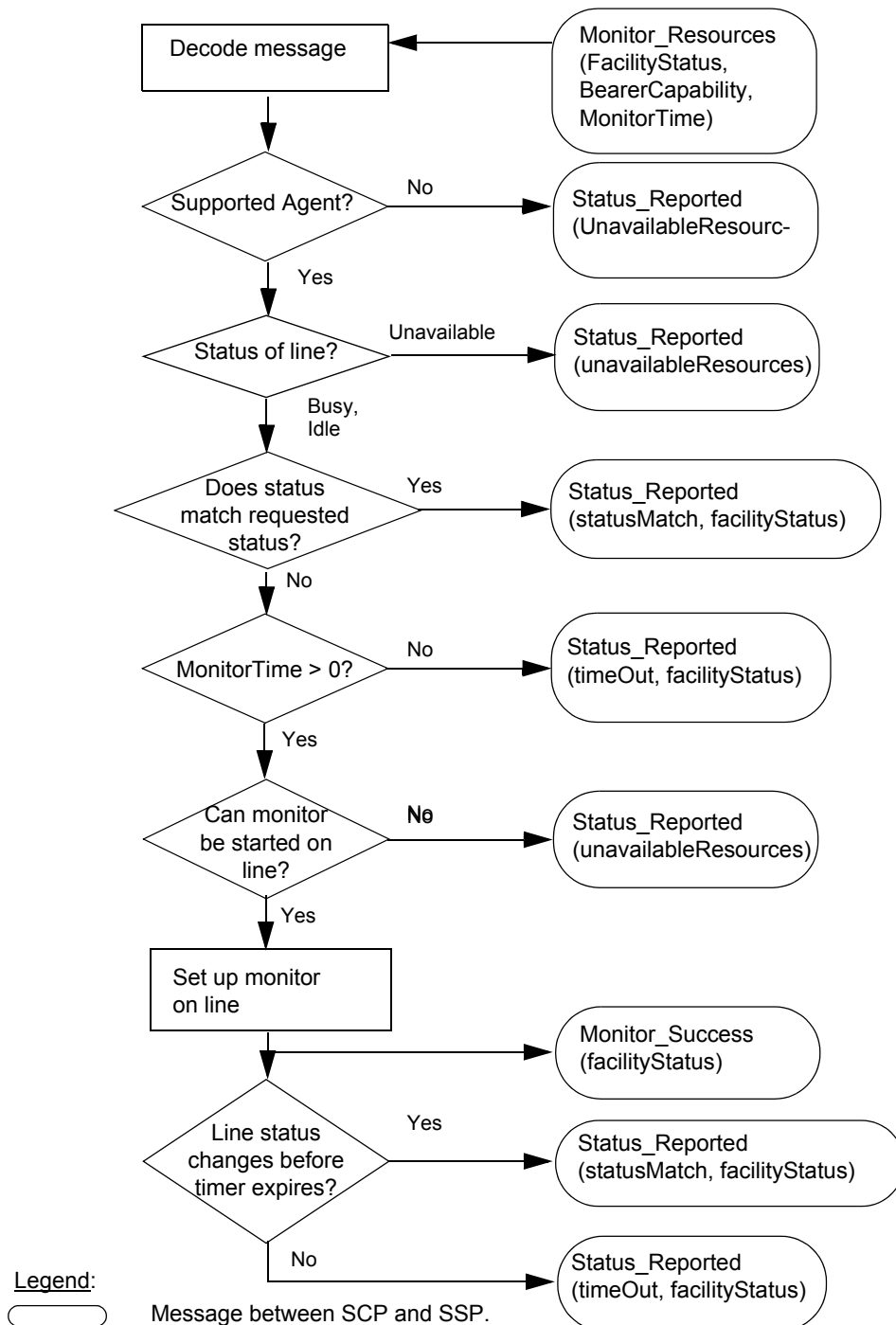
This function allows the SCP to query the SSP for the status of a particular resource.

9.3.1 Monitoring single lines

Single lines can be monitored when the CalledPartyID parameter in the monitor for change (MFC) query contains the directory number (DN) of the line to be monitored. The process of monitoring lines is as follows:

When the SSP receives a Monitor_For_Change message from the SCP, it undergoes a series of checks to determine when the line matches the state requested by parameter FacilityStatus. When the status of the line does not match the requested state and parameter MonitorTime is non-zero then the SSP sets up a monitor on the line. When the status of the line changes to the desired state within the monitor time, the SSP returns a Status_Reported message with parameter FacilityStatus set to StatusMatch. When the timer expires before the line switches to the desired state then the SSP returns a Status_Reported message with the StatusCause parameter set to timeOut.

See Figure 104 “Process for monitoring single lines” on page 300, for an illustration of the steps described in the preceding paragraph.

Figure 104 Process for monitoring single lines

9.3.1.1 Check for supported agents

Refer to Chapter 4: “Agent support” on page 127 for the agents that are supported. When the agent is not supported a Status_Reported message with StatusCause set to UnavailableResources is sent to the SCP. When the agent is supported, further checks are done as follows.

9.3.1.2 Determining the status of a line

The status of a line is determined in the following manner: when BearerCapability is present in the message, it is checked for its validity. When it is invalid or is not supported by the agent involved, then a Status_Reported message with StatusCause set to UnavailableResources is sent to the SCP.

When the BearerCapability is not present, the physical state of the agent is checked. When the physical state is busy, the line is considered to be busy. When the physical state is idle, the line is considered idle. When it is any other state, the line is considered to be unavailable.

When the BearerCapability is present and is valid, then termination restriction features are checked for on the line. When termination is restricted, the agent is considered busy, otherwise further check is done to find the physical state of the Hunt Groups. When the physical state is busy, the line is considered to be busy. When the physical state is idle, the line is considered idle. When it is any other state, the line is considered to be unavailable.

When the physical state is busy and the agent is in talking state, the termination facilitating features (for example, call waiting, CWI for IBN lines, AFC and ACOU for ISDN BRAFS) are checked. When CWT is assigned, cancel call waiting (CCW) is also checked for. When it is possible to terminate a call on the agent using the features mentioned here, the agent is considered idle. Otherwise, the agent is busy.

Table 82 describes the interaction between Monitor_For_Change for lines and call waiting/cancel call waiting.

Table 82 Interaction between MFC for lines and call waiting/cancel call waiting

Call waiting subscribed?	Is cancel call waiting active?	Call on hold?	Line is considered to be:
Yes	No	No	Idle
Yes	Yes	No	Busy
Yes	No	Yes	Busy

Call waiting cannot be assigned to ISDN BRAFS lines. Instead, additional function call (AFC) and/or additional call offer unrestricted (ACOU) can be assigned to them.

When AFC is not assigned to the line, the status of the line is the same as determined during the hardware status check.

When AFC is assigned and ACOU feature package is not present, a line is considered idle when the line is hardware idle or there is at least one idle AFC key; otherwise the line is considered to be call reference busy.

When AFC is assigned and ACOU feature package is present, the status of an EKTS line is determined as explained in the previous paragraph. A non EKTS line is considered idle when the B channel is available. Otherwise, when ACOU is not assigned the line is considered interface busy.

When ACOU is assigned to a non-EKTS line, the line is considered idle when the following conditions are met:

- the network busy counter (NBC) of that line is less than the network busy limit (NBL)

Note 1: NBC is the counter maintained by the switch to keep track of the number of active call references in use for called-user notification of waiting calls (for a given DN served by a non-EKTS ISDN interface).

Note 2: NBL is the maximum number of call references that the switch allows for called-user notification of waiting calls (for a given DN served by a non-EKTS ISDN interface).

- the line is hardware idle or at least one AFC key is idle (otherwise it is considered call reference busy)

When NBC is equal to NBL, it is considered notification busy.

When the agent is notification busy or call reference busy, it is considered busy.

9.3.1.3 Determining when a monitor needs to be set up

The status that has been determined is compared with that requested by the SCP. When they match, a Status_Reported message is sent immediately to the SCP with StatusCause parameter set to StatusMatch and FacilityStatus parameter set to the status of the line.

When the status of the line does not match that requested by the SCP, then the Monitor Time is checked for. When it is zero then a Status_Reported message is sent back immediately indicating the status of the facility in the FacilityStatus parameter and the StatusCause parameter is set to timeout.

When the status of the line does not match the requested status and the Monitor time value is non-zero, an attempt is made to start a monitor on the line in order to monitor any status change on the line.

9.3.1.4 Setting up a monitor

When the line is idle, there is no condition that would preclude the setting up of a monitor. In the case where the line is busy, a monitor is not set up under the following conditions:

- When the line is connected to an operator station.
- When termination to the line is restricted. The features indicating the termination restriction are typically long-duration in nature, and are not expected to change frequently for a given line.
- When an ISDN BRI agent is interface busy, a monitor cannot be started because different DNs need to be monitored to determine the B-channel availability.
- When the line has subscribed to Call Waiting and Call state of the line is not stable (i.e not TALKING), then the line is considered unavailable for monitoring, as for Call Waiting to become applicable the line state has to become stable (Monitor Resources can not detect the Call state transition to TALKING). However for KSETs and ISDN BRAMFT agents, when the Call Waiting key is already busy on a call, then the line can be monitored even when the Primary DN Call state is unstable, because in this case the call on the Primary DN is considered held.
- When the status checking indicates that the line is not available.

When a monitor cannot be set up due to any of the previously-mentioned reasons, a Status_Reported message is sent to the SCP with the FailureCause parameter set to UnavailableResources

9.3.1.5 Monitoring a line

A monitor is set up on the requested line. Once the monitor is active on a line (and a call, when there is a call associated with the line), one of the following two scenarios can occur:

- either an event occurs on the line or call (when present), that changes the status to match the status requested by the SCP
- the monitor times out

9.3.1.5.1 Events monitored on an idle line When parameter BearerCapability is null, the events monitored on an idle line are: the agent going off-hook and a call landing on it.

Certain events can cause an idle line to change status to busy while a monitor is active, when a valid BearerCapability parameter is present in the query.

When such an event occurs, the monitor is stopped and a Status_Reported message is sent to the SCP with parameter FacilityStatus set to busy and parameter StatusCause set to StatusMatch.

Table 83 illustrates the events (monitored on an idle line) that can cause a status change while a monitor is active.

Table 83 Events monitored on an idle line

State	Event
On-hook	Telephone is taken off-hook.
Off-hook, talking, CWT subscribed, no call on hold, cancel call waiting inactive	• Telephone goes on-hook, then off-hook. • Another caller attempts to connect. • Flash hook and dial cancel call waiting (CCW) code. • CWT key on a KSET/ISDN BRAMFT gets another call.
Off-hook, talking, one AFC key available	• Another Caller attempts to connect. • AFC key is used to originate a call.

9.3.1.5.2 Events monitored on a busy line A line is considered busy when the telephone is off-hook in call processing busy state. This means that the line can be involved in a call but cannot be in a state such as lockout.

When the BearerCapability parameter is null, then the only event that is monitored for on a busy line is the line going on hook.

When a valid BearerCapability parameter is present in the query, then the supported switch-based features are also considered by the monitor. The state of an ISDN BRAFS agent is described in Section 9.3.1.2 “Determining the status of a line” on page 301.

Table 83 “Events monitored on an idle line” illustrates events that cause a busy line to change status to idle while a monitor is active. When such an event occurs, the monitor is stopped and a Status_Reported message is sent to the SCP with parameter FacilityStatus set to idle and parameter StatusCause set to StatusMatch.

Table 84 illustrates the events (monitored on an busy line) that can cause a status change while a monitor is active.

Table 84 Events monitored on a busy line

State	Event
Off-hook (dial tone, listening to ringback, listening to announcement)	Telephone is put on-hook.
Off-hook, talking, CWT not subscribed	Telephone is put on-hook.
Off-hook, talking, CWT subscribed, cancel call waiting active	Telephone is put on-hook.
Off-hook, talking, CWT subscribed, cancel call waiting inactive, second call on hold.	Either remote party hangs up. Telephone is put on-hook.
AFC subscribed, ACOU assigned, Notification busy	A waiting call is answered. Telephone is put on-hook. Remote party hangs up.
AFC subscribed, ACOU package not present, no AFC key is idle.	Remote party hangs up. Telephone is put on-hook.

9.3.1.5.3 Monitor times out When no transition in line state occurs during the delay specified in the Monitor_Resource message, the monitor times out. In this case, a Status_Reported message is sent to the SCP with parameter FacilityStatus set to the current status of the facility (either busy or idle) and parameter StatusCause set to timeOut.

However, in the case of a timeOut, FacilityStatus reported in the Status_Reported message is not the actual status of the facility under the following conditions:

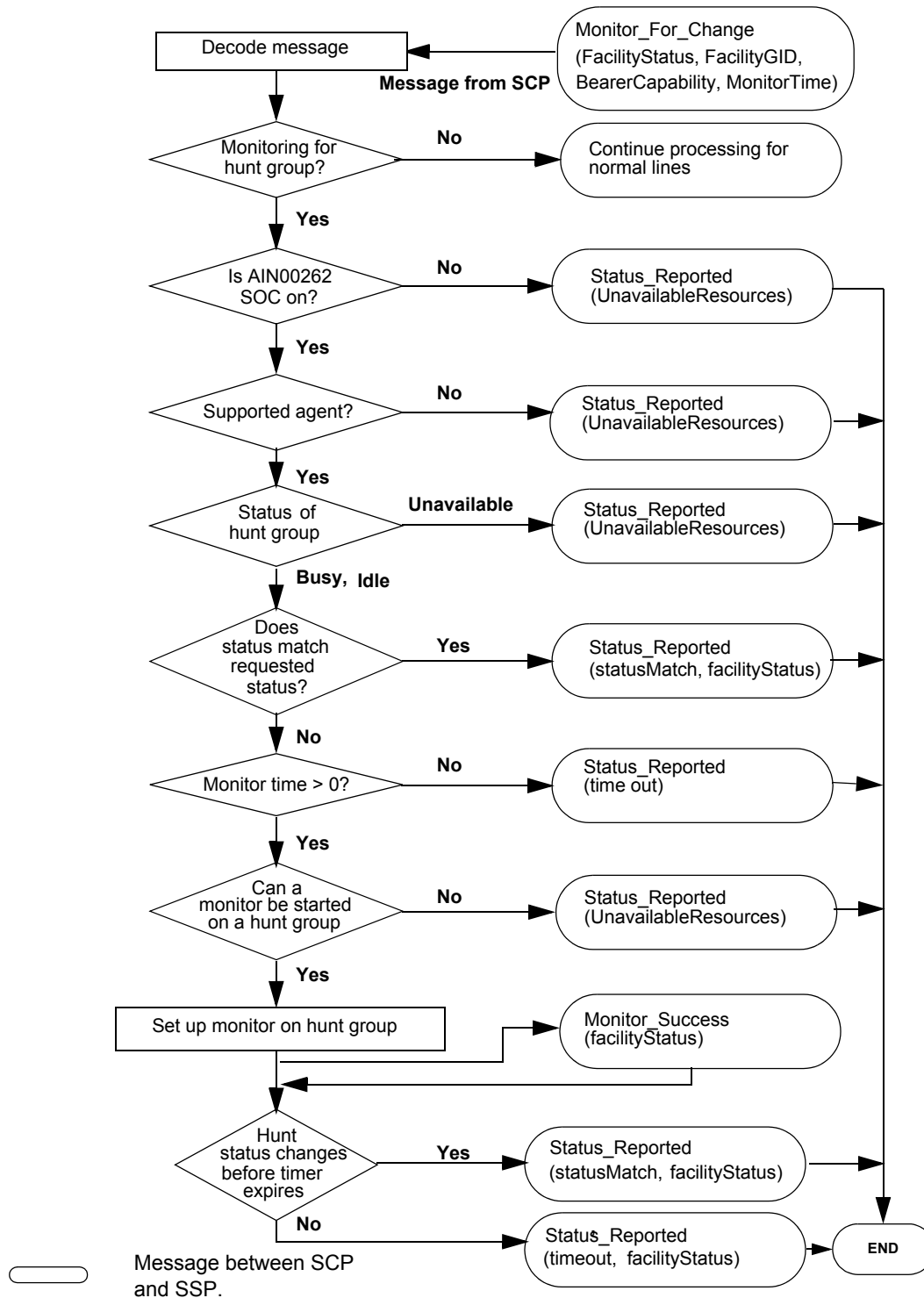
- Facility changes to a state other than idle or busy during the monitor period. For example, when through a MAPCI command the state is changed to manual busy (MB).
- A termination restriction feature is assigned (for example, DTM) to the facility through SERVORD or becomes active (for example, DND) on the facility during the monitor period.

9.3.2 Monitoring hunt groups

A hunt group can be monitored when the Monitor_For_Change message contains parameter FacilityGID and does not contain parameter CalledPartyID.

Figure 105 on page 307 illustrates the process for monitoring hunt groups.

Figure 105 Process for monitoring hunt groups



9.3.2.1 SOC check

AIN00262 is the SOC option for Monitor_For_Change for hunt groups. This should be turned on for any further processing of the message. When it is found idle, a Status_Reported message with StatusCause set to UnavailableResources, is sent to the SCP.

9.3.2.2 Check for supported agents

When the agent is not supported a Status_Reported message with StatusCause set to UnavailableResources is sent to the SCP. When the agent is supported, further checks are performed.

9.3.2.3 Determining the status of a hunt group

The status of a Hunt groups is determined in the following manner:

- When BearerCapability is present in the message, it is checked for its validity. When it is invalid or is not supported by the agent involved, then a Status_Reported message with StatusCause set to UnavailableResources is sent to the SCP. There is also a check to ensure that the BearerCapability in the message received matches that assigned to the Directory Number (DN) of the hunt group. When it does not then a Status_Reported message with StatusCause set to UnavailableResources is sent to the SCP
- When the BearerCapability is present and is valid, presence of SUS and PLP is checked on the hunt group and when either of them is present, a Status_Reported message with StatusCause set to UnavailableResources is sent to the SCP

The status check for the hunt group from this point differs for different agents. Every member in the hunt group is checked for its status. The status check depends on the agent involved. When the hunt group has POTS/RES/IBN/KSET agents, then the status checking would be as follows:

- Check the physical state of the member.
- When it is idle, check when BearerCapability was present in the message. When it was, then verify that termination is not restricted (termination is restricted when either RMB,DTM,DIN are present). When BearerCapability is not present or when it is present but termination is not restricted, the member would be considered idle.
- When the member is found to be idle after the checks done as mentioned previously, MSB or DND activation is checked for on the member. When either of these is active, the member would be considered busy. Otherwise it would be considered idle.

After the previously-mentioned checks are performed on all members, the status of the hunt group is determined as follows:

- all Members are in MB, LO, NEQ and INB state (hunt group is unavailable)
- all members have termination restricted on them (RMB, DTM or DIN) and the monitor request was for idle (hunt group is unavailable)
- hunt group is considered idle when at least one member in the hunt group is idle
- hunt group is considered busy when all members are busy at the end of the status check described previously and all are not in MB, LO, NEQ and INB state
- the hunt group is considered busy when all members are busy and call waiting (CWT) is not subscribed or when CWT is subscribed and there is a call waiting on the last member

For ISDN BRAFS hunt groups, every member in the hunt group is checked for its status. The following checks are performed for every member:

- check the physical state of the member
- when BearerCapability is present in the message, the call type of the member is checked for its compatibility with the BearerCapability specified in the message
- when an idle call appearance is found, verify that termination is not restricted on the member (when BearerCapability was present in the message). Termination is restricted when either RMB, DTM, or DIN are present
- when the member is idle after the checks are performed (previously mentioned), MSB activation is checked for on the member (when MSB is active, the member would be considered busy, otherwise it would be considered idle)

After the previously-mentioned checks are done on all members, the status of the hunt group is determined in the following way:

- Hunt Group is unavailable when
 - All Members have call type incompatible with the BearerCapability in the message.
 - All Members are in MB,LO,NEQ,INB state
 - All members have termination restricted on them (RMB,DTM or DIN) and the monitor request was for idle.
- Hunt group is considered idle when at least one member in the hunt group is idle after the status check. In case of a hunt group where all members are

busy, when call waiting (CWT) is subscribed and there is no call that is waiting on the last member, the hunt group would be considered idle.

- Hunt group is considered busy when
 - all members are busy at the end of the status check described previously
 - all are not in MB,LO,NEQ,INB state
 - at least one member has its call type compatible with the BearerCapability of the message.

9.3.2.4 Determining when a monitor set up is required

After the status of the hunt group has been determined to be either Busy or Idle, it is compared with the status requested in the Monitor_For_Change message received from the SCP. When they match, the SSP returns a Status_Reported message with the FacilityStatus parameter set to the hunt group status and the StatusCause parameter set to StatusMatch.

When MonitorTime value is zero no monitor is set up and the SSP shall send a Status_Reported message with the FacilityStatus parameter set to the hunt group status and the StatusCause parameter set to timeout.

When status of the hunt group does not match that requested in the Monitor_For_Change message and MonitorTime value is non-zero then a monitor is set up on the facility and a Monitor_Success message is immediately sent back to the SCP. The exception to this is when the hunt group is found to be unavailable. In that case a Status_Reported message with StatusCause set to UnavailableResources is sent to the SCP.

There can be only five monitors started on a facility. The maximum number of monitors that can be active on an SSP is limited to 2000.

9.3.2.5 Monitoring a hunt group

One of the following occurs when a monitor is successfully set up on a hunt group:

- the monitor times out, or
- the hunt group changes to the state requested in the Monitor_For_Change message before the timer expires

When a termination restriction feature gets added to any member of the hunt group after the monitor was started, then the results would be unreliable.

9.3.3 Events monitored on an idle hunt group

Events that are of importance while monitoring a hunt group for busy status are as follows:

- A member getting busy in a call (either by call origination or by terminating a call on it).
- A call waiting on the last member when all others are busy
- An idle hunt member getting deleted

Any of the previously-mentioned events can cause a hunt member to be treated as busy and if all members in the hunt group are busy due to any of these events, the hunt group would be considered busy. When the hunt group is found to be busy, the monitor is stopped and a Status_Reported message is sent to the SCP with parameter FacilityStatus set to busy and parameter StatusCause set to StatusMatch.

9.3.4 Events monitored on a busy hunt group

Events that are of importance while monitoring a hunt group for busy status are as follows:

- A member going idle (onhook).
- A call waiting on the last member disconnects (when the hunt group has CWT).

Any of the previously-mentioned events can cause a hunt member to be treated as idle and the hunt group is idle when any member is idle. When the hunt group is found to be idle, the monitor is stopped and a Status_Reported message is sent to the SCP with FacilityStatus parameter set to idle and StatusCause parameter set to StatusMatch.

9.3.5 Handling time out

When there is no transition in hunt group state during the Monitor Time period specified in the Monitor_Resource message, the monitor times out. In this case, a Status_Reported message is sent to the SCP with parameter FacilityStatus set to the current status of the facility (either busy or idle) and parameter StatusCause set to timeOut.

When a timeOut occurs, the FacilityStatus reported in the Status_Reported message is not the actual status of the facility under the following conditions:

Subscription of a termination restriction feature after a monitor is started does not impact the previous state of the hunt group, unless a state change occurs on the member.

The status sent during TimeOut is not reliable when the facility changes to a state other than idle or busy during the monitor period. For example, when using a MAPCI command, the state is changed to manual busy (MB).

9.4 Multiple monitors

When more than one monitor resources request is received for a hunt group and the status of the facility does not match the status requested by the SCP, each monitor resources request results in a separate monitor set up for that facility.

When the status of the facility changes to match the status requested by the SCP, each active monitor is stopped and one Status_Reported message per monitor is sent to the SCP with parameter StatusCause set to StatusMatch.

When one of the monitors times out before the status of the facility changes to match the status requested by the SCP, that monitor is stopped and a single Status_Reported message is sent to the SCP (the other monitors continue to be set up).

9.5 Agent support

See Section 4.11.1 on page 155 and Section 4.11.2 on page 156.

9.6 Error handling

See Section 19.1.3.4 “Non call-related failures” on page 654.

9.7 Limitations and restrictions

See Section 20.24.31.1 “Resource monitoring for lines” on page 711 and Section 20.24.31.2 “Resource monitoring for hunt groups” on page 711.

9.8 Feature interactions

See Chapter 22: “AIN/DMS-100 interactions (A and B)” on page 707, Chapter 23: “AIN/DMS-100 interactions (C)” on page 763, and Chapter 2: “AIN/DMS-100 interactions (S to Z)” on page 163 for feature interactions for Monitor_For_Change for hunt groups and lines.

10 Information revision messages

This chapter describes AIN Service Enablers Update message parameter processing.

10.1 Update_Request message and processing

This message allows the SCP to activate or deactivate the functionality of triggers Off-Hook_Immediate, Off-Hook_Delay, Off-Hook_Delay and Termination_Attempt at an SSP, when defined in a trigger group provisioning model.

This section describes the implementation of the Update_Request message and processing FS.

10.1.1 Update_Request message and processing

Table 85 lists the parameters that make up the Update_Request message.

Table 85 Update_Request message parameters

Parameter	Description
BearerCapability (O)	See Section 6.4.4.19.4 on page 220.
TriggerCriteriaFlag (O)	See Section 10.6 on page 323.
UserID (M)	See Section 10.7 on page 324.

10.1.2 Update_Data message and processing

Table 86 lists the parameters that make up the Update_Data message.

Table 86 Update_Data message parameters

Parameter	Description
FailureCause (O)	Functionality inherited from AIN Essentials.

10.2 Update message and processing

The Update message allows the SCP to perform the following tasks:

- activate or deactivate any trigger subscription
- update the provisioned value of the T-ONoAnswer and the T-TNoAnswer trigger timers
- activate or deactivate the Message Waiting Indicator (MWI)

The message also allows the SCP to instruct the SSP to modify internal SSP values. When the instructions in the Update message are successfully completed, the SSP sends an Update_Success message to the SCP. When the instructions are not successfully completed, the SSP sends to the SCP one of the following:

- an Application_Error message
- a Failure_Report message
- a Reject_Component message

These are generic error messages that are not specific to the Update message.

During an image dump, Update messages still write to the necessary protected data locations. The Update message and the Update_Success message also increment OM counters and SOC counters.

This section describes the implementation of the Update message and processing FS.

Table 87 lists the parameters that make up the Update message.

Table 87 Update message parameters

Parameter	Description
AdministrableObject (M)	See Section 10.3 on page 321.
AMASlpID (O)	See Section 13.10 “Register AMASLPID” on page 356.
Amp1 (O)	
Amp2 (O)	
ControlEncountered (O)	
EditListType (O)	
ExtensionParameter (O)	

Table 87 Update message parameters (Continued)

Parameter	Description
Note: Parameters in shaded areas are not supported in this message for this release.	

10.2.1 Trigger activation and deactivation

The Update Message allows the SCP to activate and deactivate any trigger subscription. Using the TriggerItemID and SSPUserResourceID contained in a TriggerItemAssignment, the SCP can set the appropriate trigger to the value of the ActivationStateCode. The ActivationStateCode can be either ON or OFF. The data of subparameters must be supplied even though they are optional. Failure to provide any of the subparameters results in an error as specified in Section 5.7.3.1 of GR-1298. Currently GR-1298/1299 does not define a way to activate/deactivate triggers subscribed to Customer Groups and PRI-B channels, therefore these triggers cannot be supported by Update functionality.

10.2.2 MessageWaitingIndicator activation and deactivation

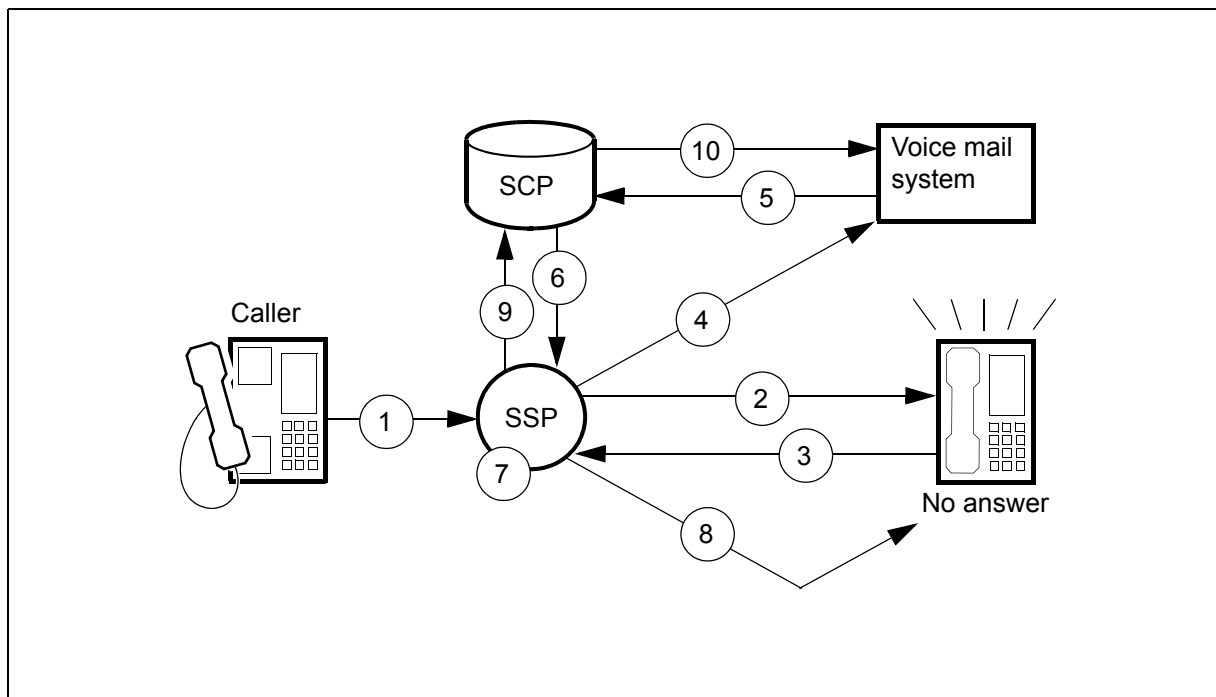
The MessageWaitingIndicator (MWI) is a logical item assigned to the user's DN that can be activated or deactivated. When the MWI is activated, the SSP indicates to the DN user "Messages waiting". This can be done with an audible indicator (Stuttered dial tone) or a visual indicator (Lamp) for analog lines or ISDN interfaces. When the MWI is deactivated, the SSP indicates to the DN user "No messages waiting" by turning off the indicator.

The Update message updates the status of the MWI. The SSPUserResourceID field of the Update message identifies the DN or DNCT associated with the MWI. The ServiceProviderID field identifies the message storage and retrieval system making the request. The SSP activates or deactivates the MWI status of the DN or DNCT based on the service and action stated in the UpdateGroups field.

The following scenario describes a call where an originating agent attempts to call a terminating agent and gets forwarded to a voice mail service. See Figure 106 on page 316.

1. The calling party dials the digits to reach the called party.
2. The SSP attempts to establish a connection with the called party.
3. The called party does not answer.
4. After a preset time, the SSP forwards the calling party to the voice mail service.
5. Once calling party finishes recording the message, the voice mail service sends a request to the SCP to activate the MWI.

6. The SCP sends an Update message to the SSP to activate MWI for the called party.
7. The SSP validates the request. The SSP validates the MSRID by comparing it to a list in the SSP.
8. The SSP activates MWI for the called party.
9. The SSP sends an Update_Success or a Failure_Report message to the SCP depending upon whether the action was successfully completed or not.
10. The SCP sends Request_Completed message to the voice mail service.

Figure 106 Update MWI call sequence**10.2.3 Update_Success message**

The SSP sends the Update_Success message without parameters to the SCP in a TCAP return result component when an Update is completed successfully.

10.2.4 Application_Error

For error handling of the Update message, the SSP can return a Return_Error component with an ApplicationError whose ApplicationErrorString field specifies an ErrorCause. The ErrorCause can be any one of the following:

- erroneousDataValue
- missingConditionalParameter
- unexpectedParameterSequence

10.2.4.1 ErroneousDataValue

The erroneousDataValue ErrorCause is returned when a mandatory parameter is encountered that is not within the specified range defined by GR-1299. The only exception to this rule is the value of the T-ONoAnswer trigger timer. When the T-ONoAnswer trigger timer value is out of range, an ErrorCause of missingConditionalParameter is returned.

10.2.4.2 MissingConditionalParameter

The missingConditionParameter value is returned when one of the following errors occurs:

- the optional ActivationStateCode parameter is missing for the triggerItemAssignment
- the optional parameters ONoAnswerTimer or TNoAnswerTimer are missing for the SSPUserResource
- the value of the T-ONoAnswer or the T-TNoAnswer timer value is not between 1 and 120, inclusive
- field MsrID in parameter ServiceProviderID is not populated

10.2.4.3 UnexpectedParameterSequence

The SSP sends ErrorCause value unexpectedParameterSequence when parameters are received in a sequence other than that defined by GR-1299.

10.2.5 Failure_Report

The Failure_Report message is one of the possible messages that can be sent to the SCP when there is a problem processing an Update message.

For error handling of the Update message, the FailureCause parameter of the Failure_Report message can have one of the following values:

- unavailableResources
- rateTooHigh
- msridDoesNotMatchUserProfile

10.2.5.1 UnavailableResources

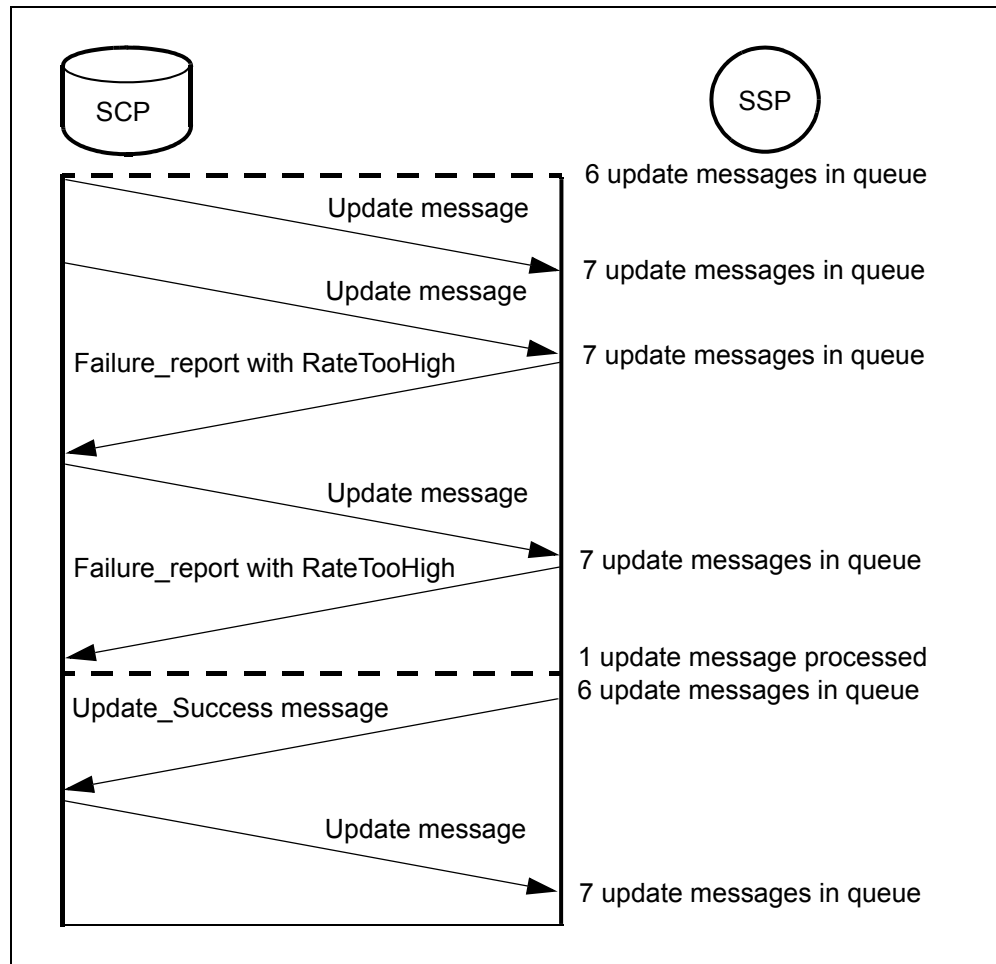
The unavailableResources error occurs when:

- the SSPUserResourceID is invalid, for timer, trigger, and MWI updates
- the Trigger Item ID parameter does not map to a defined subscription entity on the DMS SSP
- the SSP cannot activate or deactivate a trigger after parameter validation for any reason
- the SSP cannot update the T-ONoAnswer or the T-TNoAnswer trigger timer after parameter validation

- the Update messages attempts to invoke an application that is not supported (for example, SDF)
- the SSP attempts to invoke the feature during an ONP
- both the T-ONoAnswer trigger and T-TNoAnswer trigger timer update requests are in the same message
- the SSPUserResourceID contains PublicDialingPlanID or SpID
- the UpdateGroups field is audiomessagewaitingindicator and the action field specifies a delay interval
- a DN has an unsupported LCC and SSP tries to update the MWI status
- a DN is not in the IDL or CPB state and the SSP tries to update the MWI status
- the KSET or ISDN user does not subscribe to line option AINMWT and the SSP attempts to update the MWI (lamp and visual) status
- the MWI update request is received along with either or both of the following
 - a T_ONoAnswer timer update
 - a T_TNoAnswer timer update
- the MsrID is invalid
- when the SSP attempts to provide MWI (lamp and visual) status and the RES subscriber does not subscribe to the SSP-based feature MWT with suboption CMWI
- when the Update TIID message is sent to update a trigger for a MDN number with a TriggerItemSubNumber that does not match the number assigned to the primary member of the MDN group
- when the IBN agent that has submitted a Illmap activation request does not have a 6X19 or 6X20 card

10.2.5.2 RateTooHigh

The rateTooHigh FailureCause error occurs when the SCP sends Update messages too quickly for the SSP. Up to seven Update messages can be queued, including the message that is currently being processed. The queue length is determined by real time processing considerations.

Figure 107 Update message processing for rateTooHigh scenario**10.2.5.3 msridDoesNotMatchUserProfile**

The `msridDoesNotMatchUserProfile` FailureCause error occurs when the SCP send an MSRID that does not identify a valid MSR system for the DN or DNCT.

10.2.6 Reject_Component

The SSP sends this component with a problem code of `incorrectParameter` whenever a mandatory parameter is missing from the Update message.

10.2.7 Update Message Examples

The following examples show Update message parameter contents for various application.

10.2.7.1 Changing the status of the message waiting indicator

The Update message below turns on the lamp on DN 6137215460 and sends the display text to the CPE.

```
UPDATE (  
  AdministrableObject(SSPUserResource),  
  SSPUserResourceID.DN := 6137215460,  
  ServiceProviderID.MsrID := 8197225060,  
  UpdateGroup1.service1 := messagewaitingindicator,  
  UpdateGroup1.action1 := ON  
)
```

10.2.7.2 Updating T-ONoAnswer trigger timer

The following Update message below attempts to update the value of the T-ONoAnswer trigger timer to 60 seconds on an SSP with an ID of XXXXXX.

```
UPDATE (  
  AdministrableObject(SSPUserResource),  
  SSPUserResourceID.LocalSSPID := XXXXXX,  
  ONoAnswerTimer := 60  
)
```

10.2.7.3 Updating T-TNoAnswer trigger timer

The following Update message below attempts to update the value of the T-TNoAnswer trigger timer to 60 seconds on the SSP whose ID is XXXXXX.

```
UPDATE (  
  AdministrableObject(SSPUserResource),  
  SSPUserResourceID.LocalSSPID := XXXXXX,  
  TNoAnswerTimer := 60  
)
```

10.2.7.4 Updating Trigger Item

The following Update message below attempts to turn ON (activate) the trigger item subscription link at detection point 1 for the trigger item named ofhkim1 in table TRIGITM.

```
UPDATE (  
  AdministrableObject(TriggerItemAssignment),  
  SSPUserResourceID.DN := 6137215460,  
  TriggerItemID.DPNumber := 1,  
  TriggerItemID.TriggerItemSubnumber :=  
  ofhkim1,  
  ActivationStateCode := ON,  
)
```

10.2.8 Update message interactions

The Update message feature has general interactions within AIN and with the DMS-100 switch. See Chapter 21: “AIN interactions introduction” on page 717 and Chapter 4: “Other interactions” on page 275.

10.2.9 CI commands

The Update message for 'Change status of MWI' has a CI increment 'UPDCI' that provides commands to simulate and test Update messages. See Section 25.14 "UPDCI increment" on page 722 for more details.

10.3 AdministrableObject parameter

AIN Service Enablers supports the following data items for the AdministrableObject parameter:

- SSPUserResource
- TriggerItemAssignment

When the SCP sends an Update message with unsupported parameters, then the SSP returns a Failure_Report message indicating unavailable resources for each unsupported parameter.

10.3.1 SSPUserResource

The SSPUserResource parameter is used by the SCP to describe a switch resource, such as specifying that the value of the T-ONoAnswer trigger timer must change. For AIN Service Enablers' the SSPUserResource structure contains:

- ONoAnswerTimer, described in Section 10.4 "ONoAnswerTimer parameter" on page 323
- ServiceProviderID
- SSPUserResourceID
- TNoAnswerTimer, described in Section 10.5 "TNoAnswerTimer parameter" on page 323
- UpdateGroups

10.3.1.1 SSPUserResourceID

This field identifies the DN or DNCT that the change status of MWI is requested.

10.3.1.2 UpdateGroups

In UpdateGroup1, when service1 indicates messagewaitingindicator or visualmessagewaitingindicator then Action1 can only be On or Off. UpdateGroup1 is used for visual or audio indication of MWI.

In UpdateGroup1, when service1 indicates visualmessagewaitingindicator then Action1 can only be On or Off. Display text is provided only when parameter Display Text is present. When lamp is available, its status is modified based on the action specified.

For UpdateGroup2, service2 can only indicate audiomessagewaitingindicator. Action2 can be On or Off or it can specify a delay interval from 1 to 60 seconds. UpdateGroup2 is used for audio indication of MWI.

Note: The delay interval is not supported for feature Update Message Support for Display Text visual MWI activity.

UpdateGroup1, UpdateGroup2 and the corresponding indication type for each group is illustrated in Table 88.

Table 88 UpdateGroups with type of indication

UpdateGroups	Type of Indication
UpdateGroup1:service1 = messagewaitingindicator	Lamp
UpdateGroup1:service1 = visualmessagewaitingindicator	Lamp
UpdateGroup2:service2 = audiomessagewaitingindicator	Stuttered dialtone

10.3.1.3 ServiceProviderID

This field contains a MsrID identifying the message storage and retrieval system making the request.

10.3.2 TriggerItemAssignment parameter

Parameter TriggerItemAssignment is used by the SCP to associate a trigger item to an SSP user resource. The TriggerItemAssignment structure contains the following values:

- ActivationStateCode
- PotentialUse
- SSPUserResourceID
- TriggerItemID

10.3.2.1 ActivationStateCode

This structure specifies the action to take: either activate (ON) or deactivate (OFF).

10.3.2.2 PotentialUse

This parameter is sent to indicate the addition or deletion of a feature to the PotentialUse Attribute associated with the SSP User Resource identified by the UserId and Bearer Capability parameters. This parameter in an Update message is currently ignored by the SSP and processing continues as though the parameter does not exist.

10.3.2.3 SSPUserResourceID

This structure identifies the SSP user resource associated with the trigger to be updated. This field can contain any of Dn, DnCtID, TrunkGroupID or LocalSSPID. Currently, the CT parameter in an Update message is ignored by the SSP and processing continues as though the parameter does not exist.

10.3.2.4 TriggerItemID

This structure contains the specific trigger to be activated or deactivated. It consists of two fields:

- Detection Point Number (DPNumber) that identifies the detection point to where the trigger applies. This field must contain one of the following TDPs: e1, e3, e4, e17, e19, e20, e30 or e33.
- TriggerItemSubNumber, that identifies triggers and events within a given detection point. This field corresponds with the TriggerItemName field in the TRIGITM table. See Section 10.17 “Table TRIGITM” on page 386.

10.4 ONoAnswerTimer parameter

This parameter contains the value, in seconds, of the originating no answer timer. The value of the timer can be from 1 to 120. The default value is 18. The RRBCME message can contain the timer only when the O_No_Answer EDP is requested.

During an ONP, Update messages are processed and new ONoAnswerTimer values are written to a protected store. However, any timer changes occurring from the transfer of the OFCENG table through the hardware SWACT are written to the dump side of the switch and are not captured on the restore side. Data can be lost during this period (about 8 hours) of the ONP.

This parameter is controlled by SOC option AIN00210.

10.5 TNoAnswerTimer parameter

This parameter contains the value, in seconds, of the terminating no answer timer. The value of the timer can be from 1 to 120. The RRBCME message can contain the timer only when the T_No_Answer EDP is requested.

This parameter is controlled by SOC option AIN00220.

10.6 TriggerCriteriaFlag parameter

The TriggerCriteriaFlag parameter is treated as a mandatory parameter. When it is missing, a fatal application error of “Missing Mandatory Parameter” is raised. The TriggerCriteriaFlag parameter is checked to ensure that it does not exceed the maximum allowable length.

The Trigger Criteria Type field is checked to ensure that it contains one of the following values:

- 00000001 vertical service code
- 00000000 feature activator
- 00000010 customized access
- 00000011 customized intercom
- 00000100 NPA
- 00000101 NPA NXX
- 00001000 NPA NXX XXXX
- 00001100 N11
- 00001101 AFR
- 00001110 shared interoffice trunk
- 00001111 termination attempt
- 00010000 off hook immediate
- 00010001 off hook delayed
- 00010010 channel setup PRI

The Flag field is checked to ensure that it contains one of the following values:

- 00000000 do not activate trigger
- 00000001 activate trigger.

Any error is reported as an erroneous data value fatal application error.

10.7 UserID parameter

Parameter UserID is checked to ensure that it does not exceed the maximum allowable length and that it has one of the following values:

- [1] IMPLICIT DN (The DN is checked to ensure that the maximum number of digits is not exceeded (5 octets or 10 BCD digits))
- [5] IMPLICIT TrunkGroupID (TrunkGroupID is [27] IMPLICIT INTEGER (0.9999); it is checked to ensure that it is within the valid range)
- [6] IMPLICIT PrivateFacilityGID (PrivateFacilityGID is [28] IMPLICIT INTEGER (0.9999); it is checked to ensure that it is within the valid range)

Any error is reported as an Erroneous Data Value fatal application error.

10.8 Agent support

See Section 4.13 “Agent support for Update message waiting indicator” on page 161 for agent support details.

10.9 limitations and restrictions

See Section 20.3.3 “Update message” on page 672 for limitations and restrictions associated with this functionality.

11 Operational measurements for AIN

AIN operational measurements (OMs) perform traffic measurements and maintenance measurements on AIN SSP calls. The following OM groups apply to the AIN SSP:

- AIN
- AINACG
- AINICOFF
- AINICSUB
- AINNCR
- AINOGOFF
- AINOGSB2
- AINOGSUB
- 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.

11.1 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 89.

Table 89 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 AMASlpID	AMASLPID
AMA Parameters Received in Conversation Package	AMACONV
Note: These are overflow registers.	

11.1.1 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.

11.1.1.1 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.

11.1.1.2 AIN shared interoffice calls

This measurement counts the number of times the Shared_Interoffice_Trunk trigger occurs and all its criteria are met.

11.1.1.3 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.

11.1.2 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.

11.1.2.1 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.

11.1.2.2 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.

11.1.2.3 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.

11.1.2.3.1 Transaction ID overflow or incorrect This measurement counts the number of AIN SSP all 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.

11.1.2.3.2 Component ID overflow 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.

11.1.2.4 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.

11.1.2.4.1 Transaction ID overflow 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.

11.1.2.4.2 Component ID overflow 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.

11.1.2.5 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.

11.1.2.6 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.

11.1.2.7 Invalid command sequence

This measurement counts the number of times a message from an off-board processor is received incomplete or not in sequence.

11.1.2.8 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.

11.1.2.9 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.

11.1.2.10 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.

11.1.2.11 AMA parameters received in a Conversation package

This measurement counts the number of times AMA parameters were received in a conversation package.

11.2 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 90.

Table 90 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

11.3 FTROM OM group

Group FTROM is the platform to capture feature data block (FDB) high-water marks and seizures. See Table 91 for a list of the registers.

Table 91 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 91 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 field, FTR_NAME, in which the type of FDB must be specified.

The “info field” for the FTROM 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 92.

Table 92 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

11.4 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 datafilled in the TRIGDIG or TRIGINFO table with the MSGSET equal to R02.

The purpose of these message counters is to provide traffic engineering, monitoring, and maintenance capabilities. They are only active when SOC order code, AIN00210, is turned on.

The OM registers are organized into the five OM groups as summarized in Table 93 on page 333.

Table 93 Message counter OM groups

OM group	Call relation	Direction	Subscription	Description
AINOGOFF	Call-related	Outgoing	Office	See Section 11.4.1 on page 334.
AINOGSUB	Call-related	Outgoing	Subscribed	See Section 11.4.2 on page 335.
AINOGSB2	Call-related	Outgoing	Subscribed	See Section 11.4.3 on page 337.
AINICOFF	Call-related	Incoming	Office	See Section 11.4.4 on page 337.
AINICSUB	Call-related	Incoming	Subscribed	See Section 11.4.5 on page 338.
AINNCR	Non-call-related	Both	N/A	See Section 11.4.6 on page 339.

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 94 shows the trigger classifications used by AIN Service Enablers OMs:

Table 94 Trigger type classification

TDP	Trigger	Classification
Origination_Attempt	Off-Hook_Immediate	Subscribed
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
T_busy	Termination_Busy	Subscribed
Term_Resource_Available	Term_Resource_Available	Subscribed

Although the AFR trigger can be provisioned as either office or subscribed, all messages sent as a result of this trigger are counted as subscribed.

11.4.1 AINOGOFF OM group

The AINOGOFF group contains registers which count call-related, outgoing, office based, Service Enablers messages. These registers, their corresponding

message types, and the trigger or event type are presented in Table 95 in order of detection points.

Table 95 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
EOODCING	O_Disconnect Calling	O_Disconnect Calling	EDP-R
EOODCLED	O_Disconnect_Called	O_Disconnect_Called	EDP-R
EOTOUT	Timeout	Timeout	EDP-R
IOTN	Termination_Notification		
IOCIFR	Call_Info_From_Resource		
IORCLR	Resource_Clear		
IOCLOSO	Close		

11.4.2 AINOGSUB OM group

The AINOGSUB group contains registers that count call-related, outgoing, subscribed, Service Enablers messages. These registers, their corresponding message types, and the trigger or event type are presented in Table 96 in order of detection points.

Table 96 AINOGSUB OM group

OM register	Message	Trigger or Event	TDP or EDP
TSOAOHI	Origination_Attempt	Off-Hook_Immediate	TDP-R
TSICOHD	Info_Collected	Off-Hook_Delay	TDP-R
TSICSIT		Shared_Interoffice_Trunk	
TSICPRIB		Channel_Setup_PRI	

Table 96 AINOGSUB OM group (Continued)

OM register	Message	Trigger or Event	TDP or EDP
TSIAPFC	Info_Analyzed	Public_Feature_Code	TDP-R
TSIASFC		Specific_Feature_Code	
TSIACDP		Customized_Dialing_Plan	
TSIA1PLS		One_Plus_Prefix	
TSIASPCR		Specified_Carrier	
TSIAOPSV		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
TSONANA	O_No_Answer	O_No_Answer	TDP-R
ESONA			EDP-R
ESOANS	O_Answer	O_Answer	EDP-N
ESODCING	O_Disconnect Calling	O_Disconnect Calling	EDP-R
ESODCLED	O_Disconnect_Called	O_Disconnect_Called	EDP-R
ESOMTOUT	Timeout (O_Mid_Call)	Timeout	EDP-R
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_Answer	EDP
TSTRSA	Term_Resource_Available	TRA	TDP-R
ISCIFR	Call_Info_From_Resource		

Table 96 AINOGSUB OM group (Continued)

OM register	Message	Trigger or Event	TDP or EDP
ISRCLR	Resource_Clear		
ISCLOSO	Close		
ISTN	Termination_Notification		

11.4.3 AINOGSB2 OM group

The AINOGSB2 group contains registers that count call-related, outgoing, subscribed, Service Enablers messages. These registers, their corresponding message types, and the trigger or event type are presented in Table 97 in order of detection points.

This group is similar to AINOGSUB and was introduced because AINOGSUB was full.

Table 97 AINOGSB2 OM group

OM register	Message	Trigger or Event	TDP or EDP
ESTMTOUT	Timeout (T_Mid_Call)	Timeout	EDP-R

11.4.4 AINICOFF OM group

The AINICOFF group contains registers which count call-related, incoming, office-based, Service Enablers messages. These registers and their corresponding message types are presented in Table 98.

Table 98 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
IORRBE	Request_Report_BCM_Event

Table 98 AINICOFF OM group

OM register	Message
IOCLOSI	Close
IOCINFO	Collect_Information
IOCCALL	IO Create_Call

11.4.5 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 99.

Table 99 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
ISOFRCL	Offer_Call

11.4.6 AINNCR OM group

The AINNCR group contains registers that count non-call-related messages. These registers and their corresponding message types are presented in Table 100.

Table 100 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

Note: OM groups AINICOFF and AINICSUB count non-call-related Send_Notification messages. OM groups AINOGOFF and AINOGSUB count non-call-related Termination_Notification messages.

The NAGCR, NAGCRS and the NAOVFW OM registers are only active when SOC order code AIN00210 is turned on.

11.5 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 101.

Table 101 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

Table 101 AIN Essentials feature operational measurements (Continued)

OM name	Register	Group
Usage of AIN Feature Blocks	118 AIN_FTR_BLK	EXT
Usage of AIN Processing Blocks	122 AIN_PROCESSING__BLK	EXT
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

11.6 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 office-wide basis by the SSP and do not necessarily provide measurements that are specific to AIN SSP. These office-wide OMs are

- Network Management Control Blocks Call (except for ACG, see Table 89 on page 328)
- Incoming Calls Abandoned
- All IEC Trunks Busy
- All Telco Trunks Busy

12 OM group EXT

12.1 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.

12.2 Registers

The following diagram illustrates OM group EXT registers as they appear on the MAP terminal display.

Figure 108 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  EXTTOVFL      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

```

12.3 Release history

The OM group EXT was introduced before BCS20.

12.3.1 EUR009

Two key fields added: 512 DMS250_FEATURE_EXT_FMT_CD and 560 OVERFLOW_CCB_EXT_FC.

12.3.2 TL010

Key field 198 DITM_AGENT_EXT_BLOCKS added, indicating the number of data interface and topology mapping agent extension blocks provisioned (AF7401).

12.3.3 EUR008

Key field 180 X_LARGE_FEATURE_DATA added, indicating the number of X_LARGE_FEATURE_DATA blocks provisioned.

12.3.4 NA009

Key field BASCPS_HUGE_EXT_BLK is introduced (AU2648).

Tuple HUGE_HIS_DATA_BLK_EXT_FCEXT_FORMAT_CODE IS 182, is added to the EXTINFO information field (AU2626).

Added key field entry NS_EXT_FC.

12.3.5 MSL07

Removed index value 102 VCDR_RECORDING_UNIT for key field EXT_FORMAT_CODE

12.3.6 EUR006

Index value 148 EMERG_EXT for key field EXT_FORMAT_CODE was introduced in EUR006.

12.3.7 TOPS07

Key field entries OSACRU and TOPS_GEN_TCAP_EXT_BLK were introduced in TOPS07.

12.3.8 NA007

Key field entry 172 AIN_ORIG_INFO was introduced in NA007.

12.3.9 NA006

Key field entry 135 MSGING_EXT_BLK replaced key field 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 field 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 field EXT_FORMAT_CODE, through operator services advanced intelligent network (AIN) (ENSV0014) functionality.

12.3.10 TOPS05

Key field entry 147 CRS_SUBRU_POOL5 was introduced in TOPS05.

12.3.11 NA005Aa

OM group EXT changed for GSF software release in NA005Aa.

12.3.12 NA005

Key field entry AIN_TN_EXT_FMT_CODE was introduced in NA005.

12.3.13 NA004

Key field entries EA_MF_SS7_EXT_BLOCK, 135 SDS_EXT_BLK, and RTRS_TCAP_EXT_BLK were introduced in NA004.

12.3.14 BCS36

Key field entries CNAMD_TCAP_EXT_BLK, FBS_EXT_FMT_CODE, REDIR_EXT_BLKs, and DATA_CALL_TESTER_EXT were introduced in BCS36.

12.3.15 BCS35

Key field entries DSD_EXT_BLKs, TC_AP_COMPONENT_EXT_BLK, GSM_MESSAGE_BLOCKS, and CRS_PRU_POOL3 were introduced in BCS35. These Key fields replaced SMDR_RECORDING_UNIT, which did not appear in BCS36.

12.3.16 BCS34

Key field entries DINA_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. Office parameter E911_NUMBER_OF_EXT_BLOCK Kobe was replaced by two office parameters: NO_OF_CRITICAL_FTR_DATA_BLKs and E911_NUMBER_OF_FDBs.

12.3.17 BCS33

Key field 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 field entry HIS_DATA_BLOCK_EXT_FC was removed in BCS33.

12.3.18 BCS32

Key field 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 field entries BC_RECORDING_UNIT, BC_LAMA_REC_UNIT, MDR_EXT_BLOCK, and REAL_EXTENSION_BLOCK were removed in BCS32.

12.3.19 BCS31

Key field entries OVERFLOW_CCB_EXT_FC, MTX_EXT_BLOCK, and RC_EXT_FMT_CODE DMS250_EOPS_EXT_FC were introduced in BCS31.

Key field entry DMS250_EOPS_VAL_EXT_FMT_CD was renamed in BCS31.

Registers EXTSEIZ2 and EXTHI2 were introduced in BCS31.

12.3.20 BCS30

Key field TC_AP_MEDIUM_EXT_BLK was introduced in BCS30.

12.3.21 BCS29

Key field entries REAL_EXTENSION_BLOCK, MDR_EXT_BLOCK, SMPDB_FC, and INTL_CCMTR_EXT_BLOCK were introduced in BCS29.

12.3.22 BCS28

Key field entries E911_FMT_CODE, ACD_OVFLINQ_EXTENSION, INTL250_RECORDING_UNIT, and ZERO_PLUS_EXT_FC were introduced in BCS28.

12.3.23 BCS27

Key field entries EOPS_RECORDING_UNIT, ECCBX_EXT_FC, TPBX_CCB_EXTENSION, and MTX_EXTENSION_BLOCKS were introduced in BCS27.

12.3.24 BCS26

Key field 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.

12.3.25 BCS25

Register EXTUSAGE was not included in BCS25.

Key field entries CDRMTX_EXT_FMT_CD and AUX_EXTENSION_BLOCK were introduced in BCS25.

12.3.26 BCS24

Register EXTUSAGE was set to zero in BCS24.

Key field entries ITOPSRU and DMS-250_FEATURE_EXT_FMT_CD were introduced in BCS24.

12.3.27 BCS23

Register EXTHI was introduced in BCS23.

Key field entries ICAMA_RECORDING_UNIT, POTS_CFZ_EXTENSION, and RTEB_EXTENSION were introduced in BCS23.

12.3.28 BCS22

Key field entry FTR_XLA_BLOCK_EXT_FC was introduced in BCS22.

12.3.29 BCS21

Key field entry ISUP_MSG_EXT_FC was introduced in BCS21.

12.3.30 BCS20

Key field entries CFD_EXTENSION, CDIV_EXTENSION, NTL_RECORDING_UNIT, and DCR_EXTENSION were introduced in BCS20.

13 OM group AIN

13.1 OM description

OM group advanced intelligent network (AIN)

OM group AIN is the platform for traffic and maintenance measurements that are specific to AIN.

13.2 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

7 RO2
      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.

13.3 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

13.4 Related OM groups

There are no related OM groups.

13.5 Related functional groups

There are no related functional groups.

13.6 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

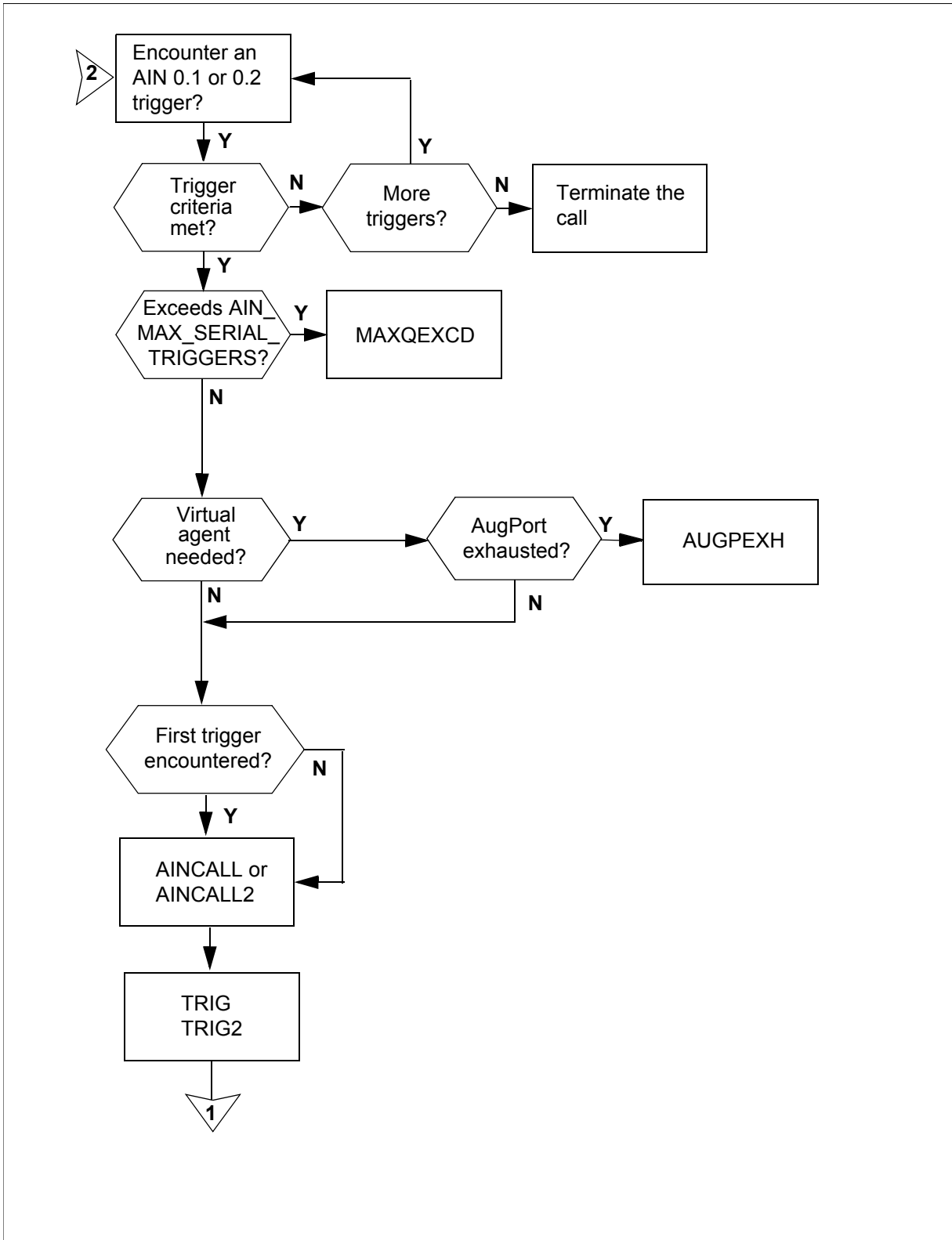


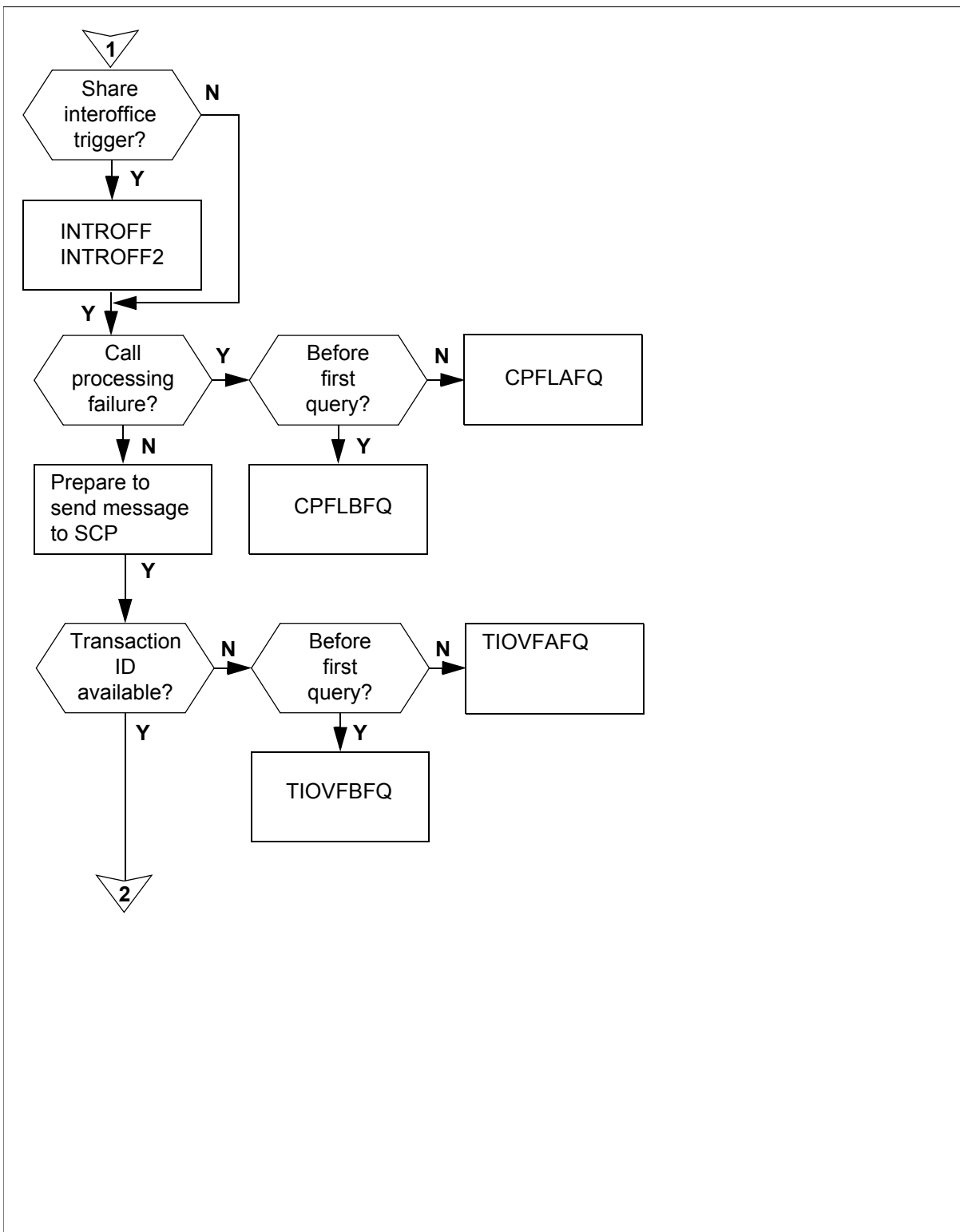
Figure 4 Logic flow for OM group AIN registers (continued)

Figure 4 Logic flow for OM group AIN registers (continued)

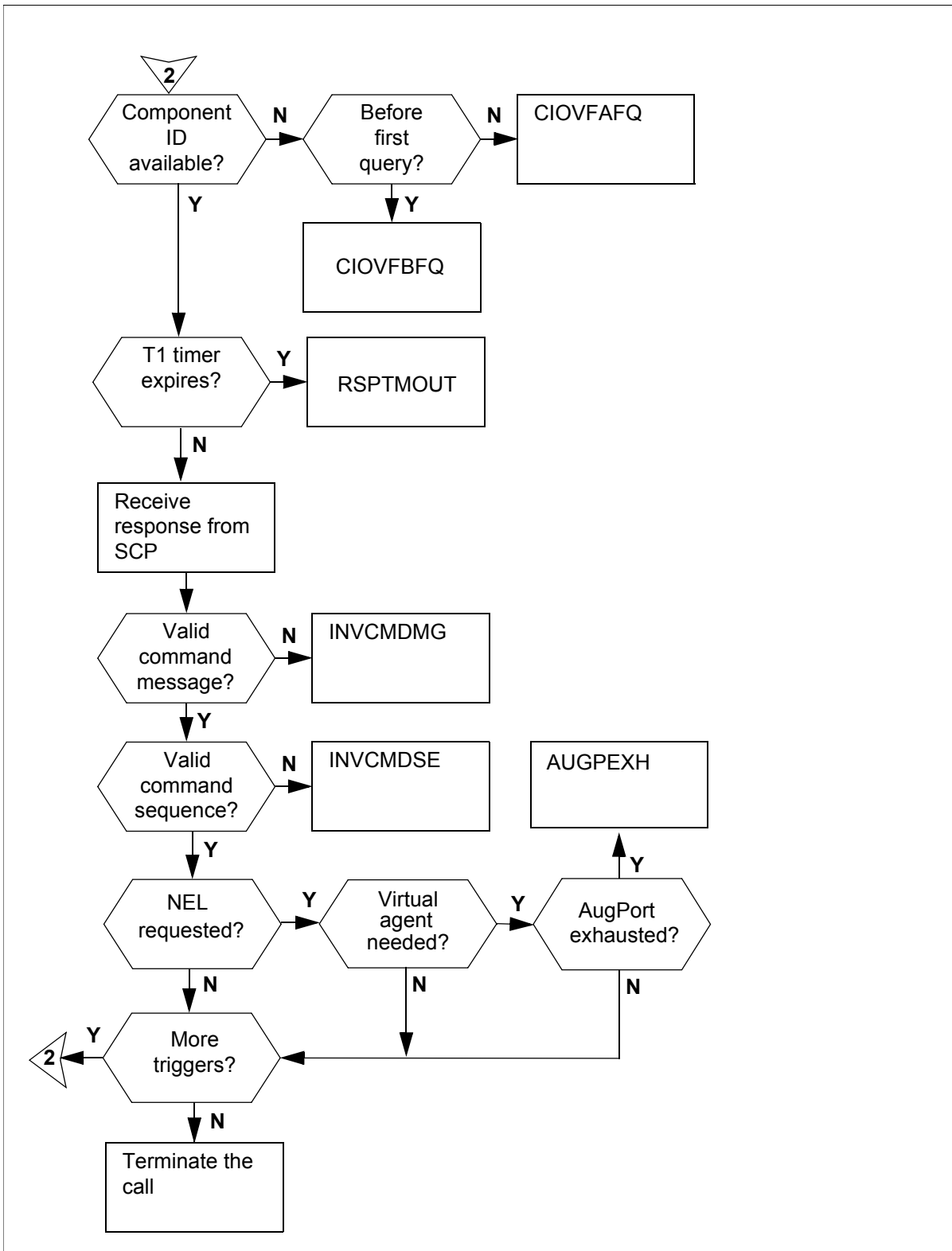
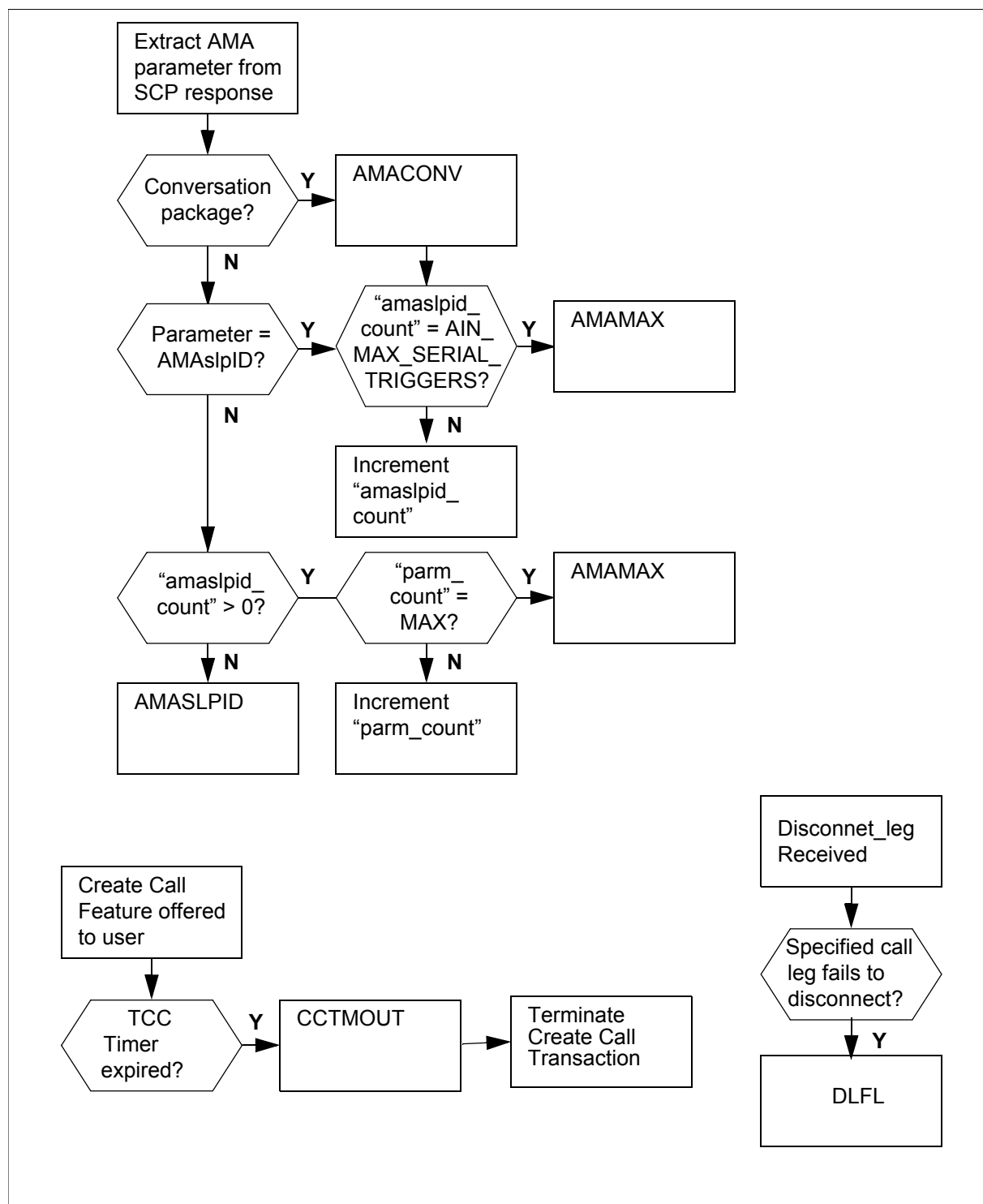


Figure 4 Logic flow for OM group AIN registers (continued)

13.7 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.

13.7.1 Register AINCALL release history

The NA009 product release introduced register AINCALL.

13.7.2 Related registers

TRIG, TRIG2

13.7.3 Related logs

None

13.7.4 Extension registers

AINCALL2

13.8 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.

13.8.1 Register AMACONV release history

The BCS36 product release introduced register AMACONV.

13.8.2 Related registers

There are no related registers.

13.8.3 Related logs

There are no related logs.

13.8.4 Extension registers

There are no extension registers.

13.9 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

13.9.1 Register AMAMAX release history

The BCS36 product release introduced register AMAMAX.

13.9.2 Related registers

There are no related registers.

13.9.3 Related logs

There are no related logs.

13.9.4 Extension registers

There are no extension registers.

13.10 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.

13.10.1 Register AMASLPID release history

The BCS36 product release introduced register AMASLPID.

13.10.2 Related registers

There are no related registers.

13.10.3 Related logs

There are no related logs.

13.10.4 Extension registers

There are no extension registers.

13.11 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.

13.11.1 Register AUGPEXH release history

The NA012 product release introduced register AUGPEXH.

13.11.2 Related registers

There are no related registers.

13.11.3 Related logs

There are no related logs.

13.11.4 Extension registers

There are no extension registers.

13.12 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.

13.12.1 Register CCTMOUT release history

The NA013 product release introduces register CCTMOUT.

13.12.2 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.

13.12.3 Related logs

There are no related logs.

13.12.4 Extension registers

There are no extension registers.

13.13 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.

13.13.1 Register CIOVFAFQ release history

The BCS36 product release introduced register CIOVFAFQ.

13.13.2 Related registers

There are no related registers.

13.13.3 Related logs

There are no related logs.

13.13.4 Extension registers

There are no extension registers.

13.14 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.

13.14.1 Register CIOVFBFQ release history

The BCS36 product release introduced register CIOVFBFQ.

13.14.2 Related registers

There are no related registers.

13.14.3 Related logs

There are no related logs.

13.14.4 Extension registers

There are no extension registers.

13.15 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.).

13.15.1 Register CPFLAFQ release history

The BCS36 product release introduced register CPFLAFQ.

13.15.2 Related registers

There are no related registers.

13.15.3 Related logs

There are no related logs.

13.15.4 Extension registers

There are no extension registers.

13.16 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.)

13.16.1 Register CPFLBFQ release history

The BCS36 product release introduced register CPFLBFQ.

13.16.2 Related registers

There are no related registers.

13.16.3 Related logs

There are no related logs.

13.16.4 Extension registers

There are no extension registers.

13.17 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.

13.17.1 Register INTROFF release history

The BCS36 product release introduced register INTROFF.

13.17.2 Related registers

There are no related registers.

13.17.3 Related logs

There are no related logs.

13.17.4 Extension registers

INTROFF2

13.18 Register INTROFF2

AIN share interoffice trunk triggers 2 is an overflow register for register INTROFF.

13.18.1 Register INTROFF2 release history

The BCS36 product release introduced register INTROFF2.

13.18.2 Related registers

INTROFF

13.18.3 Related logs

There are no related logs.

13.18.4 Extension registers

There are no extension registers.

13.19 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

13.19.1 Register INVCMDMG release history

The BCS36 product release introduced register INVCMDMG.

13.19.2 Related registers

There are no related logs.

13.19.3 Related logs

There are no related logs.

13.19.4 Extension registers

There are no extension registers.

13.20 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.

13.20.1 Register INVCMDSE release history

Register INVCMDSE was introduced in the BCS36 product release.

13.20.2 Related registers

There are no related registers.

13.20.3 Related logs

There are no related logs.

13.20.4 Extension registers

There are no extension registers.

13.21 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.

13.21.1 Register MAXQEXCD release history

Register MAXQEXCD was introduced in the BCS36 product release.

13.21.2 Related registers

There are no related registers.

13.21.3 Related logs

There are no related logs.

13.21.4 Extension registers

There are no extension registers.

13.22 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.

13.22.1 Register RSPTMOUT release history

The BCS36 product release introduced register RSPTMOUT.

13.22.2 Related registers

There are no related registers.

13.22.3 Related logs

There are no related logs.

13.22.4 Extension registers

There are no extension registers.

13.23 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.

13.23.1 Register TIOVFAFQ release history

The BCS36 product release introduced register TIOVFAFQ.

13.23.2 Related registers

There are no related registers.

13.23.3 Related logs

There are no related logs.

13.23.4 Extension registers

There are no extension registers.

13.24 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.

13.24.1 Register TIOVFBFQ release history

The BCS36 product release introduced register TIOVFBFQ.

13.24.2 Related registers

There are no related registers.

13.24.3 Related logs

There are no related logs.

13.24.4 Extension registers

There are no extension registers.

13.25 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.

13.25.1 Register TRIG release history

The BCS36 product release introduced register TRIG.

13.25.2 Related registers

TRIG2

13.25.3 Related logs

There are no related logs.

13.25.4 Extension registers

There are no extension registers.

13.26 Register TRIG2

AIN triggers 2 (TRIG2) is an overflow register for register TRIG.

13.26.1 Register TRIG2 release history

The BCS36 product release introduced register TRIG2.

13.26.2 Related registers

TRIG

13.26.3 Related logs

There are no related logs.

13.26.4 Extension registers

There are no extension registers.

13.27 Register DLFL

Register Disconnect Leg Failures counts the number of times that the Disconnect Leg response fails to complete its task.

13.27.1 Register DLFL release history

The SN07 product release introduces register DLFL.

13.27.2 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.

13.27.3 Related logs

There are no related logs.

13.27.4 Extension registers

There are no extension registers.

13.28 Release history

13.28.1 SN07 (DMS)

The SN07 (DMS) product release introduces register DLFL for CR Q00765666.

13.28.2 BCS36

The BCS36 product release introduced OM group AIN.

14 OM group AINICOFF

14.1 OM description

Advanced intelligent networks incoming office-based (AINICOFF)

OM group AINICOFF counts AIN Service Enablers office-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 for each trigger and event type. OM registers increment 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 registers that count call-related, incoming, office-based, Service Enablers messages. The system counts messages entered as R02 in tables TRIGDIG, TRIGITM, or TRIGINFO.

Operating company personnel can subscribe to the office-based triggers that follow:

- Specific_Digit_String
- N11

14.2 Registers

The following figure illustrates OM group AINICOFF registers as they appear on the MAP terminal display.

Figure 1 MAP terminal display of OM group AINICOFF registers

IOAR	IOCON	IODISC	IOSTR
IOCRE	IOCITR	IOSN	IORRBE
IOCLOSI	IOCINFO	IOCCALL	IOCTR
IODL			

14.3 Group structure

OM group AINICOFF provides one tuple per office.

Key field:

None

Info field:

None

14.4 Related OM groups

The following related OM groups provide AIN Service Enablers message counts:

- AIN outgoing office-based (AINOGOFF) counts the AIN Service Enablers office-based messages that the SSP sends to the SCP. This OM group monitors the outgoing traffic 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 traffic 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 traffic to the SSP.
- AIN non-call-related (AINNCR) counts the AIN messages that pass between the SSP and SCP 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

14.5 Related functional groups

There are no related functional groups.

14.6 Related functionality codes

There are no related functionality codes.

The figure that follows illustrates the logical flow of OM group AINICOFF registers.



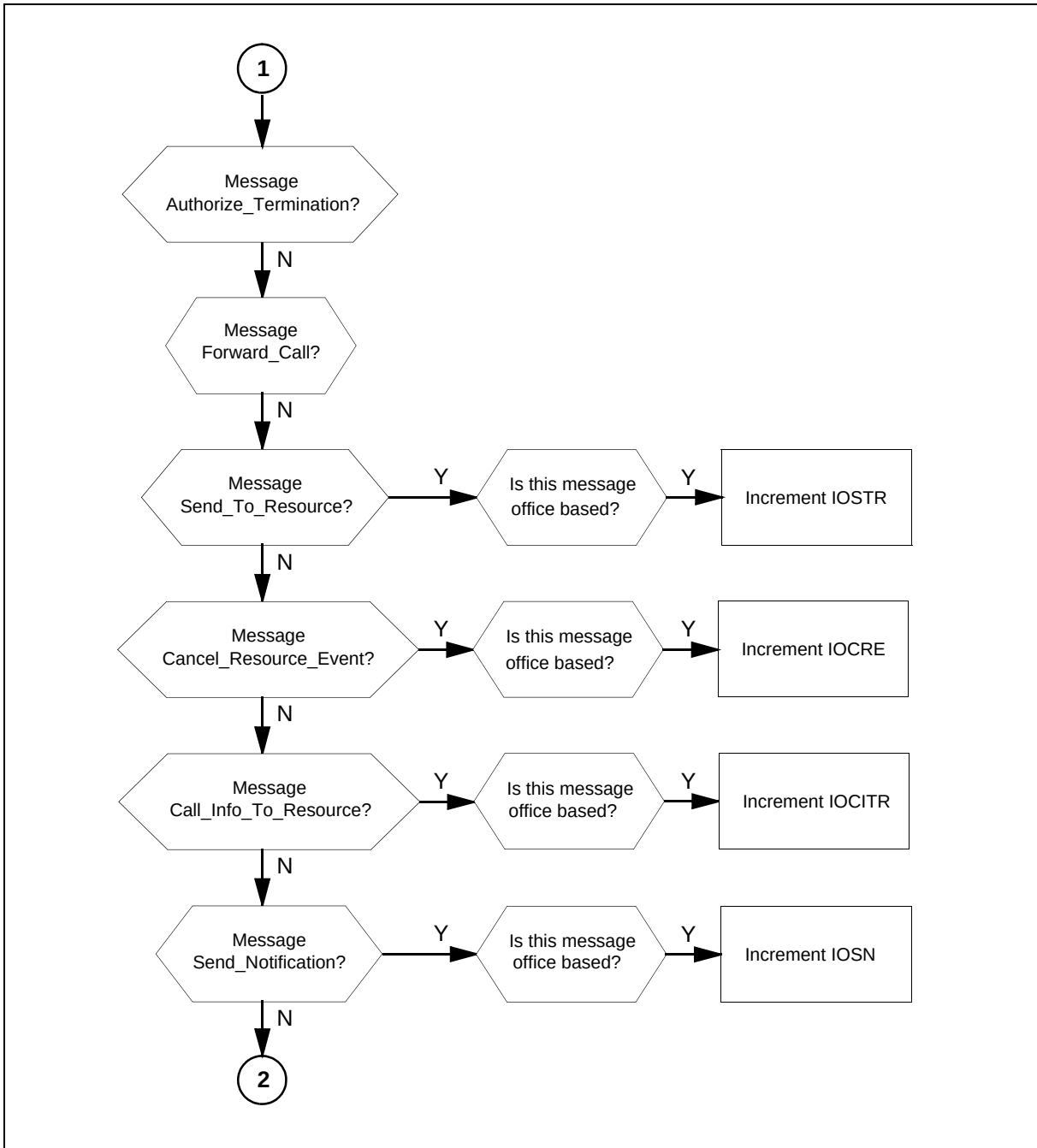
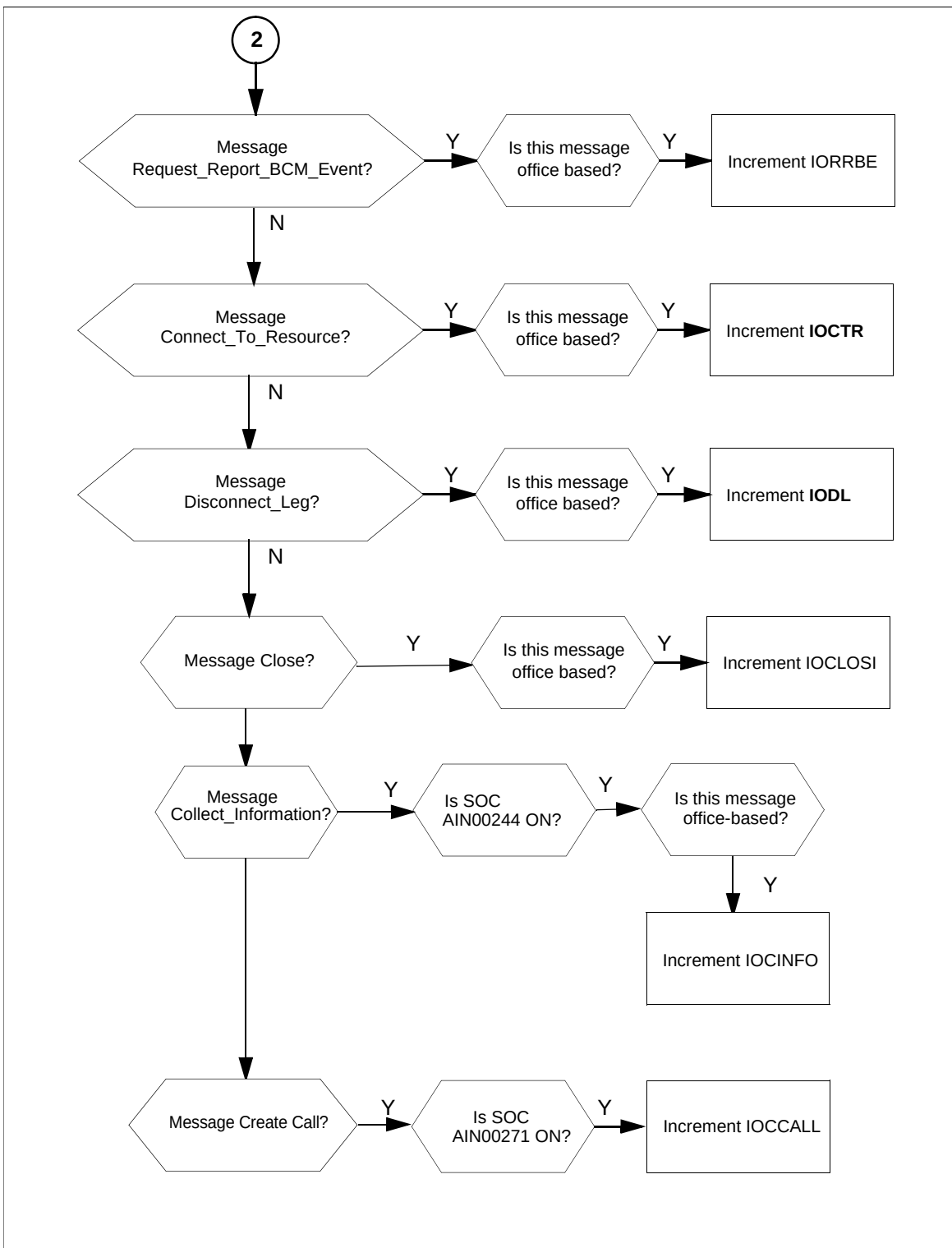
Figure 2 Logic flow for OM group AINICOFF registers (continued)

Figure 2 Logic flow for OM group AINICOFF registers (continued)

14.7 Register IOAR

Register IO Analyze_Route (IOAR) counts the Analyze_Route messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

14.7.1 Register IOAR release history

The NA008 product release introduced register IOAR.

14.7.2 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.

14.7.3 Related logs

There are no related logs.

14.7.4 Extension registers

There are no extension registers.

14.8 Register IOCON

Register IO Continue (IOCON) counts the Continue messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

14.8.1 Register IOCON release history

The NA008 product release introduced register IOCON.

14.8.2 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.

14.8.3 Related logs

There are no related logs.

14.8.4 Extension registers

There are no extension registers.

14.9 Register IOCTR

Register IO Connect_To_Resource (IOCTR) counts the incoming Connect_To_Resource messages received at the SSP from the SCP in transactions initiated by office-based messages.

14.9.1 Register IOCTR release history

The NA017 product release introduced register IOCTR.

14.9.2 Related registers

Register IOCTR counts all the Incoming Connect_To_Resource messages and outgoing CTR_Clear messages.

14.9.3 Related logs

There are no related logs.

14.9.4 Extension registers

There are no extension registers.

14.10 Register IODISC

Register IO Disconnect (IODISC) counts the disconnect messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

14.10.1 Register IODISC release history

The NA008 product release introduced register IODISC.

14.10.2 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.

14.10.3 Related logs

There are no related logs.

14.10.4 Extension registers

There are no extension registers.

14.11 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 office-based message initiates.

14.11.1 Register IOSTR release history

The NA008 product release introduced register IOSTR.

14.11.2 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 office-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 office-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.

- $IOSTR + ISSTR = \text{total Send\_To\_Resource messages}$
- $IOCRE + ISCRE = \text{total Cancel\_Resource\_Event messages}$

14.11.3 Related logs

There are no related logs.

14.11.4 Extension registers

There are no extension registers.

14.12 Register IOCRE

Register Cancel_Resource_Event counts the Cancel_Resource_Event messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

14.12.1 Register IOCRE release history

The NA008 product release introduced register IOCRE.

14.12.2 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 office-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 office-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.

- $\text{IOCRE} + \text{ISCRE} = \text{total Cancel\_Resource\_Event messages}$
- $\text{IOSTR} + \text{ISSTR} = \text{total Send\_To\_Resource messages}$

14.12.3 Related logs

There are no related logs.

14.12.4 Extension registers

There are no extension registers.

14.13 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 office-based message initiates.

14.13.1 Register IOCITR release history

The NA008 product release introduced register IOCITR.

14.13.2 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 $\text{IOCITR} + \text{ISCITR} = \text{total Call\_Info\_To\_Resource messages}$.

Register IOCIFR counts the Call_Info_From_Resource messages sent from the SSP to the SCP in a transaction that an office-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.

14.13.3 Related logs

There are no related logs.

14.13.4 Extension registers

There are no extension registers.

14.14 Register IOSN

Register IO Send_Notification (IOSN) counts the Send_Notification messages received at the SSP from the SCP in a transaction that an office-based message initiates.

14.14.1 Register IOSN release history

The NA008 product release introduced register IOSN.

14.14.2 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 = total Send_Notification messages.

Register IOTN counts the Termination_Notification messages that the SSP sends to the SCP in a transaction that an office-based message initiates.

Register ISTN counts the Termination_Notification messages that the SSP sends to the SCP in a transaction that a subscribed message initiates.

14.14.3 Related logs

There are no related logs.

14.14.4 Extension registers

There are no extension registers.

14.15 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 office-based message initiates. Registers IORRBE + ISRRBE = total Request_Report_BCM_Event messages.

14.15.1 Register IORRBE release history

The NA008 product release introduced register IORRBE.

14.15.2 Related registers

There are no related registers.

14.15.3 Related logs

There are no related logs.

14.15.4 Extension registers

There are no extension registers.

14.16 Register IOCLOSI

Register IO Close (IOCLOSI) counts the close messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

14.16.1 Register IORRBE release history

The NA008 product release introduced register IORRBE.

14.16.2 Related registers

There are no related registers.

14.16.3 Related logs

There are no related logs.

14.16.4 Extension registers

There are no extension registers.

14.17 Register IOCINFO

Register IO Collect_Information (IOCINFO) counts the Collect_Information messages received in response to an office-based trigger encounter. The register increments when the SSP correctly decodes a Collect_Info message and when AIN SOC AIN00244 is ON.

14.17.1 Register IOCINFO release history

The NA010 product release introduced register IOCINFO.

14.17.2 Related registers

Register ISCINFO counts the Collect_Information messages received in response to a subscribed trigger encounter.

Registers IOCINFO + ISCINFO = total Collect_Information messages.

14.17.3 Related logs

There are no related logs.

14.17.4 Extension registers

There are no extension registers.

14.18 Register IOCCALL

Register IO Create_Call counts the incoming Create_Call messages that the SSP receives from the SCP. The register increments when the SSP correctly decodes Create_Call messages and when AIN SOC AIN00271 is ON.

14.18.1 Register IOCCALL release history

The NA013 product release introduces register IOCCALL.

14.18.2 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.

14.18.3 Related logs

There are no related logs.

14.18.4 Extension registers

There are no extension registers.

14.19 Register IODL

Register Incoming Office-based Disconnect Leg (IODL) counts the number of incoming office-based Disconnect Leg responses received by the SSP.

14.19.1 Register IOCCALL release history

The NA019 product release introduces register IODL.

14.19.2 Related registers

Register ISDL records the number of subscriber-based Disconnect Leg messages received by the SSP.

Register DLFL counts the number of times that the Disconnect Leg response fails to complete its task.

14.19.3 Related logs

There are no related logs.

14.19.4 Extension registers

There are no extension registers.

14.20 Release history**14.20.1 SN07 (DMS)**

The register IODL was added by CR Q00765666.

14.20.2 NA017

The register IOCTR was added, (59037140).

14.20.3 NA008

The NA008 product release introduced OM group AINICOFF.

15 OM group AINICSUB

15.1 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 AINICSUB to monitor the incoming subscription 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 increases when the system correctly sends or receives the message that goes with the OM register. The system sends a message correctly when the system codes 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_Interoffice_Trunk
- Public_Feature_Code
- Specific_Feature_Code
- Customized_Dialing_Plan
- automatic flexible routing (AFR)

Note: An AFR trigger can be office-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
- Prefix
- T_Busy
- T_No_Answer

Registers

OM group AINICSUB registers display on the MAP terminal as follows:

ISAR	ISCON	ISAUTHT	ISFC
ISDISC	ISSTR	ISCRE	ISCITR
ISSN	ISRRBE	ISCLOSI	ISCINFO
ISOFRCL	ISCTR	ISDL	

15.2 Group structure

OM group AINICSUB provides one tuple per office.

Key field:

There is no Key field.

Info field:

There is no Info field.

15.3 Related OM groups

Related OM groups that provide message counts for AIN Service Enablers follow:

- AIN outgoing office-based (AINOGOFF) counts the AIN Service Enablers office-based messages that 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 that the SSP sends to the SCP. This OM group monitors the outgoing traffic to the SCP.
- AIN incoming office-based (AINICOFF) counts AIN Service Enablers office-based messages that 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 SCP 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, 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 AIN Service Enablers messages
- total of AINICSUB group + total of AINICOFF group + AINNCR registers NACG + NAGCR + NUPREQ + NMFC + NUPD + NUSUCC = total incoming AIN 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

15.4 Related functional groups

There are no related functional groups.

15.5 Related functionality codes

There are no correct functionality codes.

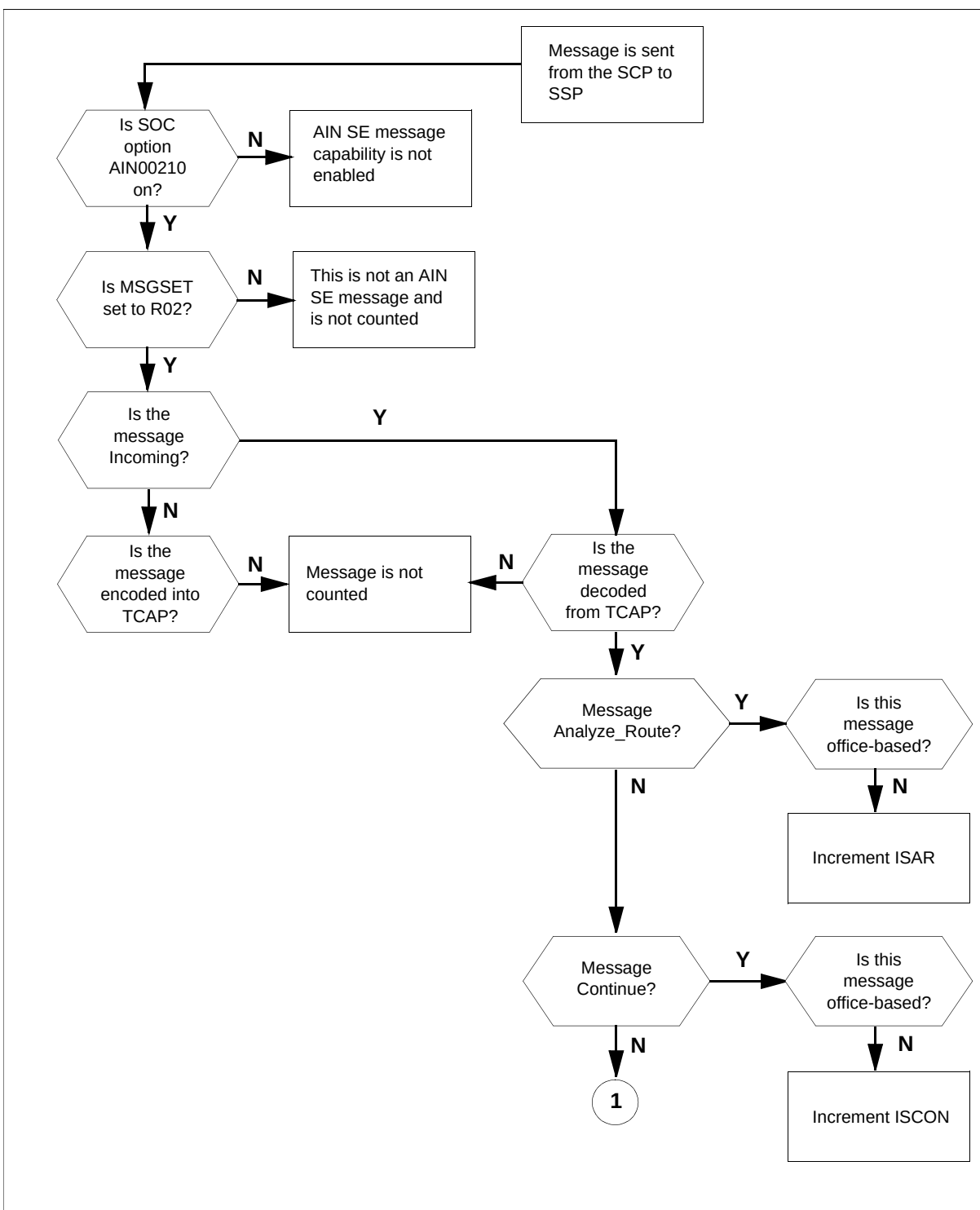
Figure 1 OM group AINICSUB registers

Figure 2 OM group AINICSUB registers (continued)

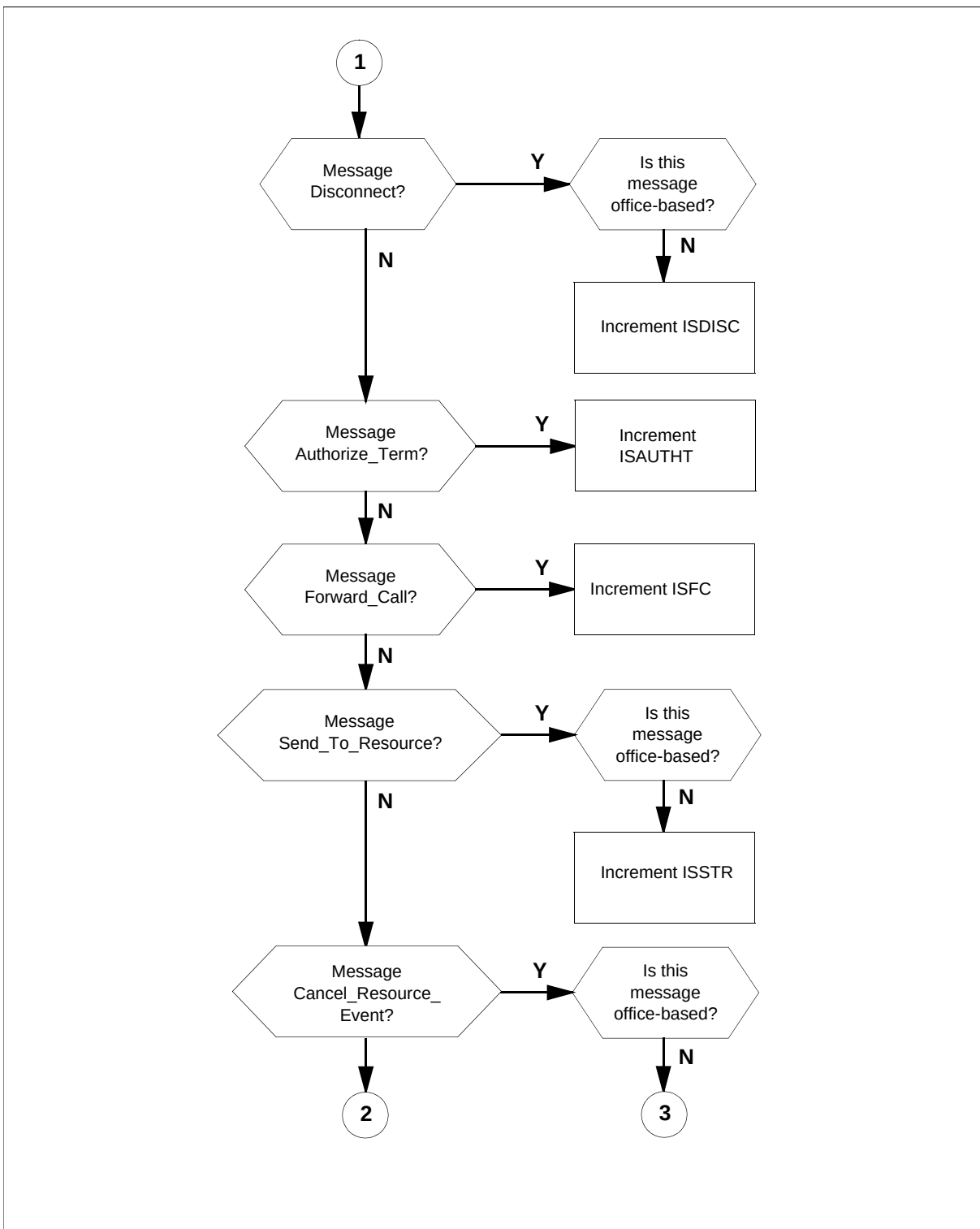
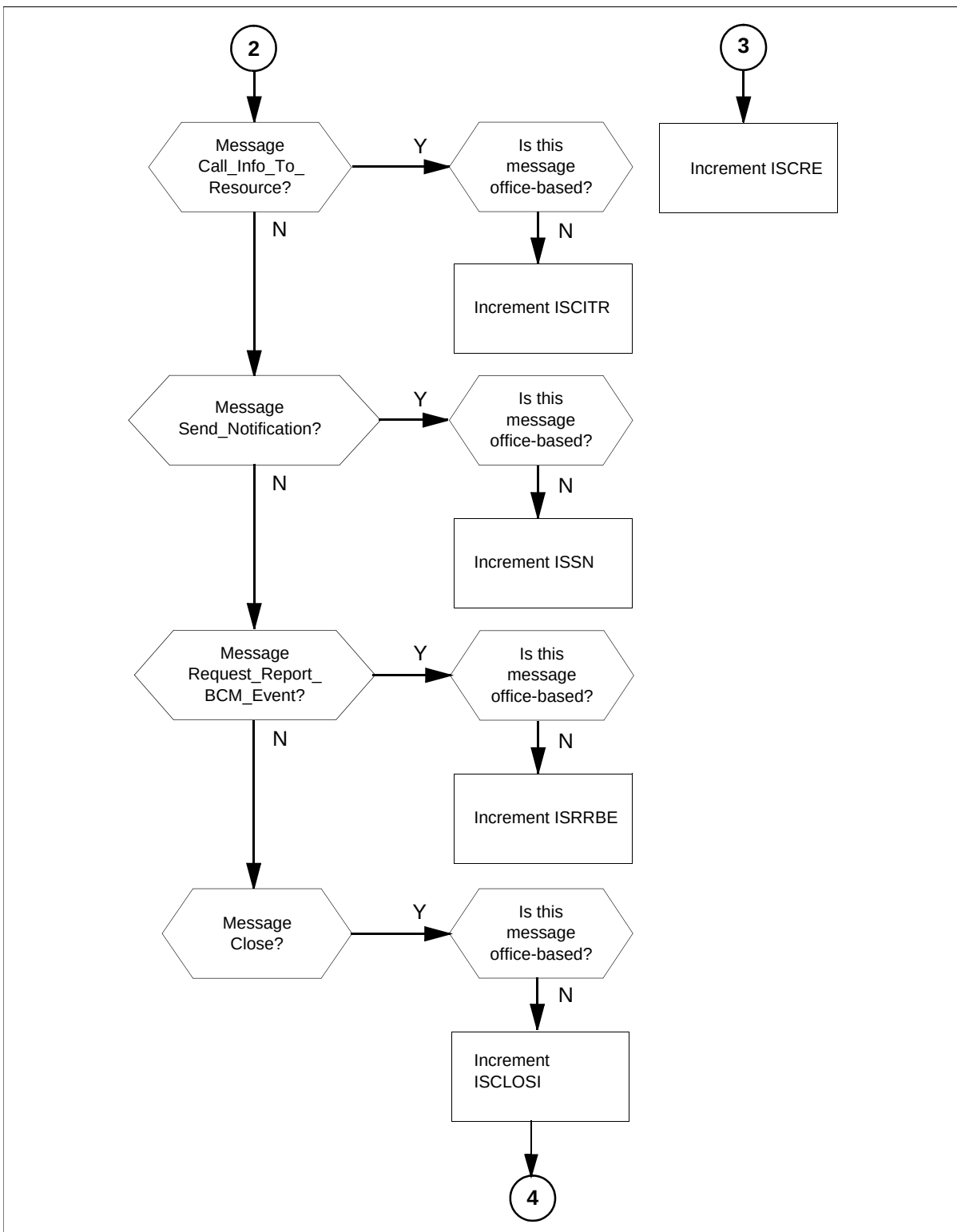


Figure 3 OM group AINICSUB registers (continued)



15.6 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.

15.6.1 Register ISAR release history

NA008 introduced the ISAR register.

15.6.2 Related registers

The IOAR register counts the analyze_route messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

The validation formula for this register is $ISAR + IOAR = \text{total analyze\_route messages}$

15.6.3 Related logs

There are no related logs.

15.6.4 Extension registers

There are no extension registers.

15.7 Register ISCINFO

Interactive Subscribed Collect_Information (ISCINFO)

The ISCINFO register counts the Collect_Information messages received in response to a line-subscribed trigger encounter.

15.7.1 Register ISCINFO release history

NA010 introduced the ISCINFO register.

15.7.2 Related registers

The IOCINFO register counts the Collect_Information messages that the SSP receives when the SSP hits an office subscribed trigger.

The validation formula for this register is $ISCINFO + IOCINFO = \text{total Collect\_Information messages}$

15.7.3 Related logs

There are no related logs.

15.7.4 Extension registers

There are no extension registers.

15.8 Register ISCON

IS Continue (ISCON)

The ISCON register counts continue messages that the SSP receives from the SCP, in a transaction that a subscribed message initiates.

15.8.1 Register ISCON release history

NA008 introduced the ISCON register.

15.8.2 Related registers

The IOCON register counts the continue messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

The validation formula for this register is $ISCON + IOCON = \text{total continue messages}$

15.8.3 Related logs

There are no related logs.

15.8.4 Extension registers

There are no extension registers.

15.9 Register ISAUTHT

IS Authorize_Termination (ISAUTHT)

The ISAUTHT register counts authorize_termination messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

15.9.1 Register ISAUTHT release history

NA008 introduced the ISAUTHT register.

15.9.2 Related registers

There are no related registers.

15.9.3 Related logs

There are no related logs.

15.9.4 Extension registers

There are no extension registers.

15.10 Register ISCTR

Register IS Connect_To_Resource (ISCTR) counts the Connect_To_Resource messages the SSP receives from the SCP in a subscribed-message initiated transaction.

15.10.1 Register ISCTR release history

The NA017 product release introduced the ISCTR register.

15.10.2 Related registers

There are no related registers.

15.10.3 Related logs

There are no related logs.

15.10.4 Extension registers

There are no extension registers.

15.11 Register ISFC

IS Forward_Call (ISFC)

The ISFC register counts forward_call messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

15.11.1 Register ISFC release history

NA008 introduced the ISFC register.

15.11.2 Related registers

There are no related registers.

15.11.3 Related logs

There are no related logs.

15.11.4 Extension registers

There are no extension registers.

15.12 Register ISDISC

IS Disconnect (ISDISC)

The ISDISC register counts the disconnect messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

15.12.1 Register ISDISC release history

NA008 introduced the ISDISC register.

15.12.2 Related registers

The IODISC register counts the disconnect messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

The validation formula for this register is $IODISC + ISDISC = \text{total disconnect messages}$

15.12.3 Related logs

There are no related logs.

15.12.4 Extension registers

There are no extension registers.

15.13 Register ISSTR

IS Send_To_Resource (ISSTR)

The ISSTR register counts the send_to_resource messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

15.13.1 Register ISSTR release history

NA008 introduced the ISSTR register.

15.13.2 Related registers

The IOCRES register counts the cancel_resource_event messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

The IOSTR register counts the send_to_resource messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

The ISRCLR register counts the resource_clear messages that the SSP sends to the SCP in a transaction that a subscribed message initiates.

The IORCLR register counts the resource_clear messages that the SSP sends to the SCP in a transaction that an office-based message initiates.

Validation formulas for the related registers follow:

- $IOCRES + ISCRES = \text{total cancel\_resource\_event messages}$
- $IOSTR + ISSTR = \text{total send\_to\_resource messages}$

15.13.3 Related logs

There are no related logs.

15.13.4 Extension registers

There are no extension registers.

15.14 Register ISCRES

IS Cancel_Resource_Event (ISCRES)

The ISCRES register counts the cancel_resource_event messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

15.14.1 Register ISCRE release history

NA008 introduced the ISCRE register.

15.14.2 Related registers

The IOCRES register counts the cancel_resource_event messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

The ISSTR register counts the send_to_resource messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

The IOSTR register counts the send_to_resource messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

The ISRCLR register counts the resource_clear messages that the SSP sends to the SCP in a transaction that a subscribed message initiates.

The IORCLR register counts the resource_clear messages that the SSP sends to the SCP in a transaction that an office-based message initiates.

Validation formulas for related registers follow:

- $\text{IOCRES} + \text{ISCRE} = \text{total cancel\_resource\_event messages}$
- $\text{ISSTR} + \text{IOSTR} = \text{total send\_to\_resource messages}$

15.14.3 Related logs

There are no related logs.

15.14.4 Extension registers

There are no extension registers.

15.15 Register ISCITR

IS Call_Info_To_Resource (ISCITR)

The ISCITR register counts call_info_to_resource messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

15.15.1 Register ISCITR release history

NA008 introduced the ISCITR register.

15.15.2 Related registers

The IOCITR register counts the call_info_to_resource messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

The validation formula for this register is $\text{IOCITR} + \text{ISCITR} = \text{total call\_info\_to\_resource messages}$

The IOCIFR register counts the call_info_from_resource messages that the SSP sends to the SCP in a transaction that an office-based message initiates.

The ISCIFR register counts the call_info_from_resource messages that the SSP sends to the SCP in a transaction that a subscribed message initiates.

15.15.3 Related logs

There are no related logs.

15.15.4 Extension registers

There are no extension registers.

15.16 Register ISSN

IS Send_Notification (ISSN)

The ISSN register counts the send_notification messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

15.16.1 Register ISSN release history

NA008 introduced the ISSN register.

15.16.2 Related registers

The IOSN register counts the send_notification messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

The validation formula for this register is $\text{IOSN} + \text{ISSN} = \text{total send\_notification messages}$

The IOTN register counts the termination_notification messages that the SSP sends to the SCP in a transaction that an office-based message initiates.

The ISTN register counts the termination_notification messages that the SSP sends to the SCP in a transaction that a subscribed message initiates.

15.16.3 Related logs

There are no related logs.

15.16.4 Extension registers

There are no extension registers.

15.17 Register ISRRBE

IS Request_Report_BCM_Event (ISRRBE)

The ISRRBE register counts request_report_BCM_event messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

The validation formula for this register is $ISRRBE + IORRBE = \text{total request\_report\_BCM\_event messages}$

15.17.1 Register ISRRBE release history

NA008 introduced the ISRRBE register.

15.17.2 Related registers

There are no related registers.

15.17.3 Related logs

There are no related logs.

15.17.4 Extension registers

There are no extension registers.

15.18 Register ISCLOSI

IS Close (ISCLOSI)

The ISCLOSI register counts close messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

15.18.1 Register ISCLOSI release history

NA008 introduced the ISCLOSI register.

15.18.2 Related registers

There are no related registers.

15.18.3 Related logs

There are no related logs.

15.18.4 Extension registers

There are no extension registers.

15.19 Register ISOFRCL

Interactive, Subscribed, Offer_Call (ISOFRCL)

The ISOFRCL register counts Offer_Call messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

15.19.1 Register ISOFRCL release history

NA011 introduces the ISOFRCL register.

15.19.2 Related registers

There are no related registers.

15.19.3 Related logs

There are no related logs.

15.19.4 Extension registers

There are no extension registers.

15.20 Register ISDL

Incoming Subscriber Disconnect Leg (ISDL).

The ISDL register counts the number of incoming subscriber-based Disconnect Leg responses received by the SSP.

15.20.1 Register ISDL release history

The NA019 product release introduces register ISDL.

15.20.2 Related registers

Register IODL records the number of office-based Disconnect Leg messages received by the SSP.

Register DLFL counts the number of times that the Disconnect Leg response fails to complete its task.

15.20.3 Related logs

There are no related logs.

15.20.4 Extension registers

There are no extension registers.

15.21 Release history**15.21.1 SN07 (DMS)**

The register ISDL was added to OM group AINICSUB, (Q00765666).

15.21.2 NA017

The register ISCTR was added to OM group AINICSUB, (59037140).

15.21.3 NA008

NA008 introduced OM group AINICSUB.

16 OM group AINNCR

16.1 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.

16.2 Registers

The following figure illustrates OM group AINNCR registers as they appear on the MAP terminal display.

Figure 117 MAP terminal display of OM group AINNCR registers

NACG	NAOVFW	NAGCR	NAGCRS
NUPREQ	NUPDAT	NMFC	NMSUCC
NSREP	NUPD	NUSUCC	

16.3 Group structure

OM group AINNCR provides one tuple per office.

Key field:

There is no Key field

Info field:

There is no Info field

16.4 Associated OM groups

The following associated OM groups provide message counts for AIN Service Enablers:

- AIN outgoing office-based messages (AINOGOFF) counts the AIN Service Enablers office-based messages the SSP sends to the SCP. This OM group monitors the outgoing traffic to the SCP.
- AIN incoming office-based messages (AINICOFF) counts AIN Service Enablers office-based messages the SCP sends to the SSP. This OM group monitors the incoming traffic 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 traffic 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 traffic to the SSP.
- 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 blocking of AIN R0.1 queries by ACG, ACG control list overflows, 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 AINOGSUB 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

16.5 Associated functional groups

There are no correct associated functional groups.

16.6 Associated functionality codes

There are no correct associated functionality codes.

The following figure illustrates the logical flow for OM group AINNCR registers.

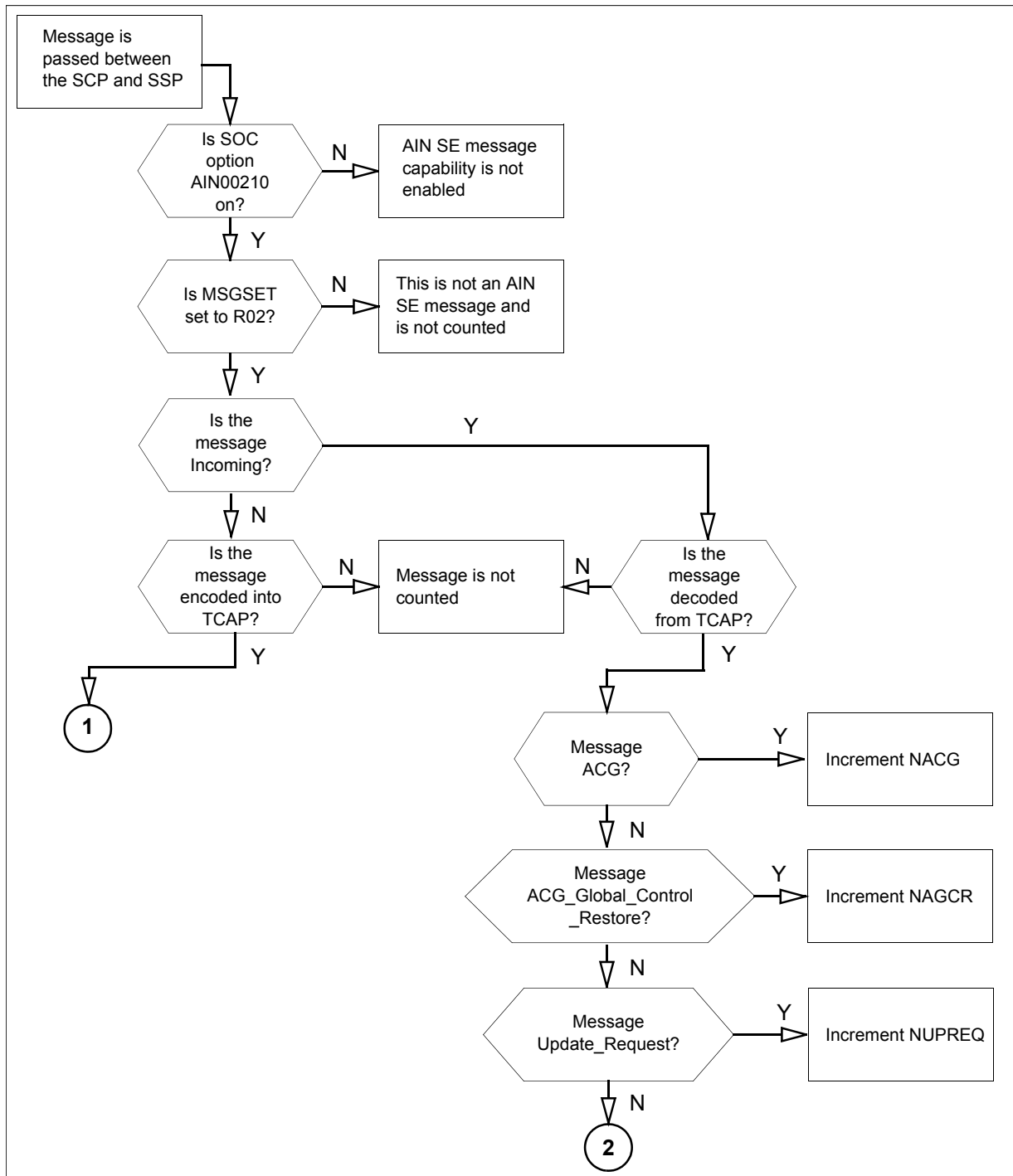
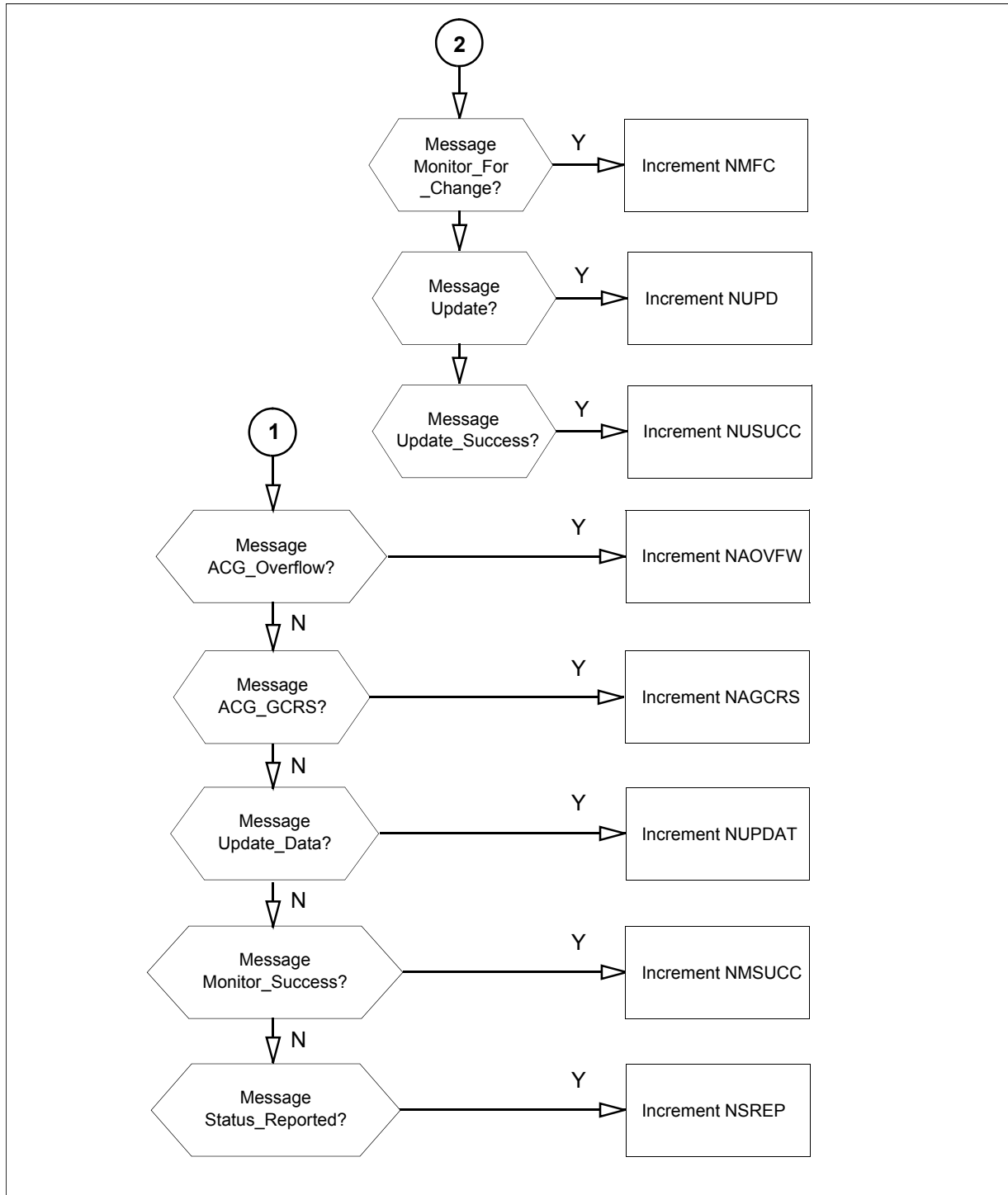
Figure 118 Logic flow for OM group AINNCR registers

Figure 118 Logic flow for OM group AINNCR registers (continued)



16.7 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:

- $\text{AINNCR registers NACG} + \text{NAGCR} + \text{NUPREQ} + \text{NMFC} = \text{total of all incoming, non-call-related messages}$
- $\text{AINNCR registers NACG} + \text{NAGCR} + \text{NUPREQ} + \text{NMFC} + \text{total of AINICSUB group} + \text{total of AINICOFF group} = \text{total incoming messages}$
- $\text{AINNCR registers NACG} + \text{NUPREQ} + \text{NAGCR} + \text{NMFC} = \text{total of all incoming, unsolicited, non-call-related messages}$

16.7.1 Register NACG release history

Register NACG was introduced in NA008.

16.7.2 Associated registers

There are no associated registers

16.7.3 Associated logs

There are no associated logs.

16.7.4 Extension registers

There are no extension registers.

16.8 Register NAOVFW

Register N ACG_Overflow (NAOVFW) counts ACG_Overflow messages sent from the SSP sends to the SCP.

The following are validation formulas for register NAOVFW:

- $\text{AINNCR registers NAOVFW} + \text{NAGCRS} + \text{NUPDAT} + \text{NMSUCC} + \text{NSREP} = \text{total of all outgoing non-call-related messages}$
- $\text{AINNCR registers NAOVFW} + \text{NAGCRS} + \text{NUPDAT} + \text{NMSUCC} + \text{NSREP} + \text{total of AINOFSUB group} + \text{total of AINOFSOFF group} = \text{total outgoing messages}$

16.8.1 Register NAOVFW release history

Register NAOVFW was introduced in NA008.

16.8.2 Associated registers

There are no associated registers.

16.8.3 Associated logs

There are no associated logs.

16.8.4 Extension registers

There are not extension registers.

16.9 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

16.9.1 Register NAGCR release history

Register NAGCR was introduced in NA008.

16.9.2 Associated registers

There are no associated registers.

16.9.3 Associated logs

There are no associated logs.

16.9.4 Extension registers

There are no extension registers.

16.10 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 AINOFSOFF group = total outgoing messages

16.10.1 Register NAGCRS release history

Register NAGCRS was introduced in NA008.

16.10.2 Associated registers

There are no associated registers.

16.10.3 Associated logs

There are no associated logs.

16.10.4 Extension registers

There are no extension registers.

16.11 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:

- $\text{AINNCR registers NUPREQ} + \text{NAGCR} + \text{NACG} + \text{NMFC} = \text{total of all incoming, non-call-related messages}$
- $\text{AINNCR registers NUPREQ} + \text{NACG} + \text{NAGCR} + \text{NMFC} + \text{total of AINICSUB group} + \text{total of AINICOFF group} = \text{total incoming messages}$
- $\text{AINNCR registers NUPREQ} + \text{NAGCR} + \text{NACG} + \text{NMFC} = \text{total of all incoming, unsolicited, non-call-related messages}$

16.11.1 Register NUPREQ release history

Register NUPREQ was introduced in NA008.

16.11.2 Associated registers

There are no associated registers.

16.11.3 Associated logs

There are no associated logs.

16.11.4 Extension registers

There are no extension registers.

16.12 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:

- $\text{AINNCR registers NUPDAT} + \text{NAGCRS} + \text{NAOVFW} + \text{NMSUCC} + \text{NSREP} = \text{total of all outgoing non-call-related messages}$
- $\text{AINNCR registers NUPDAT} + \text{NAGCRS} + \text{NAOVFW} + \text{NMSUCC} + \text{NSREP} + \text{total of AINOGBSUB group} + \text{total of AINOGOFF group} = \text{total outgoing messages}$

16.12.1 Register NUPDAT release history

Register NUPDAT was introduced in NA008.

16.12.2 Associated registers

There are no associated registers.

16.12.3 Associated logs

There are no associated logs.

16.12.4 Extension registers

There are no extension registers.

16.13 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:

- $\text{AINNCR registers NMFC} + \text{NACG} + \text{NAGCR} + \text{NUPREQ} + \text{total of AINICSUB group} + \text{total of AINICOFF group} = \text{total incoming messages}$
- $\text{AINNCR registers NMFC} + \text{NAGCR} + \text{NUPREQ} + \text{NACG} + \text{total of AINICSUB group} + \text{total of AINICOFF group} = \text{total incoming messages}$
- $\text{AINNCR registers NMFC} + \text{NAGCR} + \text{NACG} + \text{NUPREQ} = \text{total of all incoming, unsolicited, non-call-related messages}$

16.13.1 Register NMFC release history

Register NMFC was introduced in NA008.

16.13.2 Associated registers

There are no associated registers.

16.13.3 Associated logs

There are no associated logs.

16.13.4 Extension registers

There are no extension registers,

16.14 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:

- $\text{AINNCR registers NMSUCC} + \text{NAGCRS} + \text{NUPDAT} + \text{NAOVFW} + \text{NSREP} = \text{total of all outgoing non-call-related messages}$
- $\text{AINNCR registers NMSUCC} + \text{NAGCRS} + \text{NAOVFW} + \text{NUPDAT} + \text{NSREP} + \text{total of AINOgsub group} + \text{total of AINOgOFF group} = \text{total outgoing messages}$

16.14.1 Register NMSUCC release history

Register NMSUCC was introduced in NA008.

16.14.2 Associated registers

There are no associated registers.

16.14.3 Associated logs

There are no associated logs.

16.14.4 Extension registers

There are no extension registers.

16.15 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:

- $\text{AINNCR registers NSREP} + \text{NAGCRS} + \text{NUPDAT} + \text{NMSUCC} + \text{NAOVFW} = \text{total of all outgoing non-call-related messages}$
- $\text{AINNCR registers NSREP} + \text{NAGCRS} + \text{NAOVFW} + \text{NUPDAT} + \text{NMSUCC} + \text{total of AINOGSUB group} + \text{total of AINOGOFF group} = \text{total outgoing messages}$

16.15.1 Register NSREP release history

Register NSREP was introduced in NA008.

16.15.2 Associated registers

There are no associated registers.

16.15.3 Associated logs

There are no associated logs.

16.15.4 Extension registers

There are no extension registers.

16.16 Register NUPD

N Update (NUPD) counts Update messages sent from the SCP to the SSP.

16.16.1 Register NUPD release history

Register NUPD was introduced in NA009.

16.16.2 Associated registers

NUSUCC

16.16.3 Associated logs

There are no associated logs.

16.16.4 Extension registers

There are no extension registers.

16.17 Register NUSUCC

N Update_Success (NUSUCC) counts Update_Success messages sent from the SSP to the SCP.

16.17.1 Register NUSUCC release history

Register NUSUCC was introduced in NA009.

16.17.2 Associated registers

NUPD

16.17.3 Associated logs

There are no associated logs.

16.17.4 Extension registers

There are no extension registers.

16.18 Release history

OM group AINNCR was introduced in NA008.

17 OM group AINOGOFF

17.1 OM description

OM group Advanced intelligent network outgoing office-based (AINOGOFF).

The OM group AINOGOFF counts AIN Service Enablers office-based messages the service switching point (SSP) sends to the service control point (SCP). This OM group 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. An OM register increases when the system sends or receives the message that corresponds with the register. A message sends when the message encodes into the transaction-capability application part (TCAP) protocol. The system receives a message correctly when the message decodes from the TCAP protocol.

Decoding a TCAP message involves several error checks. After the message parameters decode, the TCAP package counts the message when it detects an error in the message parameters. When the TCAP package or component detects an error, the message is not counted.

The following are errors in the TCAP package or component:

- 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

The OM group AINOGOFF contains 10 registers that count call-related, outgoing, office-based, Service Enablers messages. The registers count messages entered as R02 in tables TRIGDIG or TRIGINFO.

The following office-based triggers can subscribe to:

- Specific_Digit_String
- N11

17.2 Registers

The OM group AINOGOFF registers appear on the MAP terminal as follows:

TOIASDS	TOIAN11	EONB	EOOCB
EOONA	EOOANS	IOTN	IOCIFR
IORCLR	IOCLOSO	EOODCLED	EOODCING
EOTOUT	TOIAOPFC	IOCCLR	EOOTS

17.3 Group structure

The OM group AINOGOFF provides one tuple for each office.

Key field:

There is no key field.

Info field:

There is no key field.

17.4 Associated OM groups

The following associated OM groups provide AIN Service Enablers message counts:

- The OM group AIN incoming office-based (AINICOFF) counts AIN Service Enablers office-based messages the service control point (SCP) sends to the service switching point (SSP). This OM group monitors the incoming traffic 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 traffic to the SCP.
- The OM group AIN outgoing subscription-based 2 (AINOGSB2) also counts the AIN Service Enablers subscription-based messages the SSP sends to the SSP. This OM group monitors outgoing traffic 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 traffic 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 + TSOCBCB + TSONANA + TSOAOHI + 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 + TOIAOPFC AINOFSUB registers TSIAPFC + TSIASFC + TSIACDP = total Info_Analyzed messages
- AINOGOFF register EOTOUT + AINOFSUB register ESOMTOUT + AINOFSB2 ESTMTOUT = total Timeout messages.
- AINOGOFF registers EOOCLED + EOOCDCING + AINOFSUB registers ESODCLED + ESODDCING = total O_Disconnect messages.

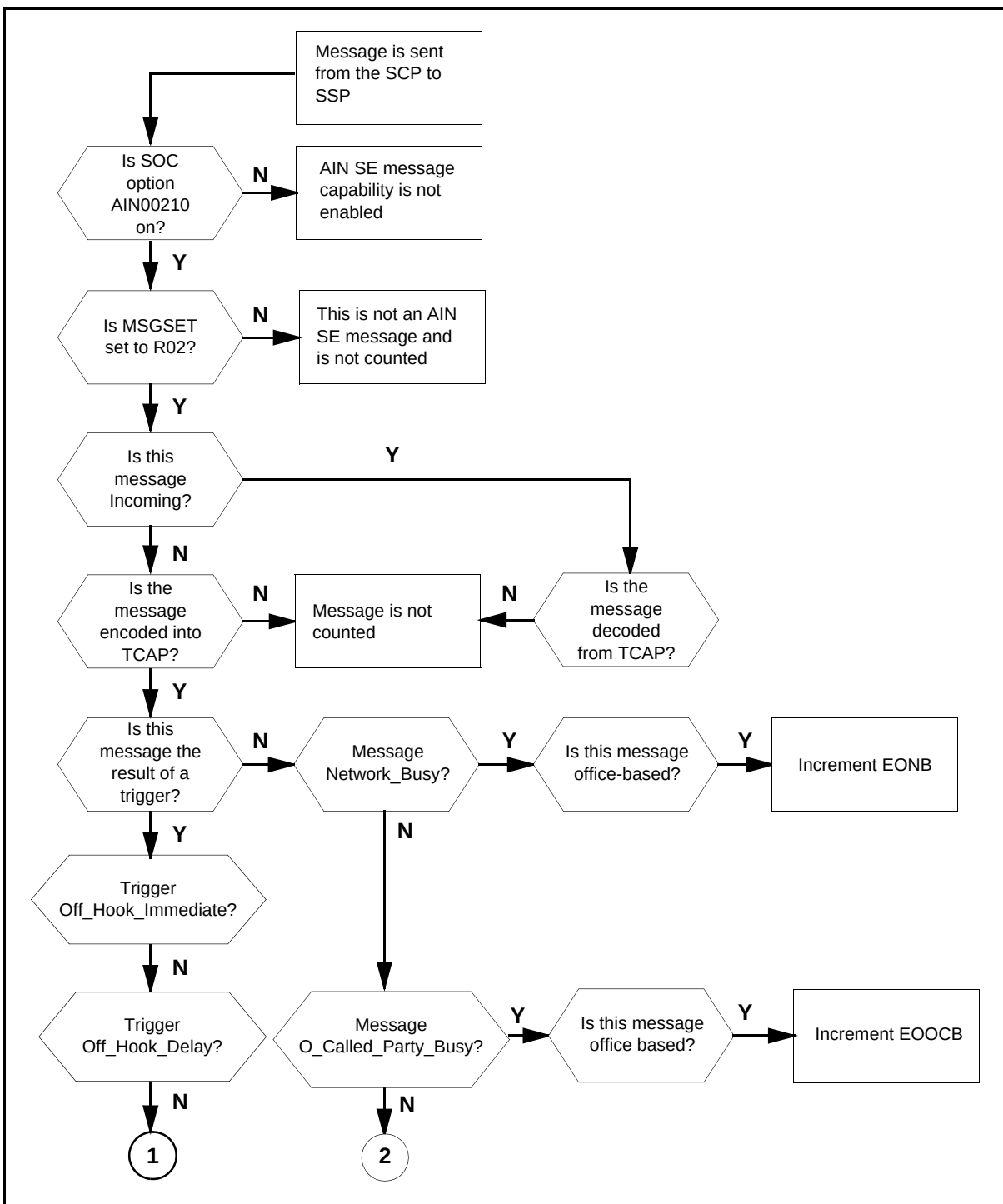
17.5 Associated functional groups

There are no applicable associated functional groups.

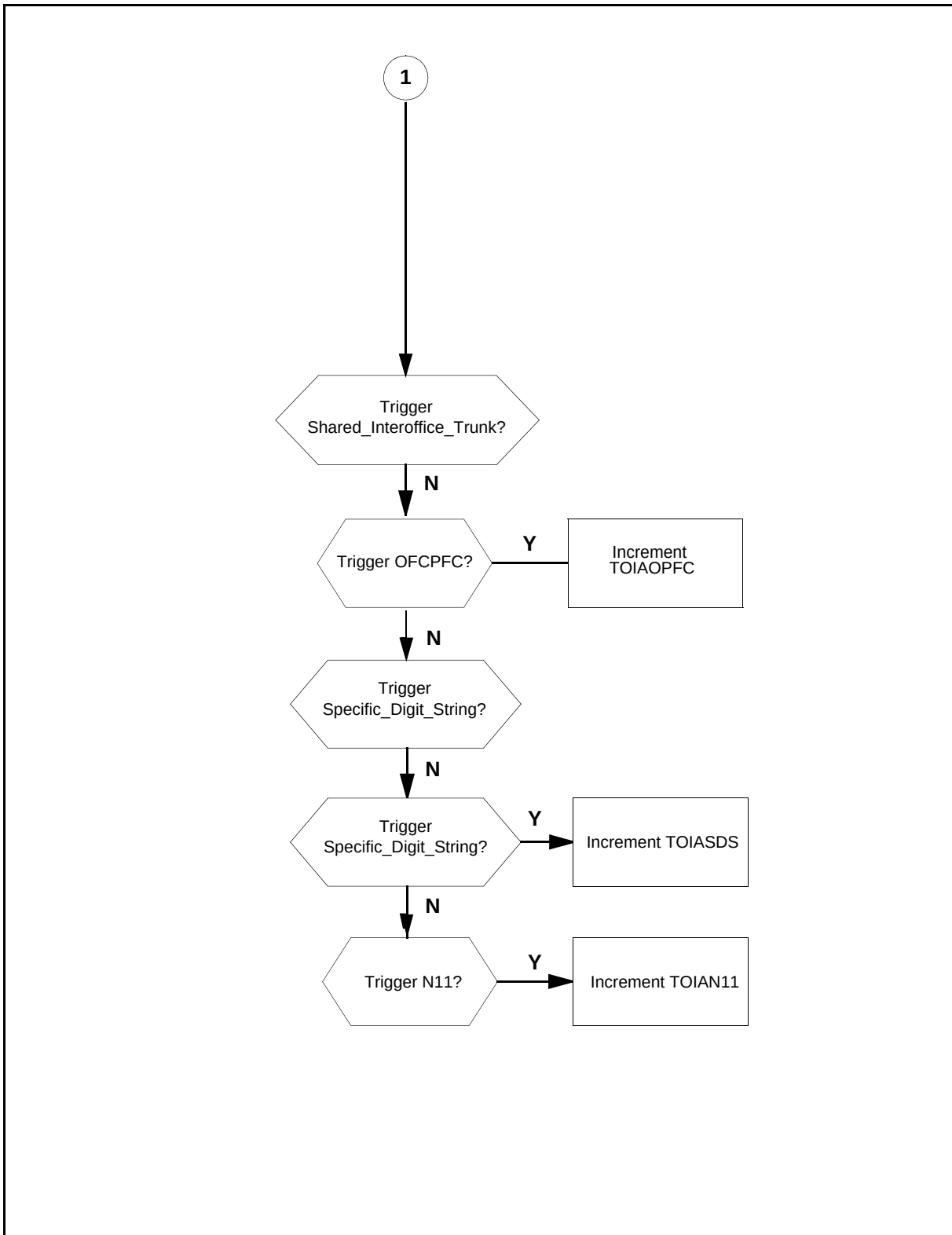
17.6 Associated functionality codes

There are no applicable associated functionality codes.

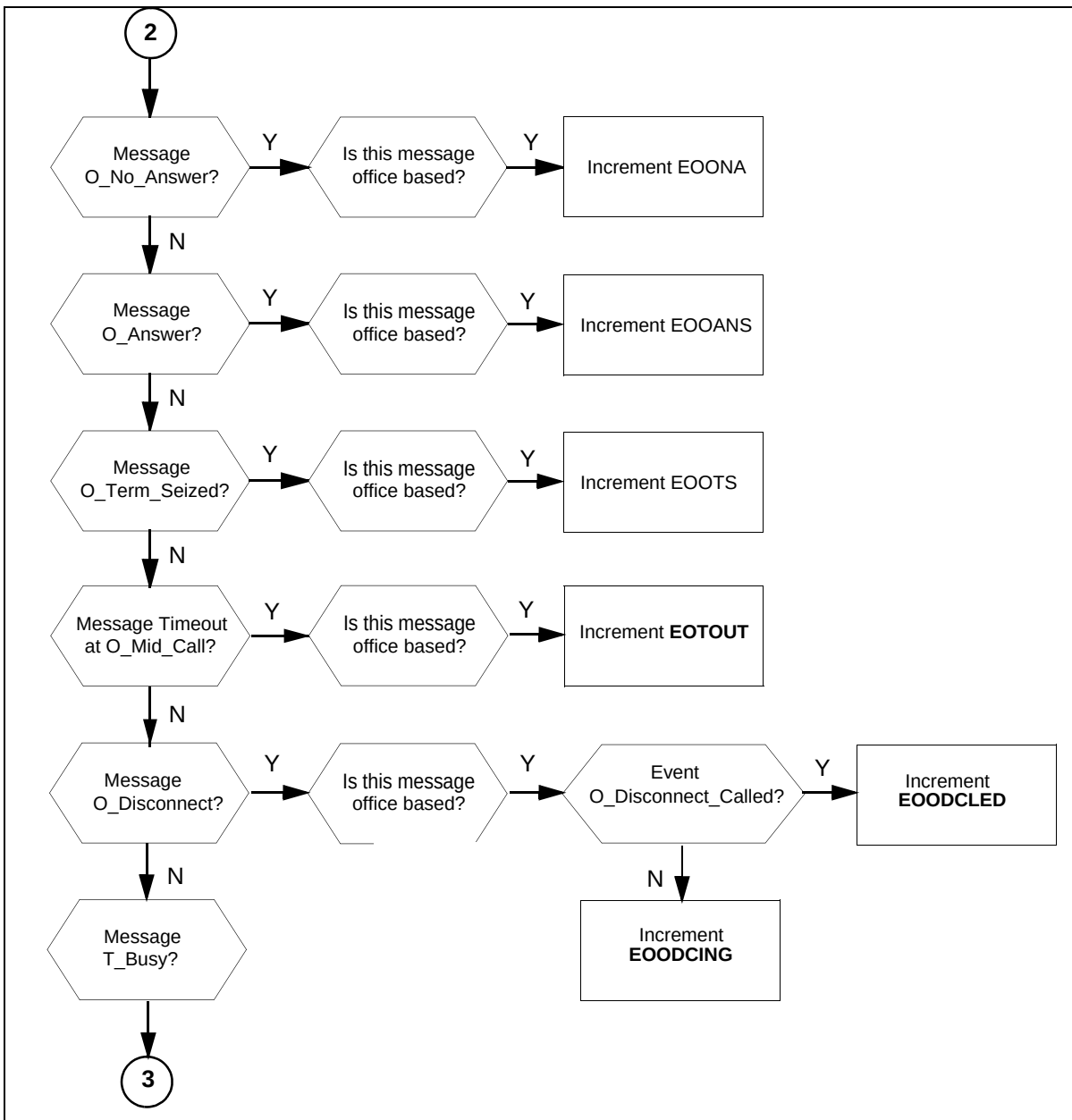
OM group AINOGOFF registers

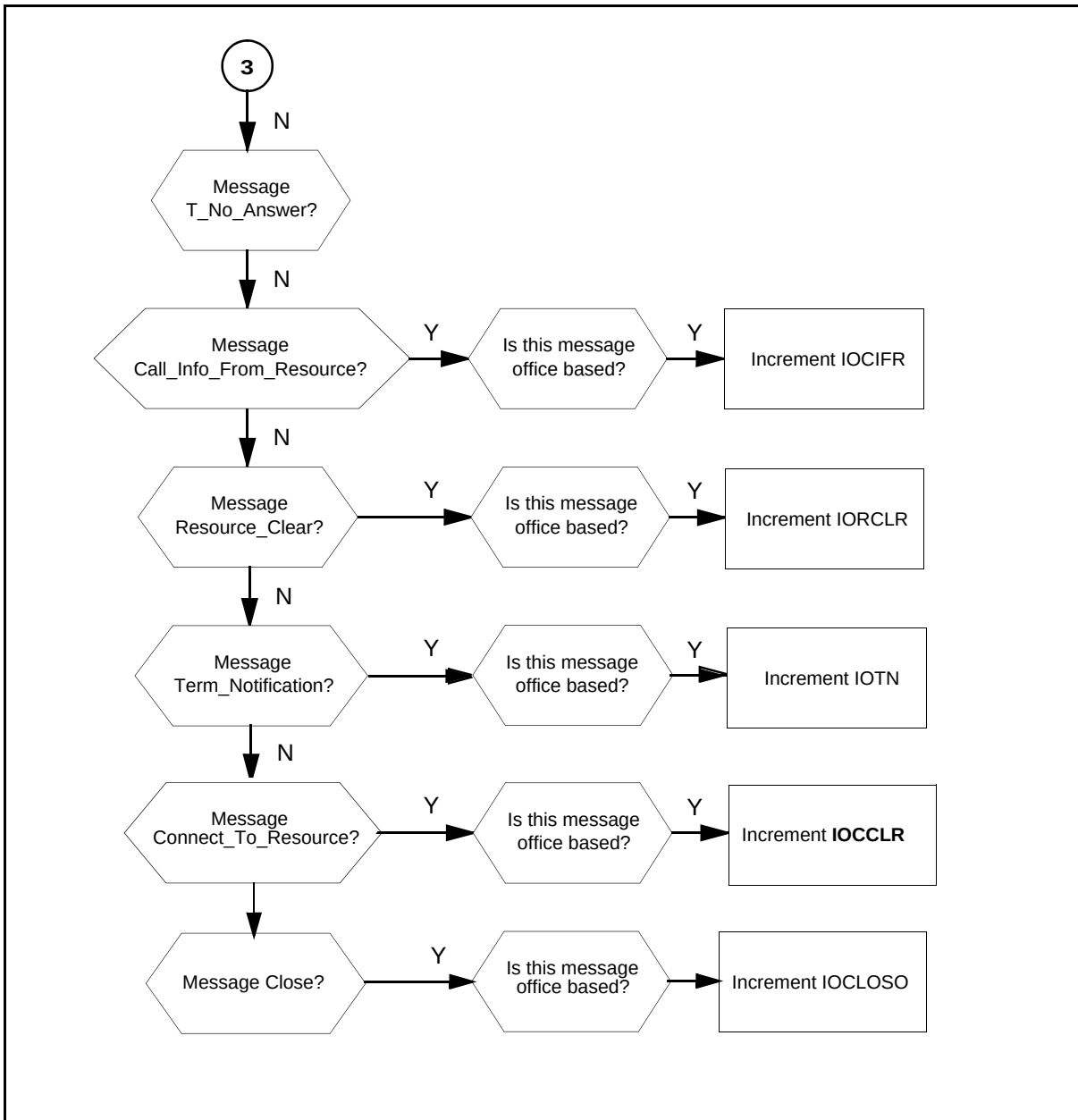


OM group AINOGOFF registers



OM group AINOGOFF registers (continued)



OM group AINOGOFF registers**17.7 Register TOIASDS**

TO Info_Analyzed for Specific_Digit_String (TOIASDS)

Register TOIASDS counts Info_Analyzed messages the SSP sends to the SCP. These messages are a result of a Specific_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.

17.8 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.

17.9 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:

- $\text{AINOGSCUB register ESNB} + \text{AINOGOFF registers EONB} + \text{TSNBAFR} = \text{total Network\_Busy messages}$
- $\text{AINOGOFF registers EONB} + \text{EOONA} + \text{EOOANS} + \text{EOOCB} + \text{AINOGSUB registers ESNB} + \text{ESOANS} + \text{ESONA} + \text{ESOCB} + \text{ESTBSY} + \text{ESTNA} = \text{total Service Enablers event detection point (EDP) messages}$

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

17.10 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. $\text{AINGOSUB registers ESOCB} + \text{TSOCBCB} + \text{AINOGOFF register EOOCB} = \text{total O\_Called\_Party\_Busy messages.}$

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

17.11 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 $ESONA + TSONANA + EOONA = \text{total O\_No\_Answer messages}$.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

17.12 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 $ESOANS + AINOGOFF \text{ register } EOOANS = \text{total O\_Answer messages}$.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

17.13 Register EOOTs

EO O_Term_Seized (EOOTS)

EO O_Term_Seized (EOOTS) counts O_Term_Seized messages sent from the SSP to the SCP as a result of an O_Term_Seized EDP-N being armed by an office subscribed trigger.

Register EOOTs release history

Register EOOTs was introduced in SN06.

Associated registers

Register ESOTS counts O_Term_Seized messages the SSP sends to the SCP as a result of an O_Term_Seized EDP-N being armed by a non-office subscribed trigger.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

17.14 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 office-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 office-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.

17.15 Register IOCCLR

Register IO CTR_Clear (IOCCLR) counts CTR_Clear messages sent from the SSP to the SCP, in a transaction an office-based message initiates IO CTR_Clear.

Register IOCCLR release history

Register IOCCLR was introduced in NA017.

Associated register

There are associated registers.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

17.16 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 office-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. $\text{AINOGSUB register ISCIFR} + \text{AINOGOFF register IOCIFR} = \text{total Call\_Info\_From\_Resource messages.}$

Register IOCITR counts Call_Info_To_Resource messages received at the SSP from the SCP, in a transaction that an office-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.

17.17 Register IORCLR

IO Resource_Clear (IORCLR)

Register IORCLR counts Resource_Clear messages sent from the SSP to the SCP, in a transaction an office-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. $\text{AINOGSUB register ISRCLR} + \text{AINOGOFF register IORCLR} = \text{total Resource\_Clear messages}$.

Register IOSTR counts Send_to_Resource messages received at the SSP from the SCP, in a transaction that an office-based message initiates.

Register IOCRE counts Cancel_Resource_Event messages received at the SSP from the SCP, in a transaction that an office-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.

17.18 Register IOCLOSO

IO Close IOCLOSO

Register IOCLOSO counts Close messages the SSP sends to the SCP, in a transaction that an office-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. $\text{AINOGSUB register ISCLOSO} + \text{AINICOFF register IOCLOSI} + \text{AINICSUB register ISCLOSI} + \text{AINOGOFF register IOCLOSO} = \text{total closed messages}$.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

17.19 Register EOODCING

Register EOODCING counts the number of O_Disconnect_Calling Requested Event messages sent from the SSP to the SCP as a result of an O_Disconnect Calling EDP-R being armed by an office subscribed trigger.

Register EOODCING release history

Register EOODCING is introduced in NA017.

Associated registers

Register ESODCING counts the number of O_Disconnect_Calling event messages as a result of an O_Disconnect Calling EDP-R being armed by an individual subscribed trigger.

These messages are a result of an O_Disconnect_calling event request. AINOGSUB registers $ESODCING + EOODCING = \text{Total number of O\_Disconnect Calling event requests sent to the SCP.}$

Associated logs

There are no associated logs.

17.19.1 Extension registers

There are no extension registers.

17.20 Register EOODCLED

Register EOODCLED counts the number of O_Disconnect_Called Requested Event messages sent from the SSP to the SCP as a result of a O_Disconnect_Called EDP-R being armed, by an office subscribed trigger.

Register EOODCLED release history

Register EOODCLED is introduced in NA017.

Associated registers

Register ESODCLED counts the number of O_Disconnect_Called event messages as a result of an O_Disconnect Calling EDP-R being armed by an individual subscriber.

These messages are a result of a O_Disconnect _Calling event request. AINOGSUB registers $ESODCLED + EOODCLED = \text{Total number of O\_Disconnect\_Called event requests sent to the SCP.}$

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

17.21 Register EOTOUT

Officebased TimeOUT (EOTOUT)

Officebased TimeOUT (EOTOUT) counts the number of Timeout Requested Event messages sent from the SSP to the SCP as a result of an O_Mid_Call Timeout EDP-R being armed by an office subscribed trigger.

Register EOTOUT release history

Register EOOANS was introduced in NA017.

Associated registers

There are no associated registers.

Associated logs

There are no associated logs.

Extension registers

There are no extension registers.

17.22 Release history

SN07 (DMS)

The register EOOTs was added to the flowchart by activity Q00765666.

SN06 (DMS)

Register EOOTs added. Documentation amended at SN07 (DMS) release for CR Q00527425-04.

NA017

The registers (EOTOUT, EODCLED, and EOODCING) were added to the AINOGOFF, (59037100, originally 59028609 and 59028631). Also, the register (IOCCLR) was added to OM group AINOGOFF, (59037140).

NA008

OM group AINOGOFF was introduced.

18 OM group AINOGSUB

18.1 OM description

The OM group Advanced intelligent networks outgoing subscription-based (AINOGSUB) counts AIN Service Enablers subscription-based messages that the service switching point (SSP) sends to the service control point (SCP). This OM group monitors the 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. An OM register increments when the system sends or receives a message that corresponds with the 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 when the system decodes the message from the TCAP protocol.

The AIN messaging 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 the message 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.

Types of errors 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
- Invalid response message
- Bad correlation identifiers
- Duplicated messages

OM group AINOGSUB contains registers that count call-related, outgoing, subscribed, Service Enablers messages. The registers count messages entered as R02 in tables TRIGDIG, TRIGINFO, and TRIGITM.

Triggers that are subscribed to by line or group follow:

- Automatic flexible routing (AFR)
- Channel_Setup PRI
- Specified_Carrier
- One_Plus_Prefix
- International
- Operator_Services
- Customized_Dialing_Plan
- Off-Hook_Immediate
- Off-Hook_Delay
- Public_Feature_Code
- Shared_Interoffice_Trunk
- Specific_Feature_Code
- O_Called_Party_Busy
- O_No_Answer
- Termination_Attempt
- T_Busy
- T_No_Answer

Note: Triggers: AFR, One_Plus_Prefix, Operator_Services, Specified_Carrier, and International can be office-based or subscribed. All messages sent as a result of this trigger count as subscribed.

Registers

OM group AINOGSUB registers display on the MAP terminal as follows:

TSOAOHI	TSICOH	TSICSIT	TSIAPFC
TSIASFC	TSIACDP	TSNBAFR	ESNB
TSOCBCB	ESOCB	TSNANA	ESONA
ESOANS	TSTATTA	ESTBSY	ESTNA
ISCIFR	ISRCLR	ISCLOSO	ISTN
TSTBSY	TSTNA	ESTANS	TSICPRIB
TSIA1PLS	TSIASPCR	TSIAINT	TSIAOPSV
TSTRSA	ESODCLED	ESODCING	ESOMTOUT

18.2 Group structure

OM group AINOGSUB provides one tuple per office.

Key field:

There is no Key field

Info field:

There is no Info field

18.3 Related OM groups

Related OM groups that provide message counts for AIN Service Enablers follow:

- AIN outgoing office-based (AINOGOFF) counts AIN Service Enablers office-based messages that the SSP sends to the SCP. This OM group monitors the outgoing traffic to the SCP.
- AIN incoming office-based (AINICOFF) counts AIN Service Enablers office-based messages that the (SCP) sends to the (SSP). This OM group monitors the incoming traffic to the SSP.
- AIN incoming subscription-based (AINICSUB) counts the AIN Service Enablers subscription-based messages that the SCP sends to the SSP. This OM group monitors the incoming subscription traffic to the SSP.
- AIN non-call-related (AINNCR) counts the AIN messages that pass between the SSP and SCP 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 or TRIGINFO.
- 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 OM group AIN outgoing subscription-based 2 (AINOGSB2) also counts the AIN Service Enablers subscription-based messages the SSP sends to the SCP. This OM group monitors outgoing traffic to the SCP.

Related OM group validation formulas follow:

- total of AINOGSUB group + total of AINOGOFF group = total outgoing call-related Service Enablers messages
- AINOGOFF registers TOIASDS + TOIAN11 + TOIAOPFC + AINOGSUB registers TSIAPFC + TSIASFC + TSIACDP + TSNBAFR +

TSOCBCB + TSONANA + TSOAOHI + TSICOH + TSICSIT = total originating basic call model (BCM) Service Enablers trigger detection point (TDP) messages

- AINOGOFF registers EONB + EOONA + EOOANS + EOOB + AINOGSUB registers ESNB + ESONA + ESOANS + ESOCB + ESTANS + ESTBSY + ESTNA = total Service Enablers event detection point (EDP) messages
- total of AINOGSUB group + total of AINICSUB group + total of AINICOFF group + total of AINOGOFF group = total call-related messages
- total of AINOGSUB group + total of AINOGOFF group + AINNCR registers NAOVFW + NAGCRS + NUPDAT + NMSUCC + NSREP = total outgoing messages
- AINOGOFF registers TOIASDS + TOIAN11 + TOIAOPFC + AINOGSUB registers TSIAPFC + TSIASFC + TSIACDP = total Info_Analyzed messages
- AINOGOFF register EONB + AINOGSUB registers ESNB + TSNBAFR = total Network_Busy messages
- AINOGSUB registers TSICOH + TSICSIT + TSICPRIB = total Collect_Information messages
- AINOGSUB registers TSTATTA + TSTBSY + TSTNA = total terminating basic call model (BCM) AIN Service Enablers trigger detection point (TDP) messages
- AINOGOFF register EONB + AINOGSUB registers ESNB + TSNBAFR = total Network_Busy messages

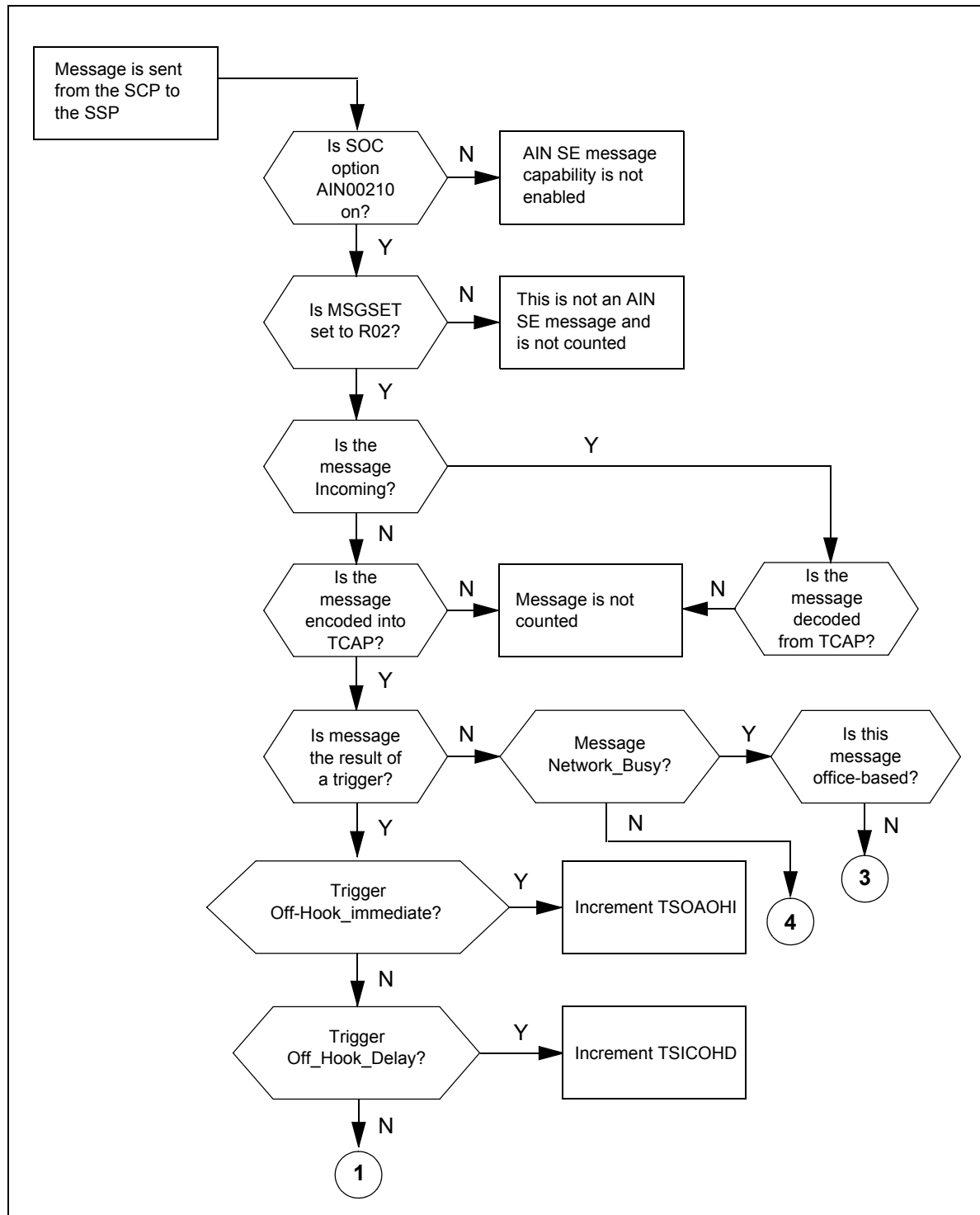
18.4 Related functional groups

There are no related functional groups.

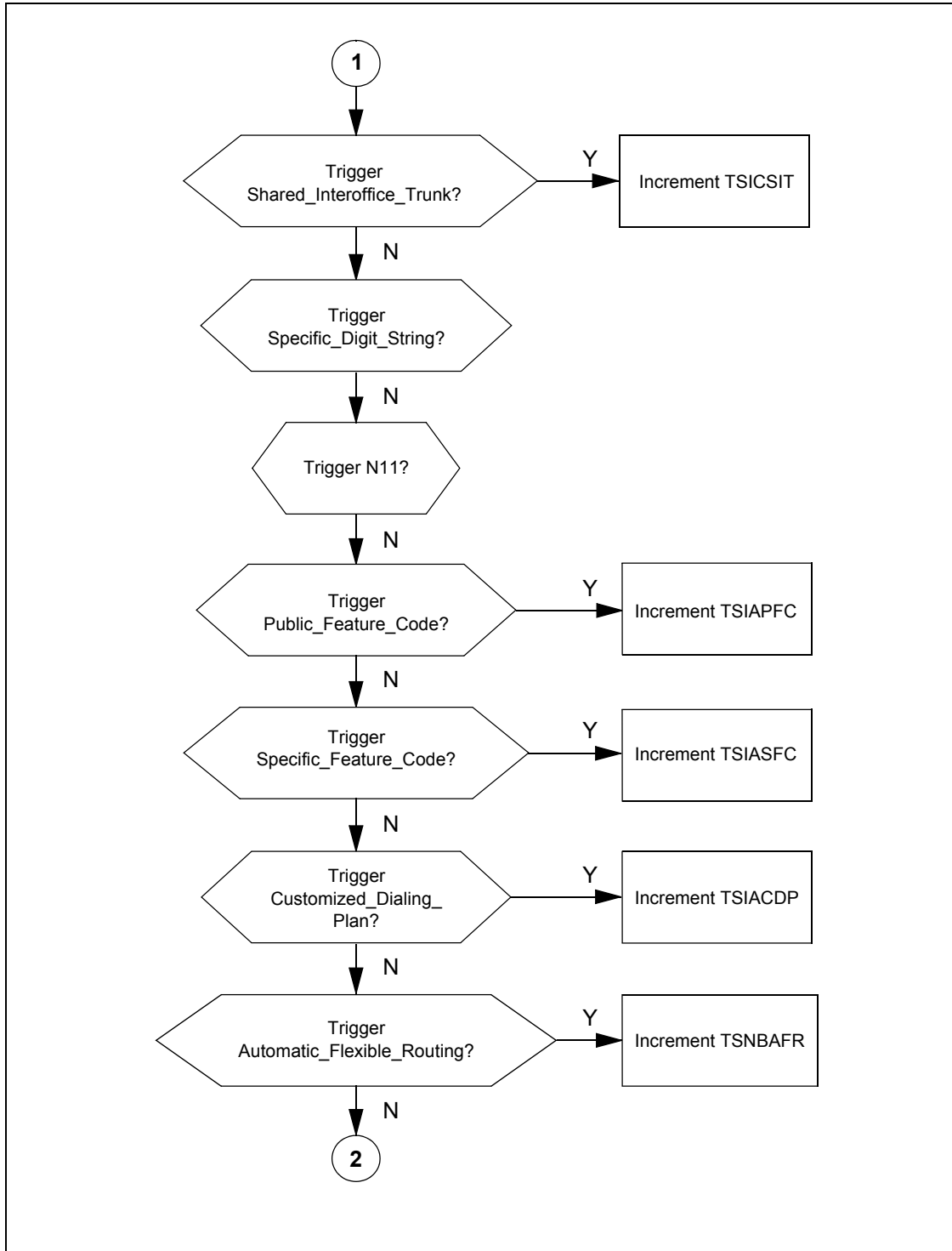
Related functionality codes

There are no related functionality codes.

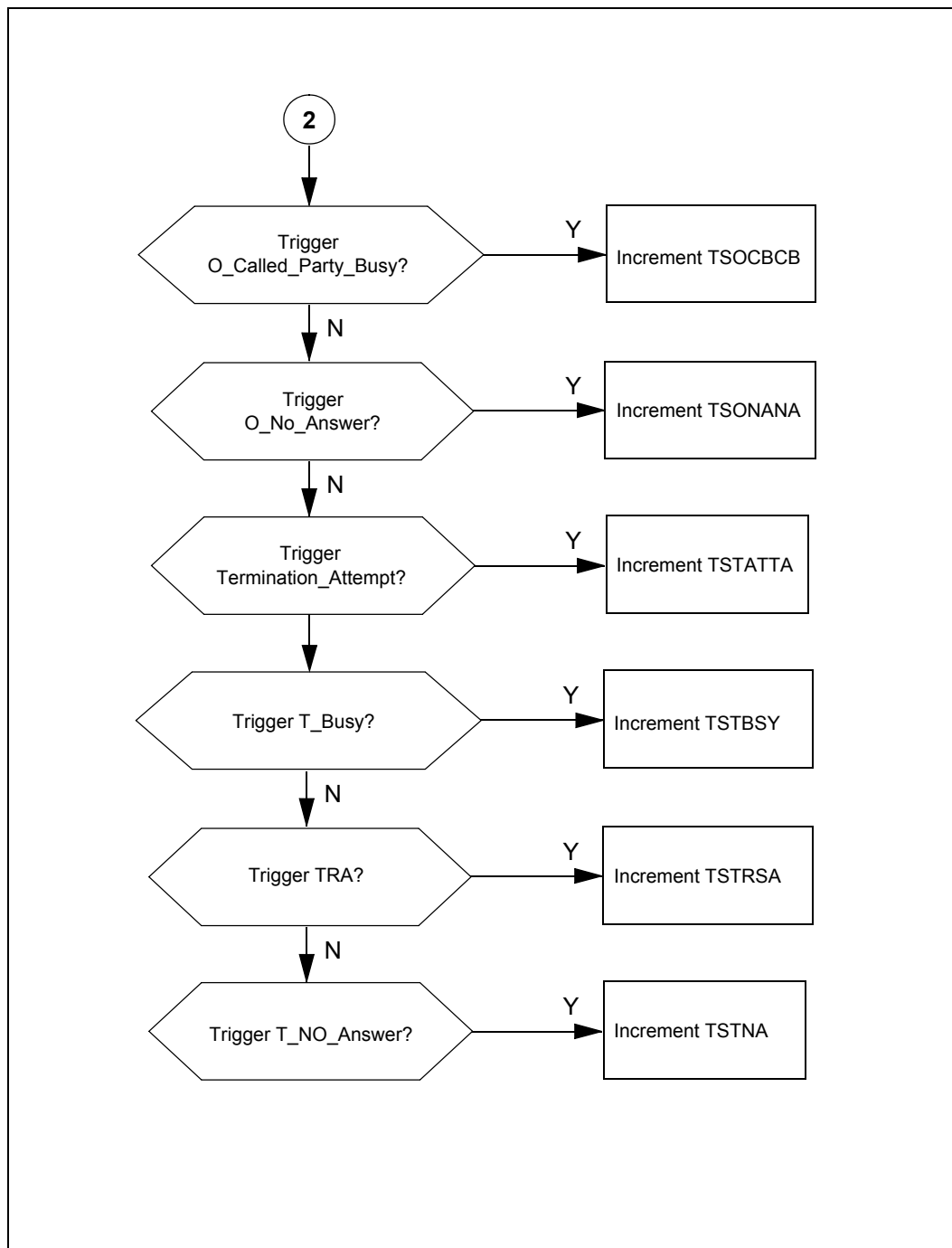
OM group AINOGSUB registers (continued)



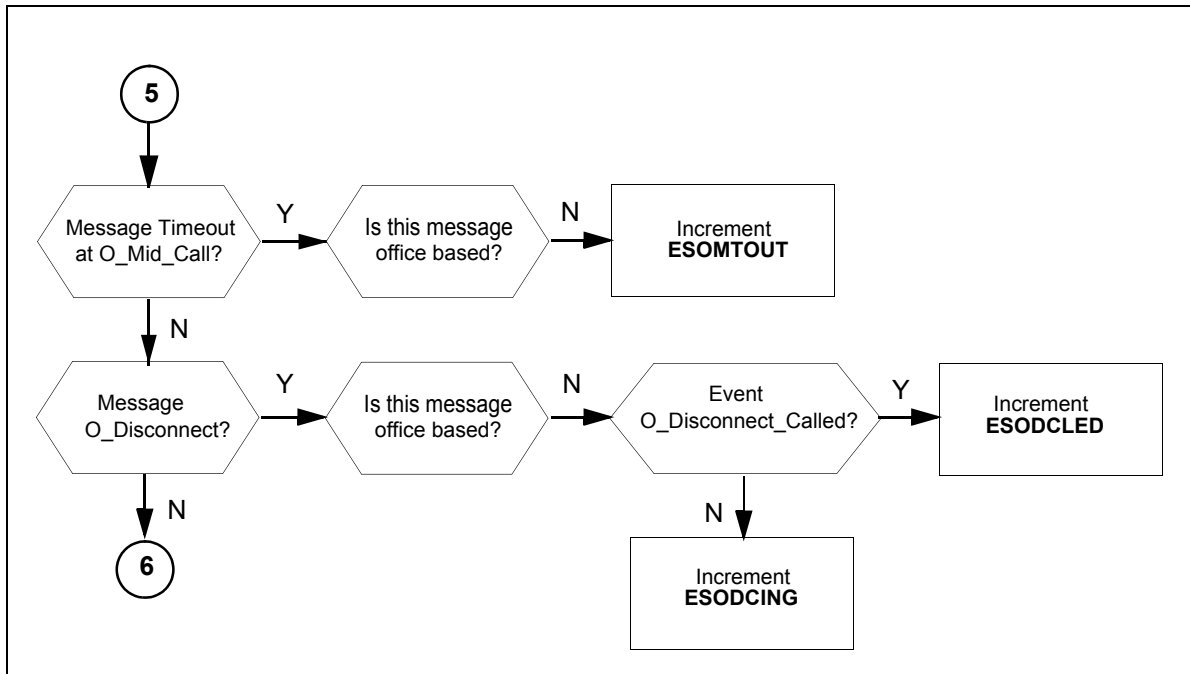
OM group AINOGSUB registers (continued)



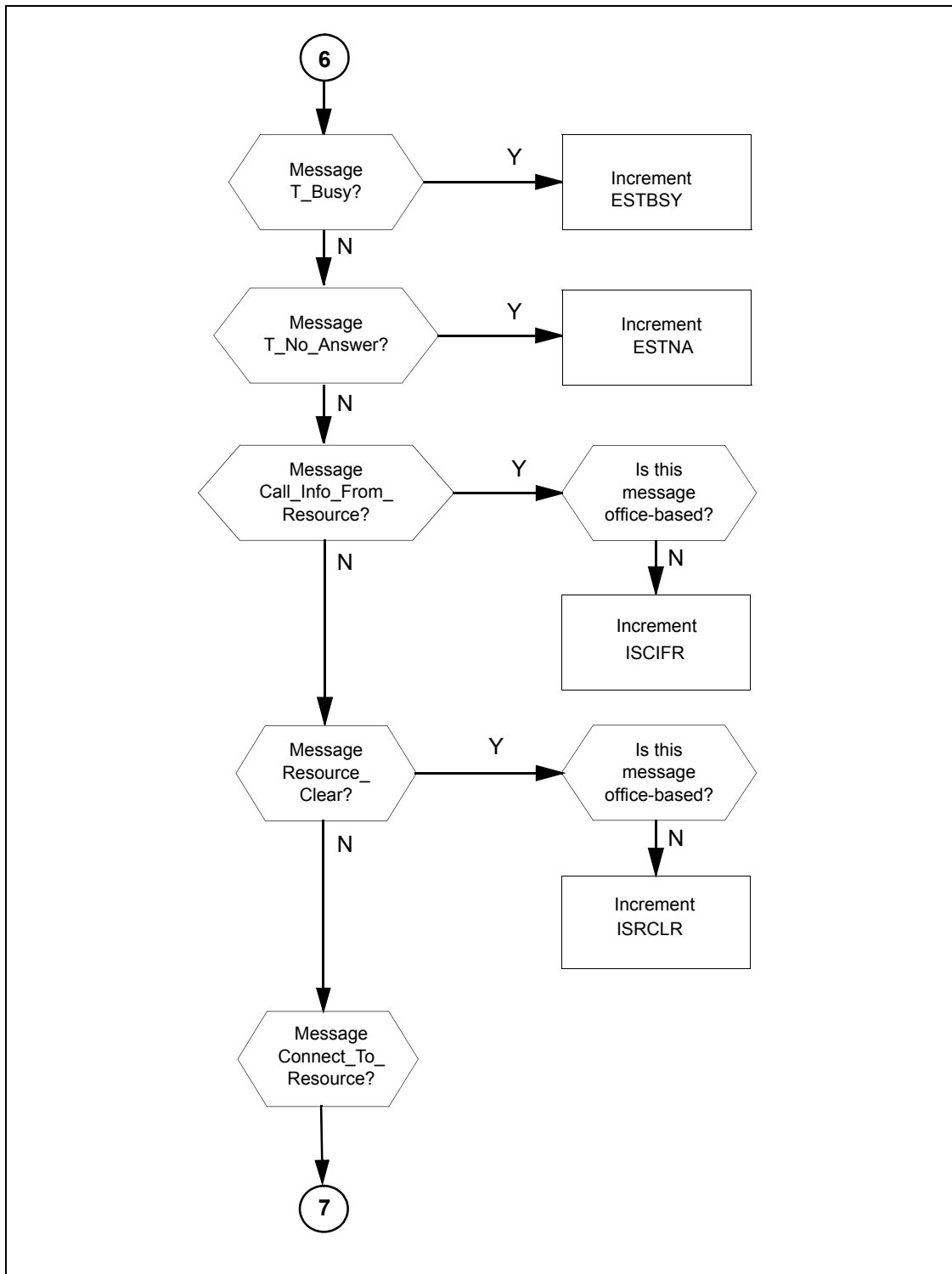
OM group AINOGSUB registers (continued)



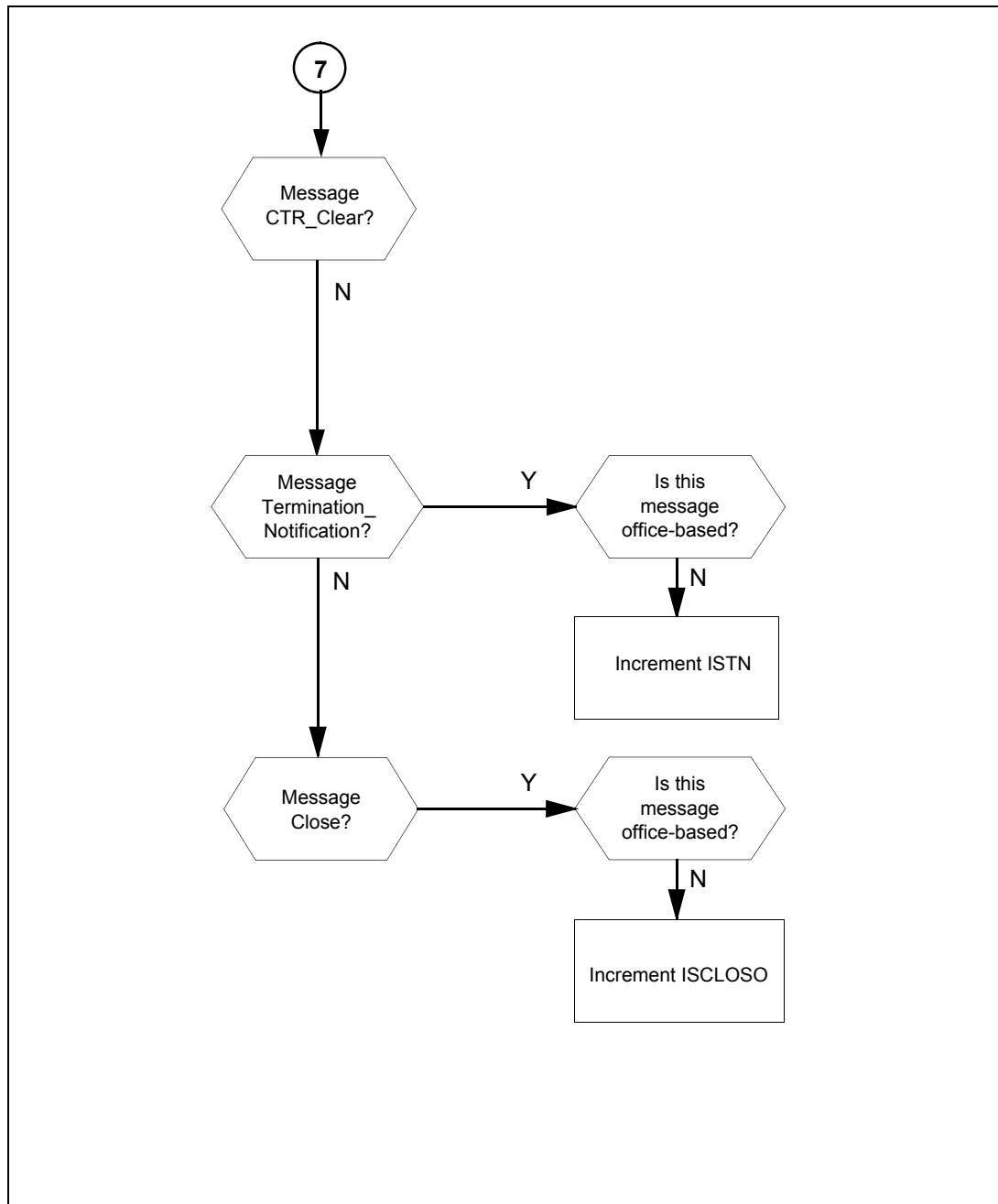
OM group AINOGSUB registers (continued)



OM group AINOGSUB registers (continued)



OM group AINOGOFF registers (end) (continued)



18.5 Register TSOAOHI

TS Origination_Attempt at the Off-Hook_Immediate (TSOAOHI)

The TSOAOHI register counts Origination_Attempt messages that the SSP sends to the SCP, as a result of an Off-Hook_Immediate trigger at the Origination_Attempt trigger detection point (TDP).

18.5.1 Register TSOAOHI release history

The NA008 product release introduced the TSOAOHI register.

18.5.2 Related registers

There are no related registers.

18.5.3 Related logs

There are no related logs.

18.5.4 Extension registers

There are no extension registers.

18.6 Register TSICOHD

TS Info_Collected message for the Off-Hook_Delay (TSICOHD)

The TSICOHD register counts Info_Collected messages that the SSP sends to the SCP, as a result of an Off-Hook_Delay trigger.

18.6.1 Register TSICOHD release history

The NA008 product release introduced the TSICOHD register.

18.6.2 Related registers

There are no related registers.

18.6.3 Related logs

There are no related logs.

18.6.4 Extension registers

There are no extension registers.

18.7 Register TSICSIT

TS Info_Collected message for the Shared_Interoffice_Trunk (TSICSIT)

The TSICSIT register counts Info_Collected messages that the SSP sends to the SCP, as a result of an encounter with trigger Shared_Interoffice_Trunk at the Info_Collected TDP.

18.7.1 Register TSICSIT release history

The NA008 product release introduced the TSICSIT register.

18.7.2 Related registers

There are no related registers.

18.7.3 Related logs

There are no related logs.

18.7.4 Extension registers

There are no extension registers.

18.8 Register TSIAPFC

TS Info_Analyze message for the Public_Feature_Code (TSIAPFC)

The TSIAPFC register counts Info_Analyzed messages that the SSP sends to the SCP, as a result of a Public_Feature_Code trigger at the Info_Analyzed TDP.

18.8.1 Register TSIAPFC release history

The NA008 product release introduced the TSIAPFC register.

18.8.2 Related registers

There are no related registers.

18.8.3 Related logs

There are no related logs.

18.8.4 Extension registers

There are no extension registers.

18.9 Register TSIASFC

TS Info_Analyze message for the Specific_Feature_Code (TSIASFC)

The TSIASFC register counts Info_Analyzed messages that the SSP sends to the SCP, as a result of a Specific_Feature_Code trigger at the Info_Analyzed TDP.

18.9.1 Register TSIASFC release history

The NA008 product release introduced the TSIASFC register.

18.9.2 Related registers

There are no related registers.

18.9.3 Related logs

There are no related logs.

18.9.4 Extension registers

There are no extension registers.

18.10 Register TSIACDP

TS Info_Analyze message for the Customized_Dialing_Plan (TSIACDP)

The TSIACDP register counts Info_Analyzed messages that the SSP sends to the SCP, as a result of a Customized_Dialing_Plan trigger at the Info_Analyzed TDP.

18.10.1 Register TSIACDP release history

The NA008 product release introduced the TSIACDP register.

18.10.2 Related registers

There are no related registers.

18.10.3 Related logs

There are no related logs.

18.10.4 Extension registers

There are no extension registers.

18.11 Register TSNBAFR

TS Network_Busy message for the AFR (TSNBAFR)

The TSNBAFR register counts Network_Busy messages that the SSP sends to the SCP, as a result of an automatic flexible routing (AFR) trigger at the Network_Busy TDP.

18.11.1 Register TSNBAFR release history

The NA008 product release introduced the TSNBAFR register.

18.11.2 Related registers

There are no related registers.

18.11.3 Related logs

There are no related logs.

18.11.4 Extension registers

There are no extension registers.

18.12 Register ESNB

ES Network_Busy (ESNB)

The ESNB register counts Network_Busy messages that the SSP sends to the SCP, as a result of a Network_Busy event request.

18.12.1 Register ESNB release history

The NA008 product release introduced the ESNB register.

18.12.2 Related registers

The EONB register counts the number of Network_Busy messages that 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.

18.12.3 Related logs

There are no related logs.

18.12.4 Extension registers

There are no extension registers.

18.13 Register TSOCBCB

TS O_Called_Party_Busy for the O_Called_Party_Busy (TSOCBCB)

The TSOCBCB register counts O_Called_Party_Busy messages that the SSP sends to the SCP, as a result of an O_Called_Party_Busy trigger. When OTS Screening is active the system does not peg this register.

18.13.1 Register TSOCBCB release history

The NA008 product release introduced the TSOCBCB register.

18.13.2 Related registers

There are no related registers.

18.13.3 Related logs

There are no related logs.

18.13.4 Extension registers

There are no extension registers.

18.14 Register ESOCB

ES O_Called_Party_Busy message for the O_Called_Party_Busy (ESOCB)

The ESOCB register 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.

18.14.1 Register ESOCB release history

The NA008 product release introduced the ESOCB register.

18.14.2 Related registers

The EEOCB register 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 EEOCB + AINOGSUB registers ESOCB + TSOCBCB = total O_Called_Party_Busy messages.

18.14.3 Related logs

There are no related logs.

18.14.4 Extension registers

There are no extension registers.

18.15 Register TSONANA

TS O_No_Answer message for the O_No_Answer (TSONANA)

The TSONANA register counts the number of O_No_Answer messages sent from the SSP to the SCP as a result of an O_No_Answer trigger. When OTS Screening is active the system does not peg this register.

18.15.1 Register TSONANA release history

The NA008 product release introduced the TSONANA register.

18.15.2 Related registers

There are no related registers.

18.15.3 Related logs

There are no related logs.

18.15.4 Extension registers

There are no extension registers.

18.16 Register ESODCING

Register ESODCING counts the number of O_Disconnect_Calling Requested Event messages sent from the SSP to the SCP as a result of an O_Disconnect_Calling EDP-R being armed by a non-office subscribed trigger.

18.16.1 Register ESODCING release history

Product release NA017 introduces register ESODCING.

18.16.2 Associated registers

Register EOODCING counts the number of O_Disconnect_Calling Requested Event messages sent from the SSP to the SCP as a result of an O_Disconnect Calling EDP-R being armed by a non-office subscribed trigger.

18.16.3 Associated logs

There are no associated logs.

18.16.4 Extension registers

None.

18.17 Register ESODCLED

Register ESODCLED counts the number of O_Disconnect_Called Requested Event messages sent from the SSP to the SCP as a result of an O_Disconnect_Called EDP-R being armed by a non-office subscribed trigger.

18.17.1 Register ESODCLED release history

Product release NA017 introduces register ESODCLED.

18.17.2 Associated registers

Register EOODCLED counts the number of O_Disconnect_Called Requested Event messages sent from the SSP to the SCP as a result of an O_Disconnect_Called EDP-R being armed by a non-office subscribed trigger.

18.17.3 Associated logs

There are no associated logs.

18.17.4 Extension registers

None.

18.18 Register ESOMTOUT

Event Subscribed O_Mid_call TimeOut (ESOMTOUT)

Register ESOMTOUT counts the number of Timeout Requested Event messages sent from the SSP to the SCP as a result of an O_Mid_Call Timeout EDP-R being armed by a non-office subscribed trigger.

18.18.1 Register ESOMTOUT release history

Product release NA017 introduces register ESOMTOUT.

18.18.2 Related registers

Register ESTMTOUT counts the number of Timeout Requested Event messages sent from the SSP to the SCP as a result of a T_Mid_Call Timeout EDP-R being armed by a non-office subscribed trigger.

18.18.3 Related logs

There are no related logs.

18.18.4 Extension registers

There are no extension registers.

18.19 Register ESONA

ES O_No_Answer (ESONA)

The ESONA register counts O_No_Answer messages that the SSP sends to the SCP, as a result of an O_No_Answer event request.

AINOGOFF register EOONA + AINOGSUB registers ESONA + TSONANA
= total O_No_Answer messages

18.19.1 Register ESONA release history

The NA008 product release introduced the ESONA register.

18.19.2 Related registers

The EOONA register counts O_No_Answer messages that the SSP sends to the SCP, as a result of an O_No_Answer event request.

AINOGOFF register EOONA + AINOGSUB registers ESONA + TSONANA
= total O_No_Answer messages.

18.19.3 Related logs

There are no related logs.

18.19.4 Extension registers

There are no extension registers.

18.20 Register ESOANS

ES O_Answer (ESOANS)

The ESOANS register counts O_Answer messages the SSP sends to the SCP, as a result of an O_Answer event request.

AINOGOFF register EOOANS + AINOGSUB register ESOANS = total
O_Answer messages

18.20.1 Register ESOANS release history

The NA008 product release introduced the ESOANS register.

18.20.2 Related registers

The EOOANS register counts O_Answer messages the SSP sends to the SCP, as the result of an O_Answer event request.

AINOGOFF register EOOANS + AINOGSUB register ESOANS = total O_Answer messages.

18.20.3 Related logs

There are no related logs.

18.20.4 Extension registers

There are no extension registers.

18.21 Register TSTATTA

TS Termination_Attempt for the Termination_Attempt (TSTATTA)

The TSTATTA register counts Termination_Attempt messages that the SSP sends to the SCP, as a result of a Termination_Attempt trigger.

18.21.1 Register TSTATTA release history

The NA008 product release introduced the TSTATTA register.

18.21.2 Related registers

There are no related registers.

18.21.3 Related logs

There are no related logs.

18.21.4 Extension registers

There are no extension registers.

18.22 Register ESTBSY

ES T_Busy (ESTBSY)

The ESTBSY register counts T_Busy messages that the SSP sends to the SCP, as a result of a T_Busy event request.

18.22.1 Register ESTBSY release history

The NA008 product release introduced the ESTBSY register.

18.22.2 Related registers

The TSTBSY register counts T_Busy messages sent from the SSP to the SCP. T_Busy messages indicate a line-subscribed trigger encounter with trigger T_Busy.

AINOGSUB registers $TSTBSY + ESTBSY$ = total number of T_Busy messages.

18.22.3 Related logs

There are no related logs.

18.22.4 Extension registers

There are no extension registers.

Register ESTNA

ES T_No_Answer (ESTNA)

The ESTNA register counts T_No_Answer messages that the SSP sends to the SCP, as a result of a T_No_Answer event request.

Register ESTNA release history

The NA008 product release introduced the ESTNA register.

Related registers

The TSTNA register counts T_No_Answer messages sent from the SSP to the SCP. T_No_Answer messages indicate a line-subscribed trigger encounter with the T_No_Answer trigger.

AINOGSUB registers $TSTNA + ESTNA$ = total number of T_No_Answer messages.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

Register ISCIFR

IS Call_Info_From_Resource (ISCIFR)

The ISCIFR register counts Call_Info_From_Resource messages that the SSP sends to the SCP, in a transaction that a subscribed message initiates.

Register ISCIFR release history

The NA008 product release introduced the ISCIFR register.

Related registers

The IOCIFR register counts Call_Info_From_Resource messages that the SSP sends to the SCP, in a transaction that an office-based message initiates.

AINOGOFF register IOCIFR + AINOGSUB register ISCIFR = total Call_Info_From_Resource messages.

The IOCITR register counts Call_Info_To_Resource messages the SSP receives from the SCP, in a transaction that an office-based message initiates.

The ISCITR register counts Call_Info_To_Resource messages received by the SSP from the SCP, in a transaction that a subscribed message initiates.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

18.23 Register ISRCLR

IS Resource_Clear (ISRCLR)

The ISRCLR register counts Resource_Clear messages that the SSP sends to the SCP, in a transaction that a subscribed message initiates.

18.23.1 Register ISRCLR release history

The NA008 product release introduced the ISRCLR register.

18.23.2 Related registers

The IORCLR register counts Resource_Clear messages that the SSP sends to the SCP, in a transaction that an office-based message initiates.

AINOGOFF register IORCLR + AINOGSUB register ISRCLR = total Resource_Clear messages.

The IOSTR register counts Send_to_Resource messages that the SSP receives from the SCP, in a transaction that an office-based message initiates.

The ISSTR register counts Send_To_Resource messages received by the SSP from the SCP, in a transaction that a subscribed message initiates.

The IOCRES register counts Cancel_Resource_Event messages that the SSP receives from the SCP, in a transaction that an office-based message initiates.

The ISCRE register counts Cancel_Resource_Event messages received by the SSP from the SCP, in a transaction that a subscribed message initiates.

18.23.3 Related logs

There are no related logs.

18.23.4 Extension registers

There are no extension registers.

18.24 Register ISCLOSO

IS Close (ISCLOSO)

The ISCLOSO register counts Close messages that the SSP sends to the SCP, in a transaction that a subscribed message initiates.

18.24.1 Register ISCLOSO release history

The NA008 product release introduced the ISCLOSO register.

18.24.2 Related registers

The IOCLOSO register counts Close messages that the SSP sends to the SCP, in a transaction that a office-based message initiates.

AINOGSUB register ISCLOSO + AINICOFF register IOCLOSI +
AINICSUB register ISCLOSI + AINOGOFF register IOCLOSO = total
closed messages.

18.24.3 Related logs

There are no related logs.

18.24.4 Extension registers

There are no extension registers.

18.25 Register ISTN

IS Termination_Notification (ISTN)

The ISTN register counts Termination_Notification messages that the SSP sends to the SCP, in a transaction that a subscribed message initiates.

18.25.1 Register ISTN release history

The NA008 product release introduced the ISTN register.

Related registers

The IOTN register counts Termination_Notification messages that the SSP sends to the SCP, in a transaction that an office-based message initiates.

AINOGOFF register IOTN + AINOGSUB register ISTN = total
Termination_Notification messages.

The IOSN register counts Send_Notification messages that the SSP receives from the SCP, in a transaction that an office-based message initiates.

The ISSN register counts Send_Notification messages received by the SSP from the SCP, in a transaction that a subscribed message initiates.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

18.26 Register TSTBSY

TDP subscribed T_Busy (TSTBSY)

The TSTBSY register counts each occurrence of a T_Busy trigger detection point-request (TDP-R).

Register TSTBSY release history

The NA010 product release introduced the TSTBSY register.

Related registers

There are no related registers.

Related logs

There are no related logs.

Extension registers

There are no extension registers.

18.27 Register TSTNA

TDP subscribed T_No_Answer (TSTNA)

The TSTNA register counts each occurrence of a T_No_Answer trigger detection point-request (TDP-R).

18.27.1 Register TSTNA release history

The NA010 product release introduced the TSTNA register.

18.27.2 Related registers

There are no related registers.

18.27.3 Related logs

There are no related logs.

18.27.4 Extension registers

There are no extension registers.

18.28 Register ESTANS

EDP subscribed T_Answer (ESTANS)

The ESTANS register counts the number of times that the T_Answer event detection point-notification (EDP-N) occurs.

18.28.1 Register ESTANS release history

The NA010 product release introduced the ESTANS register.

18.28.2 Related registers

There are no related registers.

18.28.3 Related logs

There are no related logs.

18.28.4 Extension registers

There are no extension registers.

18.29 Register TSICPRIB

TDP subscribed Info_Collected Channel_Setup_PRI trigger (TSICPRIB)

The TSICPRIB register counts the number of times that the Channel_Setup_PRI trigger occurs.

18.29.1 Register TSICPRIB release history

The NA010 product release introduced the TSICPRIB register.

18.29.2 Related registers

There are no related registers.

18.29.3 Related logs

There are no related logs.

18.29.4 Extension registers

There are no extension registers.

18.30 Register TSIA1PLS

TDP subscribed Info_Analyzed One_Plus_Prefix trigger (TSIA1PLS)

The TSIA1PLS register counts the number of times that the One_Plus_Prefix trigger occurs.

18.30.1 Register TSIA1PLS release history

The NA011 product release introduced the TSIA1PLS register.

18.30.2 Related registers

There are no related registers.

18.30.3 Related logs

There are no related logs.

18.30.4 Extension registers

There are no extension registers.

18.31 Register TSIASPCR

TDP subscribed Info_Analyzed Specified_Carrier trigger (TSIASPCR)

The TSIASPCR register counts the number of times that the Specified_Carrier trigger occurs.

18.31.1 Register TSIASPCR release history

The NA011 product release introduced the TSIASPCR register.

18.31.2 Related registers

There are no related registers.

18.31.3 Related logs

There are no related logs.

18.31.4 Extension registers

There are no extension registers.

18.32 Register TSIAINT

TDP subscribed Info_Analyzed International trigger (TSIAINT)

The TSIAINT register counts the number of times that the International trigger occurs.

18.32.1 Register TSIAINT release history

The NA011 product release introduced the TSIAINT register.

18.32.2 Related registers

There are no related registers.

18.32.3 Related logs

There are no related logs.

18.32.4 Extension registers

There are no extension registers.

18.33 Register TSIAOPSV

TDP subscribed Info_Analyzed Operator_Services trigger (TSIAOPSV)

The TSIAOPSV register counts the number of times that the Operator_Services trigger occurs.

18.33.1 Register TSIAOPSV release history

The NA011 product release introduced the TSIAOPSV register.

18.33.2 Related registers

There are no related registers.

18.33.3 Related logs

There are no related logs.

18.33.4 Extension registers

There are no extension registers.

18.34 Release history

18.34.1 NA017

New Operational Measurement registers (ESOMTOUT, ESODCLED, and ESODCING) are defined with this activity to count the number of Timeout Requested Event and O_Disconnect Called Requested Event messages sent from the SSP to SCP(59037100), originally (59028609 and 59028631).

18.34.2 NA008

OM group AINOGSUB was introduced.

19 OM group AINOGSB2

19.1 OM description

OM group advanced intelligent networks outgoing subscription-based Two (AINOGSB2), counts AIN Service Enablers subscription-based messages sent by the SSP to the SCP. OM group AINOGSB2 monitors outgoing traffic to the SCP.

The SSP sends messages in response to 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 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 errors are detected in the TCAP package or its components.

The following errors can be detected in a TCAP package or its components:

- fatal protocol errors
- errors resulting from a bad group of messages, packages or component types
- invalid response messages
- bad correlation identifiers
- duplicate messages

OM group AINOGSB2 contains registers that count call-related, outgoing, subscribed, Service Enablers messages. The registers count messages entered as R02 in Tables TRIGDIG, TRIGITM, or TRIGINFO.

19.2 Registers

The following figure lists OM group AINOGSB2 registers as they appear on the MAP terminal display:

Figure 1 Map terminal display of OM group AINOGSB2 register

ESTMTOUT	ISCCLR	TSTKTRM	ESOTS

19.3 Group structure

OM group AINOGSB2 provides one tuple per office.

Key field:

There is no Key field.

Info field:

There is no Info field.

19.4 Associated OM groups

The following associated OM groups provide AIN Service Enablers message counts:

- OM group AIN outgoing office-based (AINOGOFF) counts AIN Service Enablers office-based messages the SSP sends to the SCP. This OM group monitors outgoing traffic to the SCP.
- 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 traffic to the SCP.
- OM group AIN incoming office-based (AINICOFF) counts AIN Service Enablers office-based messages the SCP sends to the SSP. This OM group monitors incoming traffic to the SSP.
- OM group AIN incoming subscription-based (AINICSUB) counts AIN Service Enablers subscription-based messages the SCP sends to the SSP. This OM group monitors incoming subscription traffic to the SSP.
- OM group AIN non-call-related (AINNCR) counts 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, TRIGITM, 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 ACG control lists.

The following lists related validation formulas for the OM group:

- Total of AINOGB2 group + total of AINOGB2 + total of AINOGOFF group = total outgoing call-related Service Enabler messages
- AINOGOFF registers TOIASDS + TOIAN11 + AINOGB2 registers TSIAPFC + TSIASFC + TSIACDP + TSNBAFR + TSOCBCB + TSONANA + TSOAOHI + TSICOHD + TSICSIT + TSICPRIB + TSIA1PLS + TSIASPCR + TSIAINT + TSIAOPSV = total originating basic call model (BCM) Service Enablers trigger detection point (TDP) messages
- AINOGOFF registers EONB + EOONA + EOOANS + EOOCB + EOODCLED + EOODCING + EOTOUT + AINOGB2 registers ESNB + ESONA + ESOANS + ESOCB + ESTBSY + ESTNA + ESTANS + ESODCLED + ESODCING + ESOMTOUT + AINOGB2 register ESTMTOUT = total Service Enablers event detection point (EDP) messages
- Total of AINOGB2 group + total of AINOGB2 group + total of AINICSUB group + total of AINICOFF group + total of AINOGOFF group = total call-related messages
- Total of AINOGB2 group + total of AINOGB2 group + total of AINOGOFF group + AINNCR registers NAOVFW + NAGCRS + NUPDAT + NMSUCC + NSREP = total outgoing messages
- AINOGOFF register EOTOUT + AINOGB2 register ESOMTOUT + AINOGB2 ESTMTOUT = total Timeout messages

19.5 Associated functional groups

There are no associated functional groups.

19.6 Associated functionality codes

There are no associated functionality codes.

The following figure illustrates the logical flow for OM group AINOGB2 registers.

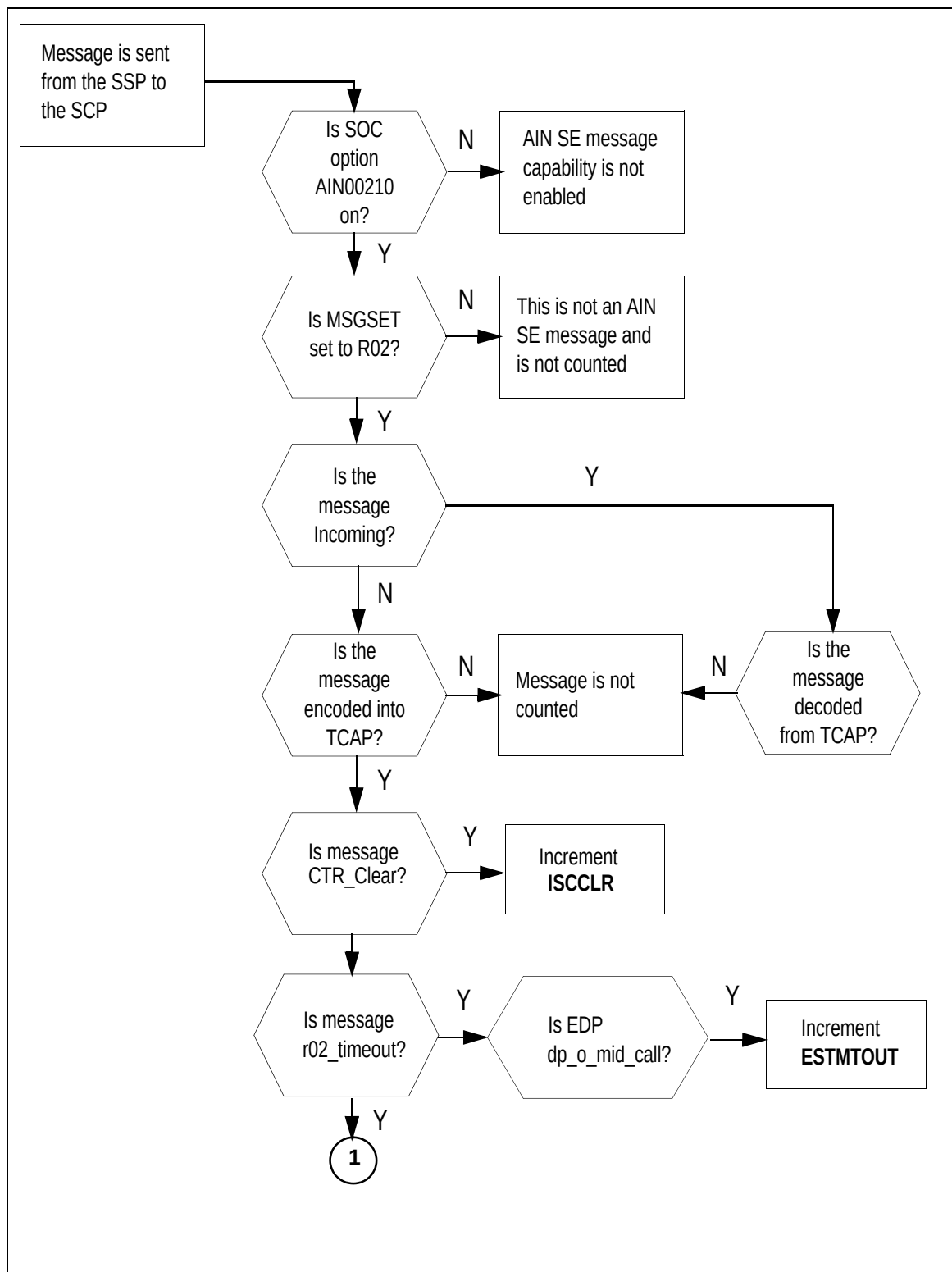
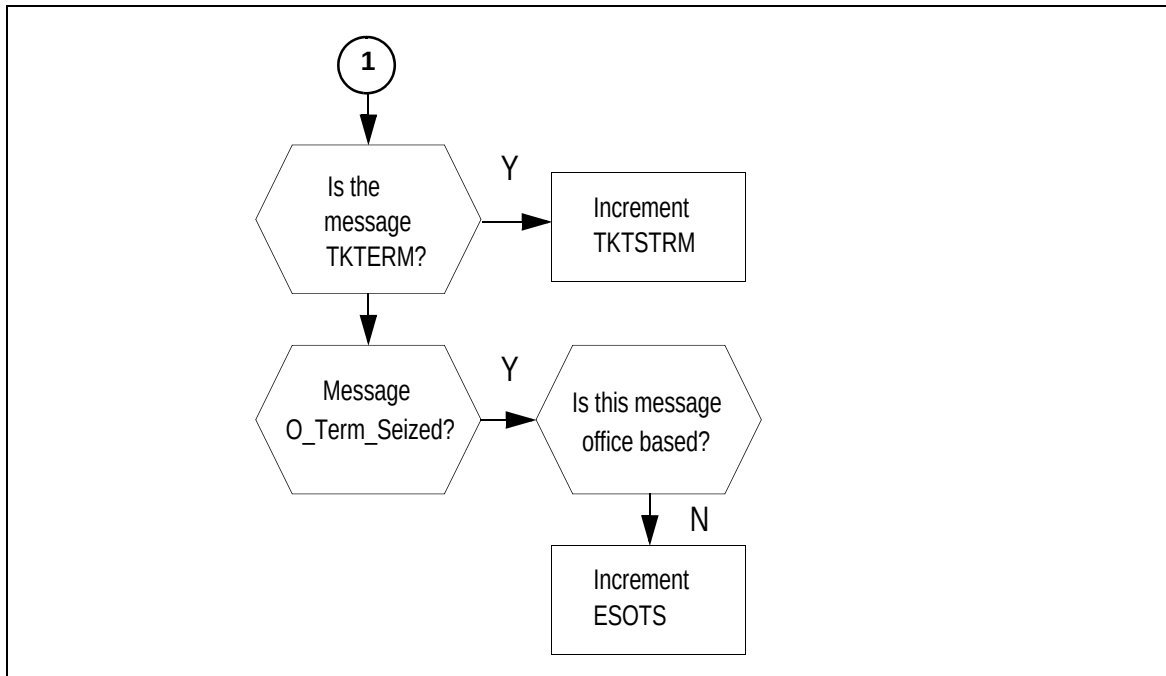
Figure 2 OM group AINOGB2 registers

Figure 3 OM group AINOGB2 registers (continued)



19.7 Register ISCCLR

IS CTR_Clear (ISCCLR)

The ISCCLR register counts CTR_Clear messages that the SSP sends to the SCP in a transaction that a subscribed message initiates. This register is part of advanced intelligent networks outgoing subscription-based (AINOGB2) OM group.

19.7.1 Register ISCCLR release history

The NA017 product release introduced the ISCCLR register.

19.7.2 Associated registers

The IOCCLR register counts CTR_Clear messages sent from the SSP to the SCP, in a transaction an office-based message initiates IO CTR_Clear.

19.7.3 Associated logs

None.

19.7.4 Extension registers

None.

19.8 Register ESTMTOUT

Event subscribed T-Mid_call TimeOUT (ESTMTOUT).

Register ESTMTOUT counts the number of Timeout Requested Events messages sent from the SSP to the SCP as a result of a T_Mid_Call Timeout EDP-R being armed by a non-office subscriber trigger.

19.8.1 Register ESTMTOUT release history

Product release NA17 introduced register ESTMTOUT.

19.8.2 Associated registers

Register ESOMTOUT counts the number of Timeout Requested Event messages sent from the SSP to the SCP as a result of a T_Mid_Call Timeout EDP-R being armed by a non-office subscribed trigger.

19.8.3 Associated logs

None.

19.8.4 Extension registers

None.

19.9 Register ESOTS

Event subscribed O_Term_Seized (ESOTS).

Register ESOTS counts the number O_Term_Seized messages sent from the SSP to the SCP as a result of an O_Term_Seized EDP-N being armed by a non-office subscribed trigger.

19.9.1 Register ESOTS release history

Product release SN06 introduced register ESOTS.

19.9.2 Associated registers

Register EOOTs counts the number of O_Term_Seized messages sent from the SSP to the SCP as a result of an O_Term_Seized EDP-N being armed by an office based trigger.

19.9.3 Associated logs

None.

19.9.4 Extension registers

None.

19.10 Register TSTKTRM

Register TSTKTRM records messages sent from the SSP as a result of TKTERM trigger.

19.10.1 Register TSTKTRM release history

The NA019 product release introduces register TKTERM.

19.10.2 Associated registers

There are no related registers.

19.10.3 Associated logs

There are no related logs.

19.10.4 Extension registers

There are no extension registers.

19.11 Release history**19.11.1 SN07 (DMS)**

The register TSTKTRM was added by CR Q00765666.

19.11.2 SN06 (DMS)

Register ESOTS added. Documentation amended at SN07 (DMS) for CR Q00527425-04.

19.11.3 NA017

Added a new register ESTMTOUT, (59037100, originally 59028609). Also, added a new register ISCCLR, (59037140).

19.11.4 NA016

NA016 introduced OM group AINOGB2.

20 OM group FTROM

20.1 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.

20.2 Registers

The following figure illustrates OM group FTROM registers as they appear on the MAP terminal display.

Figure 121 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

```

20.3 Group structure

OM group FTROM

Key field:

FTR_NAME

Info field:

SMALL, MEDIUM, LARGE, X_LARGE, or CRITICAL

20.4 Associated OM groups

OM group EXT

20.5 Associated functional groups

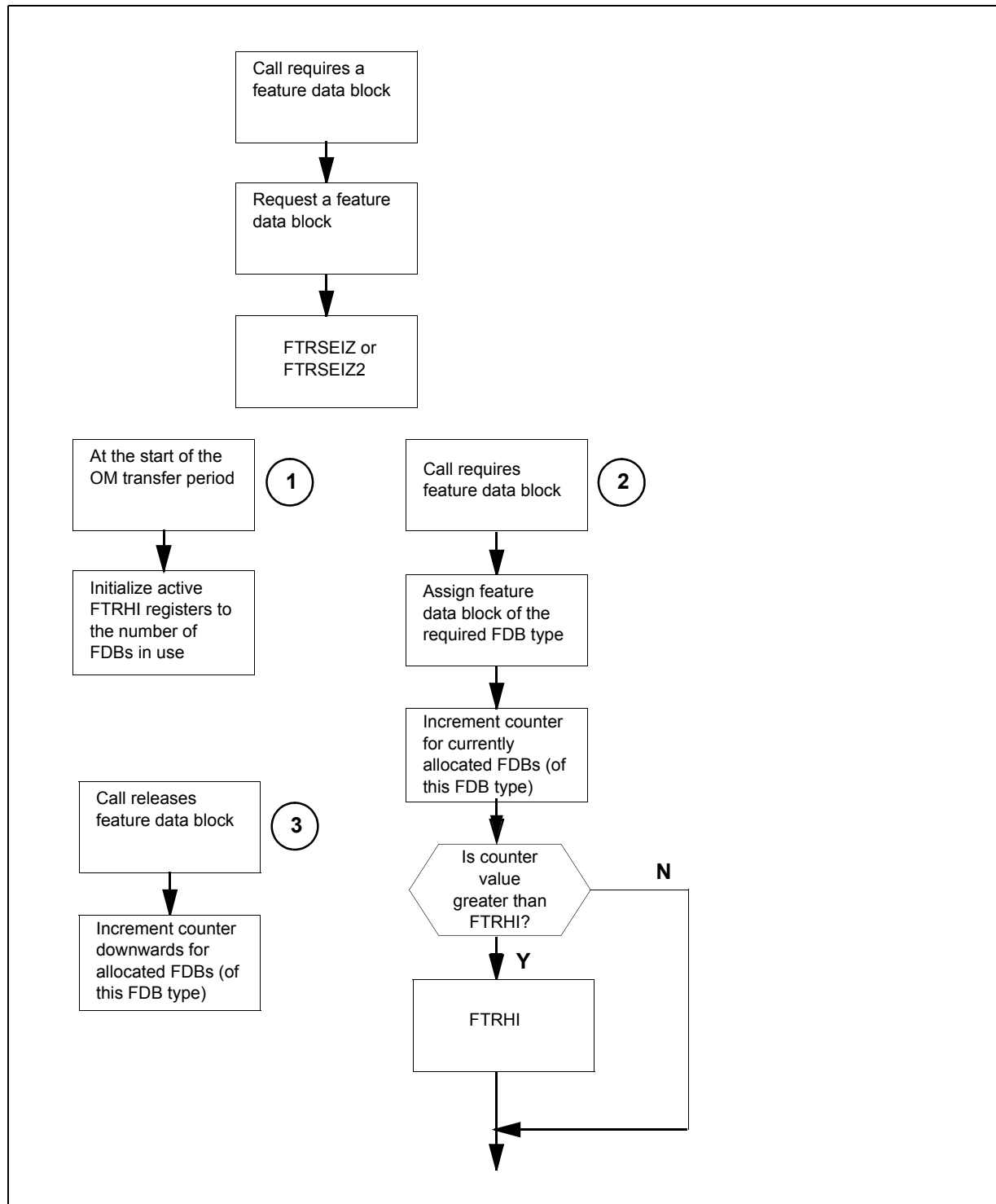
None

20.6 Associated functionality codes

None

The following figure illustrates the logical flow of OM group FTROM registers.

Figure 122 OM group FTROM registers logic flow



20.7 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.

20.7.1 Register FTRHI release history

Register FTRHI was introduced in NA009.

20.7.2 Associated registers

EXTHI

20.7.3 Associated logs

None

20.7.4 Extension registers

None

20.7.5 Validation formula

None

20.8 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.

20.8.1 Register FTRSEIZ release history

Register FTRSEIZ was introduced in NA009.

20.8.2 Associated registers

EXTSEIZ, EXTSEIZ2

20.8.3 Associated logs

None

20.8.4 Extension registers

FTRSEIZ2

20.8.5 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 field LARGE = EXTSEIZ for tuple
LARGE_FEATURE_DATA.

Total of all tuples with info field X_LARGE =EXTSEIZ for tuple
X_LARGE_FEATURE_DATA.

Total of all tuples with info field CRITICAL = EXTSEIZ for tuple
CRITICAL_FEATURE_DATA.

20.9 Release history

OM group FTROM was introduced in NA009.

21 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
- DPT Dynamic Packet Trunk (DPT) trunk group CLLI and CIC

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.

21.1 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 123 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

```

21.2 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.

21.2.1 HELP command

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

21.2.2 STATUS command

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

21.2.3 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.

The NA014 product release enhances the AINTRACE tool to:

- capture query messages for trigger TRA
- display the NatureOfCarrier parameter when the carrier is sent in a query message from a terminal
- display parameter CarrierUsage and parameter NatureOfCarrier (sub parameter of CarrierID) in messages Analyze_Route, Forward_Call and

Create_Call (when these parameters are received in the SCP messages by the terminal)

The NA016 product release enhances the AINTRACE tool to:

- display the Carrier parameters in incoming Send-to-Resource conversation messages
- display the TSTRCTimer parameter in the Send_To_Resource message

The NA017 product release enhances the AINTRACE tool to:

- display the Timeout EDP-R message and the new parameters LegID, BCMType, PointInCall and CcID when sent in a query message from a terminal
- display the TimeoutTimer parameter and the Timeout value for the EDP-R message when received in the SCP messages by the terminal
- display the O_Disconnect Calling and O_Disconnect_Called event messages sent in a query message from a terminal
- display the O_Disconnect Calling and O_Disconnect_Called parameters in the Request_Report_BCM_Event message when received in the SCP messages by the terminal
- display the Connect-to-Resource parameters in the incoming conversation/response message
- support the GenericDigitsList parameter in the Termination Attempt and Info Analyzed query messages
- support the Calling Geodetic Location parameter in the Termination Attempt and Info Analyzed query messages
- support new Timeout timer parameters
- support new messages in response to Timeout EDP-R

21.2.3.1 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

21.2.3.2 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 21.2.3.3.1.

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

21.2.3.3 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

21.2.3.3.1 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

21.2.3.3.2 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

21.2.3.3.3 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

21.2.3.4 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

21.2.3.5 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

21.2.3.6 SELECT command: dynamic packet trunk

Use the following syntax to select a dynamic packet trunk (DPT) for tracing.

>SELECT DPT <cli> <string>

where <cli> is the DPT CLLI for the terminal, and <string> is the string associated with the CLLI

Example:

>SELECT DPT DPTEANTEGR 101

21.2.4 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.

21.2.4.1 REMOVE command: syntax 1

Use the following syntax to clear the selection list.

>REMOVE ALL

21.2.4.2 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

21.2.4.3 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

21.2.4.4 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

21.2.4.5 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

21.2.4.6 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

21.2.4.7 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

21.2.4.8 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).

21.2.4.9 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).

21.2.4.10 REMOVE command: syntax 10

Use the following syntax to remove a DPT from the selection list.

>REMOVE DPT <dpt_clli>

where <dpt_clli> is the DPT CLLI for the terminal

Examples:

**>REMOVE DPT
DPTEANTEGATM**

21.2.5 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.

21.2.6 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.

21.2.7 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

21.2.8 QUIT command

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

21.3 Supported messages and parameters

The AINTRACE tool supports AIN Essentials and AIN Service Enablers messages and parameters. See Table 913 on page 474 and Table 914 on page 477.

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

Table 913 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 913 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 913 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 914 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 914 Parameters supported by AINTRACE

Absolute SCPTime	intervaltime	Local SSPTime
AccessCode	CcID	GapDuration
ACGEncountered	ChargeNumber	GapInterval
AdminstrableObject	ChargePartyStationType	GenericAddress
AlternateBillingIndicator	ClearCause	GenericAddressList
AlternateCarrier	CloseCause	GenericDigitsList
AlternateTrunkGroup	ClearCauseData	GenericName
AMAAAlternateBillingNumber	CollectedAddressInfo	GlobalTitleAddress
AMABusinessCustomerID	CollectedDigits	IPReturnBlock
AMADigitsDialedWC	ConnectTime	Lata
AMALineNumber	ControlCauseIndicator	LegID
AMAMeasure	ControllingLegTreatment	MonitorTime
AMAMeasurement	DestinationAddress	NetworkSpecificFacilities
AMASlpID	DisconnectFlag	NotificationDuration
AnswerIndicator	DisplayText	NotificationIndicator
ApplicationErrorString	DPCConverter	O_Disconnect_Called EDP Request
BCMType	EchoData	O_Disconnect Calling
BearerCapability	EditListType	ONoAnswerTimer
BusyCause	EDPNotification	OriginalCalledPartyID
BusyType	EDPRequest	OutpulseNumber
CalledPartyID	ErrorCause	OverflowBillingIndicator
CalledPartyStationType	ExtendedRinging	PassiveLegTreatment
Calling Geodetic Location	FacilityGID	PointInCall
CallingPartyBGID	FacilityMemberID	Prefix
CallingPartyID	FacilityStatus	PrimaryBillingIndicator
Carrier	FailureCause	PrimaryTrunkGroup

Table 914 Parameters supported by AINTRACE (Continued)

CarrierUsage	ForwardCallIndicator	RedirectingPartyID
RedirectionInformation	StatusCause	TranslationType
ResourceType	StrParameterBlock	TriggerCriteriaFlag
SecondAlternateBillingIndicator	Tcm	TriggerCriteriaType
SecondAlternateCarrier	TerminationIndicator	TSTRCTimer
SecondAlternateTrunkGroup	TimeoutTimer	UserID
Spid	TNoAnswerTimer	VerticalServiceCode
PartyId	PartyonHold	

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

21.3.1 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.” The SOC options are listed in Chapter 11: “Software optionality control” on page 401.
- 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.”

For more information about SOC options, see **Chapter 11: “Software optionality control” on page 401.**

21.4 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 filtered 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.

21.5 AINTRACE example 1

TRAVER 470 on page 479 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 470 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
```

Figure 470 SDS trigger, Continue and Request_Report_BCM, with Close response (Continued)

```
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
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: npaXXXXXX
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
```


Figure 470 SDS trigger, Continue and Request_Report_BCM, with Close response (Continued)

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

21.6 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.
- DPTs are selected only by CLLI. Selection by TID is not supported.
- 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.

22 Translation verification tool for AIN

The translations 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
 - Office-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):
 - Specific_Feature_Code (SFC)
 - Public_Feature_Code (PODPFEAT)
 - Customized_Dialing_Plan (CDPCODE)
 - Specific_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. See Section 11.23 “TRAVER output of SOC options” on page 446 for details and examples.
- 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 specified, 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 (see Section 11.23 “TRAVER output of SOC options” on page 446 for details and examples)

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 22.9 “TRAVER example 1” on page 520.

22.1 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 five 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.

22.2 Restrictions

AIN does not support the TrnslVf (MAPCI) utility.

22.3 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] ...
```

22.4 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 LATAXLA 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.

22.5 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 STDPRT of table STDPRTCT. Each stage of translations must be simulated separately through the TRAVER utility. The first stage of translations, that translate the 0ZZXX(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 471 illustrates the TRAVER output resulting from the first stage of translations.

Figure 471 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 472 on page 488, illustrates the TRAVER output resulting from the second stage of translations.

Figure 472 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 SSNONLY (AINTTEST) $

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 specified 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 first 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” prefix and simply specify the remaining 10-digit dialed number.

Assuming that the appropriate datafill 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.

22.6 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 477 “TRAVER example for PXLAMAP ISDN digit conversion” on page 491.

Parameter definitions for AIN response translations simplification are summarized in Table 915.

Table 915 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 datafill 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 inactive in the office.

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

The following figures provide examples of command lines for AIN response translation simplification.

Figure 473 TRAVER command line for AIN analyze route response example

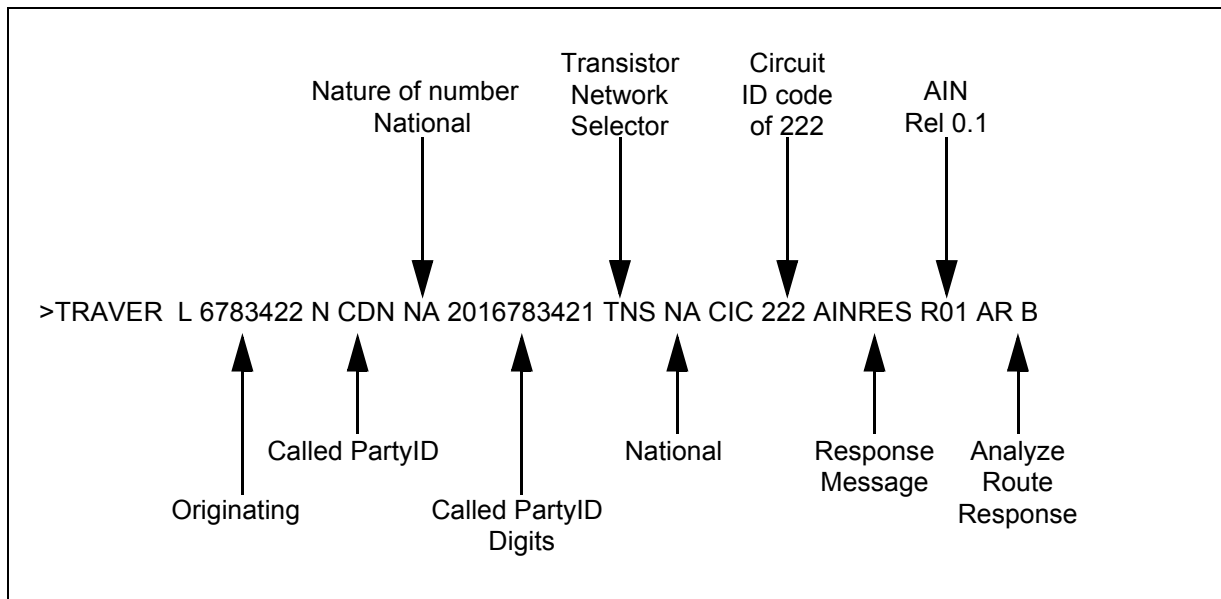


Figure 474 TRAVER command line for AIN continue response example

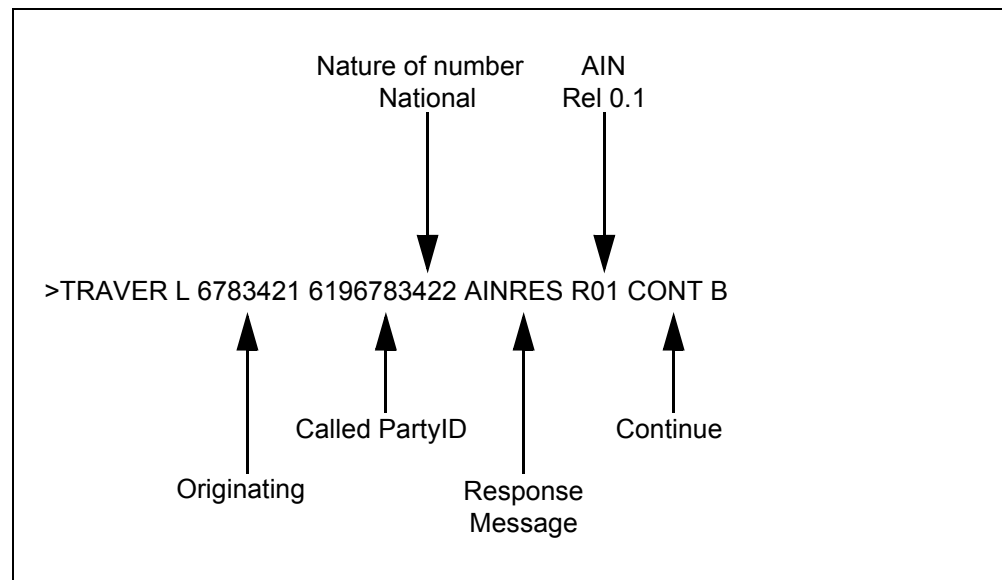
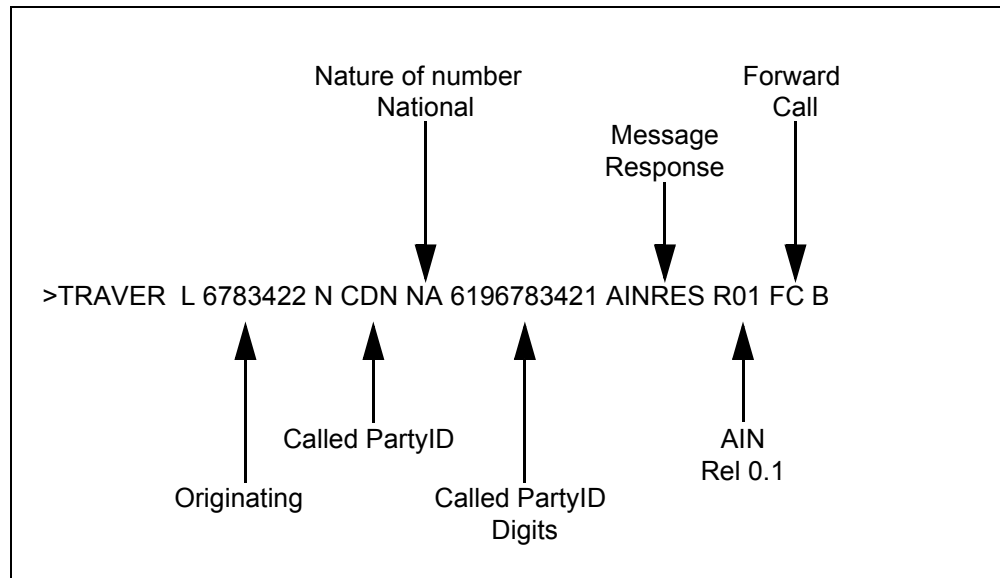
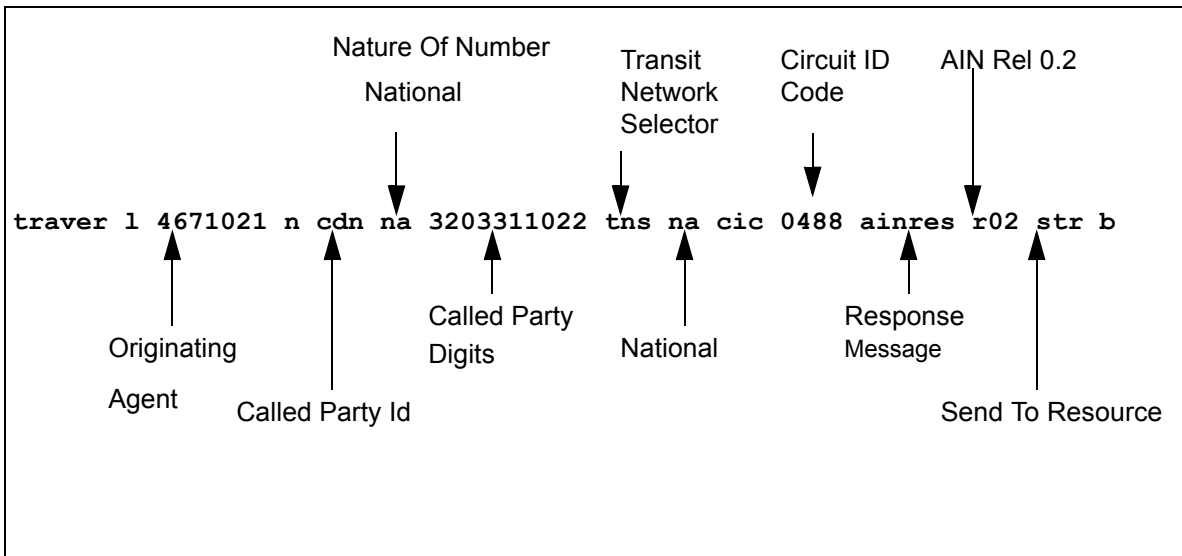


Figure 475 TRAVER command line for AIN forward call response example**Figure 476 TRAVER command line for Send_T0_Resource response example**

The following figure provides sample TRAVER output for PXLAMAP ISDN digit conversion.

Figure 477 TRAVER example for PXLAMAP ISDN digit conversion

```
>traver 1 6136213006 n cdn in 448196211211 ainres r02 ar b
Warning: Routing characteristics are present.
Originator must be able to send in
```

Figure 477 TRAVER example for PXLAMAP ISDN digit conversion (Continued)

```

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
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 $

```

Figure 477 TRAVER example for PXLAMAP ISDN digit conversion (Continued)

```

TABLE PXLAMAP
. CDNPUB P621 ( XLA EAP1) ( PREFIX )$
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 011448196211211
TABLE STDPRCT
EAP1 ( 1) ( 0) 3
. SUBTABLE STDPRCT
WARNING: CHANGES IN TABLE STDPRCT 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 HPCPATN
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
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 +++

```

22.6.1 Parameter DIGCONV

Use parameter DIGCONV during an operating company's datafill 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 datafill.

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

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

Note: When ISDN digit conversion is active in an office, TRAVER does not need parameter DIGCONV to see digit conversion results. This parameter is significant only when ISDN digit conversion 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**

22.6.2 Parameters FGD and CIC3

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
```

22.7 Option AINCHG

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

See Section 22.18 "TRAVER example with AINCHG option" on page 561.

22.8 Option AINMQG

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. See Section 22.19 "TRAVER examples with AINMQG option" on page 563.

Figure 478 provides a sample TRAVER output resulting from the AINMQG option.

Figure 478 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 479 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 479 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 916 on page 497 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 916 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(*)	-	-	-

Table 916 TRAYER / 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
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	-	-	X
GenericName	-	-	-	-	X
LATA	AINMQG(*)	AINMQG(*)	AINMQG(*)	AINMQG(*)	AINMQG(*)
NetworkSpecificFacility	AINMQG	-	-	-	-
NotificationIndicator	-	-	X	X	-
OriginalCalledPartyID	X	X	X	-	X
Prefix	AINMQG	AINMQG	AINMQG	-	-

Table 916 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
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	-	-	-
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					

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 917 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 917 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 • 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, datafill, 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.

Many of the parameter building details are similar to those described in the individual parameter sections beginning Section 6.4.4.19 on page 218. The following sections address differences between CallP and TRAVER simulation using the AINMQG option.

22.8.1 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 datafilled in IBNXLA and must be matched in this table for the parameter to be populated.

The AccessCode parameter uses the AINDigits format and its fields 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 five digits

22.8.2 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 918 shows the mapping between TRAVER BearerCapability values and those populated in parameter BearerCapability.

Table 918 Mapping of TRAVER BC option to AIN BearerCapability values

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

Table 918 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)
Note 1: Not supported by AIN Service Enablers	
Note 2: Not supported due to GR restriction	
Note 3: Not supported by DMS-100 switches	

22.8.3 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 datafill 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 480 on page 504 provides a sample TRAVER output using MBG and AINMQG options.

Figure 480 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 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 480:

- 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 fixed line privileges or customer-defined line privileges. GR-1299-CORE indicates that only the fixed 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 fixed 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.

22.8.4 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 919 specifies the values that can populate the CalledPartyID fields.

Table 919 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 920 specifies the values that can populate the CalledPartyID fields:

Table 920 CalledPartyID field values for private calls

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

22.8.5 CallingPartyID

Table 921 contains the rules TRAVER uses to populate the fields of the CallingPartyID parameter.

Table 921 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	
Note 1: For PRI trunks the mapping in document TR444 is used and for ISUP trunks there is a 1:1 mapping.		
Note 2: This information is found in either DNATTRS or the LENFEAT, IBNFEAT or KSETFEAT tables.		

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

22.8.6 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 Carrier ID 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 office 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 pre-subscription status
- when the trigger is Shared_Interoffice, 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)

22.8.7 CarrierID

Parameter CarrierID of the AINMQG output includes field NatureOfCarrier. For example:

1. DN A is an SDS number.
2. An SDS Query is sent and Analyze_Route response received containing CarrierUsage and Carrier parameters, as well as a CalledPartyID (containing DN C).
3. Let DN C also be an SDS number.

When the SDS query from DN C is sent (serial triggering), the NatureOfCarrier parameter is populated with ‘NoNOCProvided’. The file generated by AINMQG contains parameter NatureOfCarrier. See the examples that follow.

Figure 481 TRAVER with AINMQG Option

```
>traver tr isupicitt 3203311022 AINMQG nt

AIN Term Attempt TDP: trigger criteria met.
Querying the database would occur now.
Building AINMQG Query Message option to save the query to a file for
use in TstQuery.
Please enter storage location:<File Device> <File Name>
>sfdev pop
AINMQG Query message saved in file.
Use the AINRES option for further information
```

Figure 482 TRAVER File resulting from AINMQG option

```
SetAppl R02
SetMsg Info_Analyzed
BearerCapability speech
CalledPartyID 3 1 6136671022
CallingPartID 3 1 6136671000
Carrier 1 0 0488 =====> Carrier Selection, NatureOfCarrier, CIC
ChargeNumber 3 1 6136671022
Lata 0 0 111
TriggerCriteriaType npa
UserID DN 6136671000
```

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

22.8.9 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 (FANI) 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 datafill on the switch, ChargePartyStationType can be derived from the STATCLASS datafill. 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 datafill 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 datafill on the switch for the trunk.

For trunk originators TRAVER/AINMQG prompts the user for the ChargePartyStationType value when the trunk is datafilled 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 datafill 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 922. 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 922 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
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

22.8.10 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 923 contains parameter selection criteria. The presence of the VSC or AccessCode is dependent upon whether triggers Customized_Dialing_Plan or

Specific_Feature_Code is applicable to the call. When neither of these triggers is subscribed, then parameter CollectedAddressInfo is built.

Table 923 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
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 field for a local call is populated with just the digits dialed (that is, seven digits, NPA not prefixed).
- For CDPCODE triggering at extension numbers, the RPRTDIGS field 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 fields are not relevant and are not coded.

22.8.11 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 923 “Determination for sending CollectedDigits or CollectedAddress Info” on page 514 indicates the parameter that is built into the message, depending on the matching trigger and the datafill in tables IBNXLA or XLANAME.

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 fields are neither relevant nor coded.

22.8.12 LATA

Parameter LATA is sent by the SSP to the SCP or adjunct. The appropriate equal access tables must be datafilled (for example, 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 fields populated as follows:

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

Note: The digits are in table LATANAME.

22.8.13 NetworkSpecificFacilities

Parameter NetworkSpecificFacilities 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 Specific 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 483 on page 516.

Figure 483 TRAYER 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-OUTPULSE 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 TRAYER is invoked with the AINMQG option, the NSF option, and a PRI originator for a call that triggers at the Info_Analyzed TDP, the TRAYER/AINMQG composes a NetworkSpecificFacilities value using the following rules for its fields:

- network identification is a 3 or 4 decimal, digit carrier identification code that is interactively prompted for
- facility coding value is derived from the NSF option on the command line, see Table 924 “Supported Facility coding values” for NSF options.
- The Service Parameter field is derived 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 924 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}]]]

22.8.14 Prefix

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

22.8.15 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 office subscription data.

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

Table 925 TriggerCriteriaType parameter values

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

Table 925 TriggerCriteriaType parameter values (Continued)

Trigger Encountered	TriggerCriteriaType Value
Specific_Feature_Code	specificFeatureCode
Public_Feature_Code	verticalServiceCode
Office_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	

22.8.16 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.

22.8.17 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.

22.9 TRAVER example 1

Table 926 illustrates a sample TRAVER output.

Table 926 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 TSPTS 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 926 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 (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 +++

```

22.10 TRAVER example 2

Figure 484 shows output when AIN Service Enablers is IDLE, AIN Call Management is ON, for a datafilled R02 SDS trigger.

Figure 484 TRAVER example: datafilled R02 SDS trigger

```
>traver 1 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 +++

>
```

22.11 TRAVER example 3

Figure 485 on page 523 shows the displayed output when AIN Service Enablers is IDLE, AIN Call Management is ON, for a datafilled 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 specific match.

Figure 485 TRAVER example: datafilled R0.2 SDS and R0.1 triggers

```

>traver 1 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 (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 +++
>

```

22.12 TRAVER example 4

Figure 486 on page 524 shows the displayed output when AIN Service Enablers is ON, AIN Call Management is ON, for a datafilled R0.2 SDS trigger.

Figure 486 TRAVER example: AIN Service Enablers is ON, datafilled R0.2 SDS trigger

```

>traver 1 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 (AINTST) $
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 +++

>

```

22.13 Option AINRES

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 22.20.7 “TERMATT” on page 571.

22.13.1 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 verification 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 22.21 “TRAVER example of routing to an IP” on page 573.

22.13.2 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 first 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 first 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 first 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.

22.13.2.1 Example 1: Collect_Information with ACB

From an IBN line (6213811), CollectedDigits has a single dialing plan element, ACB feature code (*66). See TRAVER 487 on page 528

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

22.13.2.2 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 488 on page 529 and TRAVER 488 on page 529.

TRAVER 489 on page 530 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 489 on page 530 where a separate TRAVER invocation is used to see the call route to the second dialing plan element.

22.13.2.3 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 490 on page 532.

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 datafilled to make the call route over ISUPIBNOG (a bearer capability of 56KData is specified).

22.13.2.4 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 491 on page 535

22.13.2.5 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 492 on page 536.

Figure 487 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
CUSTTRIGGRP_CDP INFOANAL
. CDP CODE ( DG CDP DIG ) $ NIL
Trigger AIN CDP CODE is applicable to customer group.
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
```


Figure 487 Sample TRAVER output for an ACB feature code (Continued)

```

. 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 +++

```

TRAVER 488 provides a sample TRAVER output for a Collect_Info CNDB+DN.

Figure 488 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
TABLE DIGCOL
RES specified: RES digit collection
NCOS FEAT XLA name is NIL. Go to next XLA name.
TABLE IBNXLA: XLANAME RXCFNXXX

```

Figure 488 Sample TRAVER output for a Collect_Info CNDB+DN (Continued)

```

RXCFNXXX 67 FEAT N N CNDB
AIN Info Collected TDP: no subscribed trigger.
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 +++

Feature CNDB          not supported by TRAVER

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

Figure 489 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 TSPTS 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 489 Sample TRAVER output for a routing number (Continued)

```

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
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNPA results are used.

```

Figure 489 Sample TRAVER output for a routing number (Continued)

```

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 490 Sample TRAVER output of a Collect_Info response for an ISDN Originator

```

>traver 1 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
. 56KDATA ( BC 56KDATA $)$
TABLE KSETLINE
ISDN 121 1 DN Y 7225115 COMKODAK 0 0 613 (SFC) $ BRI UNDEF N $
TABLE DNATTRS

```

Figure 490 Sample TRAVER output of a Collect_Info response for an ISDN Originator (Contin-

```

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
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 316) ( 1) ( 84) ( 0) 3 $

```

Figure 490 Sample TRAVER output of a Collect_Info response for an ISDN Originator (Contin-

```

. 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: HNPAC 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

DIGIT TRANSLATION ROUTES

1 ISUPIBNOG                6561234                ST

```

Figure 490 Sample TRAVER output of a Collect_Info response for an ISDN Originator (Contin-

```

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

Figure 491 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 TSPTS 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
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS

```

Figure 491 Sample TRAVER output of trigger Off-Hook_Delay after a Collect_Info Response

```

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
. 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 492 Sample TRAVER output for Collect_Information equal access

```

>traver l 6136218007 n ainres r02 colinf 1048816707227512 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

```


Figure 492 Sample TRAVER output for Collect_Information equal access (Continued)

```

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
TABLE TOFCNAME
613 722 $
TABLE DNINV

```

Figure 492 Sample TRAVER output for Collect_Information equal access (Continued)

```

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 LATAOLA
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 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) ( ESCOA ) ( 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

```

Figure 492 Sample TRAVER output for Collect_Information equal access (Continued)

```

1 ISUPITEAOG          D0776707227512      ST

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

22.14 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 office 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 office 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, C7GTTYPE, and C7GTT are displayed.

Figure 493 on page 540 shows a typical TRAVER output.

Figure 493 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_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
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 494 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 C7GTTYPE
. . 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 +++

```

22.15 TRAVER and SFC and PFC triggers

This section describes TRAVER functionality for the specific feature code (SFC) trigger and the public feature code (PFC) trigger.

22.15.1 TRAVER and the specific feature code trigger

TRAVER supports the subscription, validation, criteria checking, and the verification of the translation and routing for the 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, the system displays a warning message indicating that the SOC option must be active before the trigger can occur.

Figure 495 on page 543 shows the TRAVER output for an SFC triggered call that successfully queries the SCP or adjunct.

Figure 495 TRAVER example: SFC triggered call successfully queries the SCP or adjunct

```

>traver 1 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 +++
>

```

22.15.1.1 TRAVER provisioning example

TRAVER 496 and TRAVER 497 on page 545 provide TRAVER examples, where a user dials vertical service code (VSC) B333. A query is sent to the SCP. TRAVER 496 was generated using the trigger group provisioning

interface and TRAVER 497 was generated using the trigger item provisioning interface.

Figure 496 Sample trigger group TRAVER for trigger SFC

```
>TRAVER L 6136216139 B333 B
TABLE IBNLINES
HOST 02 0 14 15 0 DT STN RES 6216139 263 613_AIN2_263 L613_LATA1_0 613
(CWT)
      (CWI) (AR) $
TABLE LINEATTR
263 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN2_263 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN2_263 FR01 613 AIN2 TOPS Y RESG263 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 02 0 14 15 0 AIN AIN SFCTRIG2
TABLE CUSTSTN
RESG263 AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG263 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG263 NXLA RXCMN263 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 333 FTR 3 AIN IMMED
TABLE TRIGGRP
SFCTRIG2 INFOANAL
. SFC ( DG SFCDIG)$ NIL
Trigger AIN SFC is applicable to individual RES or BRI line.
. . TABLE TRIGDIG
. . SFCDIG SFC B333 SFC EVENT TCAP R02 SS7 AINJAZZ DFLT $
. . . TABLE C7GTTYPE
. . . AINJAZZ ANSI7 3 $
. . . TABLE IBNFEAT
. . . TUPLE NOT FOUND
. . . TABLE C7GTT
. . . AINJAZZ 6136216139 6136216139 SSONLY (AINTTEST) $
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
```


Figure 496 Sample trigger group TRAVER for trigger SFC (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 +++

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

Figure 497 Sample trigger item TRAVER for trigger SFC

```
>TRAVER L 6136216139 B333 B
TABLE IBNLINES
HOST 02 0 14 15 0 DT STN RES 6216139 263 613_AIN2_263 L613_LATA1_0 613
(CWT)
(CWI) (AR) $
TABLE LINEATTR
263 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN2_263 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN2_263 FR01 613 AIN2 TOPS Y RESG263 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 02 0 14 15 0 AIN AIN TIID (4 FB212 ON) (4 FB333 ON) $
TABLE CUSTSTN
RESG263 AIN AIN TIID
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG263 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG263 NXLA RXCMN263 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
```

Figure 497 Sample trigger item TRAVER for trigger SFC (Continued)

```

RXCFNXXX 333 FTR 3 AIN IMMED
Checking AIN SFC Trigger Items as SFC is compatible with current call
. . TABLE TRIGITM
. . 4 FB333 SFC (DG B333) $ ULK EVENT R02 SS7 AINJAZZ $
. . . TABLE C7GTTYPE
. . . AINJAZZ ANSI7 3 $
. . . TABLE IBNFEAT
. . . TUPLE NOT FOUND
. . . TABLE C7GTT
. . . AINJAZZ 6136216139 6136216139 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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

22.15.2 TRAVER and the public feature code trigger

This section provides two example TRAVER outputs for trigger PFC.

When the datafill is correct and the trigger group provisioning interface is used, the TRAVER output should match the output provided in TRAVER 498.

When using the trigger item provisioning interface, the TRAVER output should match the output provided in TRAVER 499 on page 548.

Figure 498 Sample trigger group TRAVER output for trigger PFC

```

>TRAVER L 6136216138 B901 B
TABLE IBNLINES
HOST 02 0 14 14 0 DT STN RES 6216138 263 613_AIN2_263 L613_LATA1_0 613
(ACB)
(AR) $
TABLE LINEATTR
263 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN2_263 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN2_263 FR01 613 AIN2 TOPS Y RESG263 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $

```

Figure 498 Sample trigger group TRAVER output for trigger PFC (Continued)

```

TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 02 0 14 14 0 AIN AIN PFCTRIG
TABLE CUSTSTN
RESG263 AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG263 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG263 NXLA RXCMN263 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 901 FTR 3 AIN IMMED
TABLE TRIGGRP
PFCTRIG INFOANAL
. PODPFEAT ( DG PFCDIG)$ NIL
Trigger AIN PODPFEAT is applicable to individual RES or BRI line.
. . TABLE TRIGDIG
. . PFCDIG PODPFEAT B901 PODPFEAT EVENT TCAP R02 SS7 AINJAZZ DFLT $
. . . TABLE C7GTTYPE
. . . AINJAZZ ANSI7 3 $
. . . TABLE IBNFEAT
. . . TUPLE NOT FOUND
. . . TABLE C7GTT
. . . AINJAZZ 6136216138 6136216138 SSONLY (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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

Figure 499 Sample trigger item TRAVER output for trigger PFC

```

>TRAVER L 6136216138 B901 B
TABLE IBNLINES
HOST 02 0 14 14 0 DT STN RES 6216138 263 613_AIN2_263 L613_LATA1_0 613
(ACB)
      (AR) $
TABLE LINEATTR
263 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN2_263 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN2_263 FR01 613 AIN2 TOPS Y RESG263 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 02 0 14 14 0 AIN AIN TIID (4 PB901 ON) $
TABLE CUSTSTN
RESG263 AIN AIN TIID
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG263 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG263 NXLA RXCMN263 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 901 FTR 3 AIN IMMED
Checking AIN PFC Trigger Items as PFC is compatible with current call
. . TABLE TRIGITM
. . 4 PB901 PFC (DG B901) $ ULK EVENT R02 SS7 AINJAZZ $
. . . TABLE C7GTTYPE
. . . AINJAZZ ANSI7 3 $
. . . TABLE IBNFEAT
. . . TUPLE NOT FOUND
. . . TABLE C7GTT
. . . AINJAZZ 6136216138 6136216138 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 +++

```

Figure 499 Sample trigger item TRAVER output for trigger PFC (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.
Use the AINRES option for further information

```

```

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

22.15.3 Example with option AINDENY

At the AIN Info analyzed TDP for customer group based PFC and SFC triggers, when TRAVER detects the line is subscribed to option AINDENY, a warning message is printed and the call is routed to treatment.

When TRAVER trigger criteria determines the trigger query should be suppressed due to the AINDENY option, a message is output indicating AINDENY was found and the trigger is not encountered. Details of the AINDENY entry suppressing the trigger are also output.

When a line is individually subscribed to a PFC or SFC trigger, triggering is not suppressed due to the presence of option AINDENY.

Option AINDENY is applicable for the OFCPFC trigger. An OFCPFC trigger will be denied because of AINDENY on a customer group or individual subscription to AINDENY for OFCPFC trigger. When AINDENY is on a particular customer group, no agent belonging to that customer group will encounter OFCPFC.

The following table provides an example of AINDENY with request to DENY a TIID.

Table 927 AINDENY with request to DENY a TIID

```

>TRAVER L 6136216138 B360 B
TABLE IBNLINES
HOST 00 0 02 18 0 DT STN RES 6216138 263 613_AIN2_263 L613_LATA1_0 613 $
TABLE LINEATTR
263 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN2_263 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN2_263 FR01 613 AIN2 TOPS Y RESG263 0 0 $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT

```

Table 927 AINDENY with request to DENY a TIID

```

HOST 00 0 02 18 0 AIN AIN TIID (4 PFC360 ON) $
TABLE CUSTSTN
RESG263 AIN AIN TIID
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG263 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG263 NXLA RXCMN263 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 360 FTR 3 AIN IMMED
Checking AIN PFC Trigger Items as PFC is compatible with current call
. . TABLE CUSTTIID
. . RESG263 4 PFC360 ON
. . TABLE IBNFEAT
. . HOST 00 0 02 18 0 AINDENY AINDENY (DENY TIID 4 PFC360) $
. . TABLE TRIGITM

. . 4 PFC360 PFC TRANS (DG B360) $ ULK EVENT R02 SS7 AINROCK $
. . . TABLE C7GTTYPE
. . . AINROCK ANSI7 5 $
. . . TABLE IBNFEAT
. . . TUPLE NOT FOUND
. . . TABLE C7GTT
. . . AINROCK 6137224011 6137224011 SSONLY (AINTTEST) $
AIN Info Analyzed TDP: trigger criteria not met.
Line is subscribed to option AINDENY. Triggering denied.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

AIN Info Analyzed TDP: trigger criteria not met.
Line is subscribed to option AINDENY. Triggering denied.

TREATMENT ROUTES. TREATMENT IS: AINF
1 T120
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

22.15.4 TRAVER and the OFCPFC trigger

22.15.5 Traver OFCPFC office wide subscription

Traver reflects the routing data of a simulated AIN Service Enablers call. When SOC (AIN00309) is IDLE, trigger OFCPFC subscription verification is performed, but a warning message is displayed indicating an actual call will not trigger when the SOC AIN00309 is in IDLE state. When the SOC is ON, the call proceeds to trigger and no warning message is displayed. Examples of traver with SOC AIN00309 IDLE and SOC AIN00309 ON are shown in the following figures.

Figure 500 Traver example with SOC AIN00309 IDLE

>Traver 1 4671022 B333 B
TABLE IBNLINES
HOST 01 1 02 14 0 DT STN RES 4671022 403 416_PUB_403 L416_LATA1_400 416 \$
TABLE LINEATTR
403 1FR NONE NT 0 10 NILSFC 0 NIL 00 416_PUB_403 L416_LATA1_400 \$
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416_PUB_403 NSCR 416 PUB TSPS Y RESG416 0 0 \$ \$
TABLE RATEAREA
L416_LATA1_400 L416 NIL LATA1 \$
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
RESG416 AIN AIN TIID
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG416 0 0 0 RNCOS \$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG416 NXLA RX416 RESGSTAR 0 RES
TABLE DIGCOL
RES specified: RES digit collection
NCOS FEAT XLA name is NIL. Go to next XLA name
TABLE IBNXLA: XLANAME RESGSTAR
RESGSTAR 333 FTR 3 AIN IMMED
AIN Trigger: An actual call would not trigger on office group
subscription as SOC option AIN00309 is IDLE
Checking AIN OFCPFC Trigger Items as OFCPFC is compatible with current call
. . TABLE OFCTIID
. . RESG416 4 OPFC ON
. . TABLE TRIGITM
. . 4 OPFC OFCPFC (DG B333) \$ ULK EVENT R02 SS7 AINPOP \$
. . .TABLE C7GTTYPE
. . .AINPOP ANSI7 6 \$

Figure 500 Traver example with SOC AIN00309 IDLE

. . .TABLE IBNFEAT
. . .TUPLE NOT FOUND
. . .TABLE C7GTT
. . . AINPOP 4164671022 4164671022 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 Trigger: An actual call would not trigger on office group
subscription as SOC option AIN00309 is IDLE
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
+++ TRAVER: SUCCESSFUL CALL TRACE +++

Figure 501 Traver example with SOC AIN00309 ON

>Traver 1 4671022 B333 B
TABLE IBNLINES
HOST 01 1 02 14 0 DT STN RES 4671022 403 416_PUB_403 L416_LATA1_400 416 \$
TABLE LINEATTR
403 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416_PUB_403 L416_LATA1_400 \$
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416_PUB_403 NSCR 416 PUB TSPS Y RESG416 0 0 \$ \$
TABLE RATEAREA
L416_LATA1_400 L416 NIL LATA1 \$
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
RESG416 AIN AIN TIID
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG416 0 0 0 RNCOS \$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG416 NXLA RX416 RESGSTAR 0 RES

Figure 501 Traver example with SOC AIN00309 ON

TABLE DIGCOL
RES specified: RES digit collection
NCOS FEAT XLA name is NIL. Go to next XLA name.
TABLE IBNXLA: XLANAME RESGSTAR
RESGSTAR 333 FTR 3 AIN IMMED
Checking AIN OFCPFC Trigger Items as OFCPFC is compatible with current call
. . TABLE OFCTIID
. . RESG416 4 OPFC ON
. . TABLE TRIGITM
. . 4 OPFC OFCPFC (DG B333) \$ ULK EVENT R02 SS7 AINPOP \$
. . . TABLE C7GTTTYPE
. . . AINPOP ANSI7 6 \$
. . . TABLE IBNFEAT
. . . TUPLE NOT FOUND
. . . TABLE C7GTT
. . . AINPOP 4164671022 4164671022 PCSSN (SIMTOOL_RTSET 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
+++ TRAVER: SUCCESSFUL CALL TRACE +++

22.15.6 Traver Example with AINDENY option

For OFCPFC, when TRAVER detects the line is subscribed to AINDENY option at the AIN Info analyzed TDP, a warning message is printed and the call is routed to treatment.

The AINDENY option can be subscribed to a line as well as a customer group. The following figures show traver examples when a TIID is denied to a line and TIID is denied to a customer group.

Figure 502 Traver example when a TIID is denied to a line

>TRAVER L 6136216138 B360 B
TABLE IBNLINES
HOST 00 0 02 18 0 DT STN RES 6216138 263 613_AIN2_263 L613_LATA1_0 613 \$
TABLE LINEATTR
263 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN2_263 L613_LATA1_0 \$

Figure 502 Traver example when a TIID is denied to a line

LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN2_263 FR01 613 AIN2 TOPS Y RESG263 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
RESG263 AIN AIN TIID
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG263 0 0 0 RNCOS \$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG263 NXLA RXCMN263 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 360 FTR 3 AIN IMMED
Checking AIN PFC Trigger Items as PFC is compatible with current call
. . TABLE OFCTIID
. . 4 OPFC ON
. . TABLE IBNFEAT
. . HOST 00 0 02 18 0 AINDENY AINDENY (DENY TIID 4 opfc)
. . TABLE TRIGITM
. . 4 OPFC OFCPFC TRANS (DG B360) \$ ULK EVENT R02 SS7 AINROCK \$
. . . TABLE C7GTTYPE
. . . AINROCK ANSI7 5 \$
. . . TABLE IBNFEAT
. . . TUPLE NOT FOUND
. . . TABLE C7GTT
. . . AINROCK 6137224011 6137224011 SSONLY (AINTTEST) \$
AIN Info Analyzed TDP: trigger criteria not met.
Line is subscribed to option AINDENY. Triggering denied.
+++ TRAVER: SUCCESSFUL CALL TRACE +++
DIGIT TRANSLATION ROUTES
AIN Info Analyzed TDP: trigger criteria not met
Line is subscribed to option AINDENY. Triggering denied.

Figure 502 Traver example when a TIID is denied to a line

TREATMENT ROUTES. TREATMENT IS: FNAL
1 T120
2 LKOUT
+++ TRAVER: SUCCESSFUL CALL TRACE +++

Figure 503 Traver example when a TIID is denied to a customer group

>TRAVER L 6136216138 B360 B
TABLE IBNLINES
HOST 00 0 02 18 0 DT STN RES 6216138 263 613_AIN2_263 L613_LATA1_0 613 \$
TABLE LINEATTR
263 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN2_263 L613_LATA1_0 \$
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN2_263 FR01 613_AIN2 TOPS Y RESG263 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
RESG263 AIN AIN TIID
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG263 0 0 0 RNCOS \$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG263 NXLA RXCMN263 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 360 FTR 3 AIN IMMED
Checking AIN OFCPFC Trigger Items as OFCPFC is compatible with current call
. . TABLE OFCTIID
. . 4 OPFC ON
. . TABLE CUSTTIID
. . RESG263 4 OPFC OFF
. . TABLE TRIGITM
. . 4 OPFC OFCPFC TRANS (DG B360) \$ ULK EVENT R02 SS7 AINROCK \$
. . . TABLE C7GTTTYPE
. . . AINROCK ANSI7 5 \$
. . . TABLE IBNFEAT
. . . TUPLE NOT FOUN
. . . TABLE C7GTT

Figure 503 Traver example when a TIID is denied to a customer group

. . . AINROCK 6137224011 6137224011 SSNONLY (AINTEST) \$
AIN Info Analyzed TDP: trigger criteria not met.
Customer group is subscribed to option AINDENY. Triggering denied.
+++ TRAVER: SUCCESSFUL CALL TRACE +++
DIGIT TRANSLATION ROUTES
AIN Info Analyzed TDP: trigger criteria not met.
Customer group is subscribed to option AINDENY. Triggering denied.
TREATMENT ROUTES. TREATMENT IS: FNAL
1 T120
2 LKOUT
+++ TRAVER: SUCCESSFUL CALL TRACE +++

22.15.7 Traver for an IBN agent

Of the agents belonging to the office subscribed to OFCPFC trigger, only RES and ISDN BRI agents encounter the trigger. All other agents are blocked. The following figure shows traver for an IBN agent.

Figure 504 Traver example for an IBN agent

>TRAVER L 4771051 B360 B
TABLE IBNLINES
HOST 01 1 00 08 0 DT STN IBN 4771051 COMKODAK 0 0 416 \$
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
RESG263 AIN AIN TIID
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 STAR COL S 1
NCOS FEAT XLA name is NIL. Go to next XLA name.
TABLE IBNXLA: XLANAME CUSTFEAT

Figure 504 Traver example for an IBN agent

CUSTFEAT 123 FTR 3 AIN IMMED
Skipping AIN PFC Trigger Items as PFC is NOT compatible with current call
Checking AIN SDS Trigger Items as SDS is compatible with current call
AIN Info Analyzed TDP: trigger criteria not me
TABLE TMTCNTL
LNT (46)
. SUBTABLE TREAT
. NACK Y T OFRT 55
. TABLE OFRT
. 55 S D *OFLO
. S D LKOUT
. EXIT TABLE OFRT
+++ TRAVER: TREATMENT SET +++
TREATMENT ROUTES. TREATMENT IS: NACK
1 *OFLO
2 LKOUT
+++ TRAVER: SUCCESSFUL CALL TRACE +++

22.16 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 505 on page 559 illustrates a dialed number that escapes the SDS trigger after a continue message.

Figure 505 TRAVER example: dialed number escapes the SDS trigger after a Continue message

```

> traver 1 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 C7GTTYPE
. . . 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

```

22.17 TRAVER and prefix triggers

TRAVER is modified to support four prefix triggers. The four prefix triggers are Specified_Carrier, One_Plus_Prefix, 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 Prefix, and parameter carrier selection information (CSI).

Table 928 summarizes the parameters for individual trigger detection.

Table 928 TRAVER parameter detection for prefix 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 929 provides examples of the four prefix triggers detected by the TRAVER tool.

Table 929 Prefix 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 929 Prefix 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

22.17.1 TRAVER examples for prefix triggers

See Section 22.22 “TRAVER examples for prefix triggers” on page 575.

22.18 TRAVER example with AINCHG option

Figure 506 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 506 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 507 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 C7GTTYPE
. . . 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 +++

```

22.19 TRAVER examples with AINMQG option

Table 930 and Table 931 on page 564 each show sample output of TRAVER using the AINMQG option.

Table 930 Example TRAVER output using AINMQG option

```

>TRAVER TR ISUPITEAIC 6217140 AIN AINMQG 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) (65021) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 621 621 N DD 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HNPACONT
613 Y 999 1 ( 310) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE

```

Table 930 Example TRAVER output using AINMQG option (Continued)

```

. 621 621 DN 613 621
AIN Info Collected TDP: no subscribed trigger.
TABLE FNPA7DIG
TUPLE NOT FOUND
Checking AIN SDS Trigger Items as SDS is compatible with current call
. . TABLE OFCTIID
. . 4 SAA7140A ON
. . TABLE TRIGITM
. . 4 SAA7140A SDS (DG 6136217140) $ ULK EVENT R01 SS7 AINROCK $
. . . TABLE C7GTTYPE
. . . AINROCK ANSI7 5 $
. . . TABLE C7GTT
. . . AINROCK 6136217140 6136217140 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: of Number>
>1 6136255000
Defaults are used for Plan>, Indicator>, Indicator>
Please enter Carrier: Selection> ID>
>1 0110
Please enter storage location:Device> Name>
>SFDEV AINMQG1
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 +++

```

Table 931 Example TRAVER output using AINMQG option with no trace (nt)

```

>TRAVER L 6136216102 411 AIN AINMQG NT

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Building the AINMQG Query Message.
Please enter storage location:Device> Name>
>SFDEV AINMQG2
AINMQG Query message saved in file.
Use the AINRES option for further information

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

```

Examples that detail the effects that AIN SOC options have on TRAVER are detailed in Section 11.23 “TRAVER output of SOC options” on page 446. The AINMQG option is ignored when the base AIN SOC options are idle.

22.20 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.

22.20.1 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.

22.20.2 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 company personnel use a TNS parameter and specify that the carrier is a LEC or an OTC carrier, TRAVER traces Info_Analyzed TDP trigger checking.

TRAVER 487 provides a sample TRAVER output that shows how the CDN and TNS options route over a carrier from a public trunk.

Figure 508 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
. . 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) ( ESCOA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
```

Figure 508 Sample TRAVER output for N CDN NA and TNS NA UNK options route over a carrier from a public trunk (Continued)

```

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 +++

```

22.20.3 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 field 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 TRAVER 509, the call receives a forward call message with 621-1171 from the SCP.

Figure 509 Sample TRAVER output when call receives a forward call message with 621-1171 from the SCP

```

>traver 1 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

```

Figure 509 Sample TRAVER output when call receives a forward call message with 621-1171 from the SCP (Continued)

```

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
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

```


Figure 509 Sample TRAVER output when call receives a forward call message with 621-1171 from the SCP (Continued)

```

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 +++

```

22.20.4 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.

TRAVER 510 shows the AINRES continue option.

Figure 510 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 $

```

Figure 510 Sample TRAVER output using the AINRES continue option (Continued)

```

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

1 DAC                      NN                      ST

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

POSITION ROUTES.  POSITION IS: CAMA
1 TSPSTO

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

22.20.5 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.

22.20.6 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.

22.20.7 TERMATT

TRAVER 511 shows TRAVER output for a simulated call attempting 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 511 Sample TRAVER output using the AINRES option

```
>traver 1 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
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
```

Figure 511 Sample TRAVER output using the AINRES option (Continued)

```

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
. 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.

```

Figure 511 Sample TRAVER output using the AINRES option (Continued)

```

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                      6137224113          ST

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

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

22.21 TRAVER example of routing to an IP

TRAVER 512 is an example of how TRAVER can be used to verify routing to an IP address. In TRAVER 512, the IP address is 8147226010.

Figure 512 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
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

```

Figure 512 Sample TRAVER output for routing to an IP (Continued)

```

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 RTEMAP
. . 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 LCASCR
. TUPLE NOT FOUND.  DEFAULT IS NON-LOCAL
TABLE PFXTREAT
OPTL NP N DD UNDT
TABLE CLSVSCRC
TABLE LATAOLA
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
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

```

Figure 512 Sample TRAVER output for routing to an IP (Continued)

```
1 *OFLO
2 LKOUT

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

22.22 TRAVER examples for prefix triggers

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

22.22.1 TRAVER example for trigger Specified_Carrier

TRAVER 513 provides sample TRAVER output for the Specified_Carrier trigger.

Figure 513 Sample TRAVER output for trigger Specified_Carrier

```

traver l 6671021 1048816136671001 b
TABLE IBNLINES
HOST 01 0 00 14 0 DT STN RES 6671021 404 613_PUB_404 L613_LATA1_0 613 $
TABLE LINEATTR
404 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_PUB_404 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_PUB_404 NSCR 613 PUB TSPS Y RESG613 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 01 0 00 14 0 AIN AIN TIID (4 SPEC ON) $
TABLE CUSTSTN
RESG613 AIN AIN CDPCODE
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG613 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG613 NXLA RX613 RESGSTAR 0 RES
TABLE DIGCOL
RES specified: RES digit collection

```


Figure 513 Sample TRAVER output for trigger Specified_Carrier (Continued)

```

TABLE IBNXLA: XLANAME RX613
TUPLE NOT FOUND

Default from table XLANAME:
RX613
      (NET N N 0 N NDGT N Y GEN ( LATTR 414 613_EAP1_414 L613_LATA1_0)
      (EA ITT Y 0) $ $)$ 9

TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
414 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_EAP1_414 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_EAP1_414 C667 613 EAP1 TSPS Y RESG613 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
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.
. 10488 10488 EA DD 5 P PEA1 ITT Y OFRT 900 5 20 N
. . TABLE OFRT
. . 900 CND EA INTNL SK 2
. . N D ISUPOGITT 0 N N
. . CND ALWAYS SK 1
. . N D ISUPOGITT 15 N N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N

```

Figure 513 Sample TRAVER output for trigger Specified_Carrier (Continued)

```
TABLE STDPRTCT
PEA1 ( 1) ( 0) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 1 9 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 2 ( 59) ( 1) ( 84) ( 0) 2 $
. SUBTABLE HNPACODE
. 613667100 6136671021 HNPA 0
. 667 667 DN 613 667
TABLE TOFCNAME
613 667 $
TABLE DNINV
613 667 1001 L HOST 01 0 00 02
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.
```

Figure 513 Sample TRAVER output for trigger Specified_Carrier (Continued)

```

TABLE LCASCRCN
613 L613 ( 44) OPTL N N
. SUBTABLE LCASCR
. 613 613
TABLE LCASCRCN
613 L613 ( 44) OPTL N N
. SUBTABLE LCASCR
. 667 667
TABLE PFXTREAT
OPTL DD Y DD UNDT
TABLE CLSVSCRC
KEY NOT FOUND
EA:Local override does not apply to this call.
TABLE LATAXLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
TABLE OCCINFO
ITT 0488 EAP Y Y Y Y Y N N Y Y Y Y LONG 14 FGRPC N N Y 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   900 from Pretranslation
TABLE OFRT
  900 CND EA INTNL SK 2
      N D ISUPOGITT 0 N N
      CND ALWAYS SK 1
      N D ISUPOGITT 15 N N
EXIT TABLE OFRT
AIN Info Collected TDP: no subscribed trigger.

```

Figure 513 Sample TRAVER output for trigger Specified_Carrier (Continued)

```
Checking AIN SPECARR Trigger Items as SPECARR is compatible with current
call
. . TABLE TRIGITM
. . 4 SPEC SPECARR $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTYPE
. . . AINPOP ANSI7 6 $
. . . TABLE C7GTT
. . . AINPOP 1048800000 1048800000 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 +++
```

22.22.2 TRAVER example for the One_Plus_Prefix trigger

TRAVER 514 provides sample TRAVER output for trigger One_Plus_Prefix.

Figure 514 Sample TRAVER for trigger One_Plus_Prefix

```

traver l 6631021 16136671001 b
TABLE IBNLINES
HOST 01 0 08 14 0 DT STN RES 6631021 404 613_PUB_404 L613_LATA1_0 613 $
TABLE LINEATTR
404 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_PUB_404 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_PUB_404 NSCR 613 PUB TSPS Y RESG613 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 01 0 08 14 0 AIN AIN TIID (4 ONEPLUS ON) $
TABLE CUSTSTN
RESG613 AIN AIN TIID
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG613 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG613 NXLA RX613 RESGSTAR 0 RES
TABLE DIGCOL
RES specified: RES digit collection
TABLE IBNXLA: XLANAME RX613
TUPLE NOT FOUND

```

Figure 514 Sample TRAVER for trigger One_Plus_Prefix (Continued)

```

Default from table XLANAME:
RX613
      (NET N N 0 N NDGT N Y GEN ( LATTR 414 613_EAP1_414 L613_LATA1_0)
      (EA NILC Y 0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
414 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_EAP1_414 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_EAP1_414 C667 613 EAP1 NONE Y RESG613 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
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.
. 16 19 N DD 1 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 939 2 ( 58) ( 1) ( 84) ( 0) 2 $
. SUBTABLE HNPACODE
. 613667 6136737100 HNPA 0
. 667 667 DN 613 667

```

Figure 514 Sample TRAVER for trigger One_Plus_Prefix (Continued)

```

TABLE TOFCNAME
613 667 $
TABLE DNINV
613 667 1001 L HOST 01 0 00 02
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 ( 44) OPTL N N
. SUBTABLE LCASCR
. 613 613
TABLE LCASCRCN
613 L613 ( 44) OPTL N N
. SUBTABLE LCASCR
. 667 667
TABLE PFXTREAT
OPTL DD Y DD UNDT
TABLE CLSVSCRC
KEY NOT FOUND
TABLE LATAOLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
AIN Info Collected TDP: no subscribed trigger.
Checking AIN ONEPLUS Trigger Items as ONEPLUS is compatible with current
call

```

Figure 514 Sample TRAVER for trigger One_Plus_Prefix (Continued)

```
. . TABLE TRIGITM
. . 4 ONEPLUS ONEPLUS $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTYPE
. . . AINPOP ANSI7 6 $

. . . TABLE C7GTT
. . . AINPOP 1000000000 1000000000 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 +++
```


22.22.3 TRAVER example for the International trigger

TRAVER 515 provides sample TRAVER output for trigger International.

Figure 515 Sample TRAVER output for International trigger

```

traver l 6671021 0114164671001 b
TABLE IBNLINES
HOST 01 0 00 14 0 DT STN RES 6671021 404 613_PUB_404 L613_LATA1_0 613 $
TABLE LINEATTR
404 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_PUB_404 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_PUB_404 NSCR 613 PUB TSPS Y RESG613 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 01 0 00 14 0 AIN AIN TIID (4 INTL ON) $
TABLE CUSTSTN
RESG613 AIN AIN CDPCODE
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG613 0 0 0 RNCOS $

```

Figure 515 Sample TRAVER output for International (Continued)trigger

```

TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG613 NXLA RX613 RESGSTAR 0 RES

TABLE DIGCOL
RES specified: RES digit collection

TABLE IBNXLA: XLANAME RX613
TUPLE NOT FOUND

Default from table XLANAME:
RX613
      (NET N N 0 N NDGT N Y GEN ( LATTR 414 613_EAP1_414 L613_LATA1_0)
      (EA ITT Y 0) $ $)$ 9

TABLE DIGCOL
NDGT specified: digits collected individually

TABLE LINEATTR
414 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_EAP1_414 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE

TABLE XLAPLAN
613_EAP1_414 C667 613 EAP1 TSPS Y RESG613 0 0 $ $

TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $

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

```

Figure 515 Sample TRAVER output for International (Continued)trigger

```

TABLE CCTR
416 T 416 2 20 T OFRT 62 Y $
TABLE OFRT
INVALID ENTRY:      62
TABLE OCCINFO
ITT 0488 EAP Y Y Y Y Y N N Y Y Y Y LONG 14 FGRPC N N Y 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
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.
. 10488 10488 EA DD 5 P PEA1 ITT Y OFRT 900 5 20 N
. . TABLE OFRT
. . 900 CND EA INTNL SK 2
. . N D ISUPOGITT 0 N N
. . CND ALWAYS SK 1
. . N D ISUPOGITT 15 N N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE STDPRTCT
PEA1 ( 1) ( 0) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.

```

Figure 515 Sample TRAVER output for International (Continued)trigger

```

. 011 011 EA DD 3 T IN ITT N
. 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 INTERNTL Trigger Items as INTERNTL is compatible with current
call
. . TABLE TRIGITM
. . 4 INTL INTERNTL $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTYPE
. . . AINPOP ANSI7 6 $
. . . TABLE C7GTT
. . . AINPOP 0110000000 0110000000 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 +++

```

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

TRAVER 516 provides sample TRAVER output for trigger Operator_Services.

Figure 516 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.
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
```

Figure 516 Sample TRAVER output for trigger Operator_Services (1 of 2) (Continued)

```

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 +++

```

Figure 516 Sample TRAVER output for trigger Operator_Services (1 of 2) (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.  
Use the AINRES option for further information  
  
+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++
```

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

TRAVER 517 illustrates the translations for an Analyze_Route response for a subscriber called party number with an operator request that hits an office-wide Operator_Services trigger. The response translations simplification 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 prefixed to the digits. Despite the lack of a prefixed "0", the call still hits trigger Operator_Services.

Figure 517 TRAVER example for the Operator_Services trigger (2 of 2)

```

traver l 6136631021 n cdn na 6136671022 osa pubp ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. LECOANA (OSA PUBP (CDN NA)$) ( BC 3_1KHZ (OSA PUBP) (CDN NA)$)$
TABLE IBNLINES
HOST 01 0 08 14 0 DT STN RES 6631021 404 613_PUB_404 L613_LATA1_0 613 $
TABLE LINEATTR
404 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_PUB_404 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_PUB_404 NSCR 613 PUB TSPS Y RESG613 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 01 0 08 14 0 AIN AIN TIID (4 OPER ON) $
TABLE CUSTSTN
RESG613 AIN AIN CDPCODE
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID

```


Figure 517 TRAVER example for the Operator_Services trigger (2 of 2) (Continued)

```

TABLE NCOS
RESG613 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG613 NXLA RX613 RESGSTAR 0 RES
TABLE DIGCOL
RES specified: RES digit collection
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
TABLE IBNXLA: XLANAME RX613
TUPLE NOT FOUND
Default from table XLANAME:
RX613
      (NET N N 0 N NDGT N Y GEN ( LATTR 414 613_EAP1_414 L613_LATA1_0)
      (EA NILC Y 0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
414 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_EAP1_414 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_EAP1_414 C667 613 EAP1 TSPS Y RESG613 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.      Resulting digits are: 06136671022
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.

```

Figure 517 TRAVER example for the Operator_Services trigger (2 of 2) (Continued)

```

. 0 0 N OA 1 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 939 2 ( 59) ( 1) ( 84) ( 0) 2 $
. SUBTABLE HNPACODE
. 613667102 6136737100 HNPA 0
. 667 667 DN 613 667
TABLE TOFCNAME
613 667 $
TABLE DNINV
613 667 1022 L HOST 01 0 02 14
TABLE DNFEAT
613 667 1022
      (AINDN TIID (20 TAT_SIM ON) $)$
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 ( 44) OPTL N N
. SUBTABLE LCASCR
. 613 613
TABLE LCASCRCN
613 L613 ( 44) OPTL N N
. SUBTABLE LCASCR
. 667 667

```

Figure 517 TRAVER example for the Operator_Services trigger (2 of 2) (Continued)

```

TABLE PFXTREAT
OPTL OA Y OA UNDT
TABLE CLSVSCRC
KEY NOT FOUND
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 OPER OPERSERV $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTYPE
. . . AINPOP ANSI7 6 $
. . . 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.

+++ 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 +++

```

22.22.6 TRAVER example when the SOC option is idle

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

TRAVER 518 provides a TRAVER example illustrating when the SOC option is idle.

Figure 518 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
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
```

Figure 518 Sample TRAVER output when the SOC option is idle (Continued)

```

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
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

```

Figure 518 Sample TRAVER output when the SOC option is idle (Continued)

```

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 +++

```

22.22.7 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

TRAVER 519 provides a TRAVER example illustrating when the ISUP IAM Nature of Address parameter = International.

Figure 519 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 519 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 +++
```

TRAVER 520 provides sample TRAVER output illustrating when the ISUP IAM Nature of Address parameter=Operator requested.

Figure 520 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 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.
```


Figure 520 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 +++

```

TRAVER 521 provides TRAVER output for the ISUP IAM Carrier Selection Information parameter.

Figure 521 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 521 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 +++
```

22.22.8 TRAVER example for triggering from AIN response parameters

The TRAVER command line supports parameters Prefix, 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 TRAVER 522 for an example of a response output for trigger Operator_Services.

Figure 522 TRAVER example of a response output for trigger Operator_Services

```

traver 1 6136631021 n cdn na 6136671022 osa pubp ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. LECOANA (OSA PUBP (CDN NA)$) ( BC 3_1KHZ (OSA PUBP) (CDN NA)$)$
TABLE IBNLINES
HOST 01 0 08 14 0 DT STN RES 6631021 404 613_PUB_404 L613_LATA1_0 613 $
TABLE LINEATTR
404 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_PUB_404 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_PUB_404 NSCR 613 PUB TSPS Y RESG613 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 01 0 08 14 0 AIN AIN TIID (4 OPER ON) $
TABLE CUSTSTN
RESG613 AIN AIN CDPCODE
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID

```

Figure 522 TRAVER example of a response output for trigger Operator_Services (Continued)

```

TABLE NCOS
RESG613 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG613 NXLA RX613 RESGSTAR 0 RES
TABLE DIGCOL
RES specified: RES digit collection
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
TABLE IBNXLA: XLANAME RX613
TUPLE NOT FOUND
Default from table XLANAME:
RX613
      (NET N N 0 N NDGT N Y GEN ( LATTR 414 613_EAP1_414 L613_LATA1_0)
      (EA NILC Y 0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
414 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_EAP1_414 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_EAP1_414 C667 613 EAP1 TSPS Y RESG613 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.      Resulting digits are: 06136671022
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.

```

Figure 522 TRAVER example of a response output for trigger Operator_Services (Continued)

```

. 0 0 N OA 1 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 939 2 ( 59) ( 1) ( 84) ( 0) 2 $
. SUBTABLE HNPACODE
. 613667102 6136737100 HNPA 0
. 667 667 DN 613 667
TABLE TOFCNAME
613 667 $
TABLE DNINV
613 667 1022 L HOST 01 0 02 14
TABLE DNFEAT
613 667 1022
      (AINDN TIID (20 TAT_SIM ON) $)$
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 ( 44) OPTL N N
. SUBTABLE LCASCR
. 613 613
TABLE LCASCRCN
613 L613 ( 44) OPTL N N
. SUBTABLE LCASCR
. 667 667

```

Figure 522 TRAVER example of a response output for trigger Operator_Services (Continued)

```

TABLE PFXTREAT
OPTL OA Y OA UNDT
TABLE CLSVSCRC
KEY NOT FOUND
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 OPER OPERSERV $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTTYPE
. . . AINPOP ANSI7 6 $
. . . 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.

+++ 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 +++

```

TRAVER 523 provides sample TRAVER output illustrating a response output for parameter Prefix.

Figure 523 TRAVER example of a response output for parameter Prefix

```

>traver 1 6136211311 n cdn na 6136211411 ainres r02 ar prefix b
Warning: Routing characteristics are present.
Originator must be able to send in

```

Figure 523 TRAVER example of a response output for parameter Prefix (Continued)

```

characteristics specified.
TABLE RTECHAR
. CDNPUB (CDN NA $) (CDN IN $) ( BC 3_1KHZ (CDN NA)$) ( 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.
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 $

```

Figure 523 TRAVER example of a response output for parameter Prefix (Continued)

```

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.
LNP Info: HNPA 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

```


Figure 523 TRAVER example of a response output for parameter Prefix (Continued)

```

. . 4 ONEPLUS ONEPLUS $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTTYPE
. . . 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 +++

```

22.22.9 TRAVER Example: STRATTRS table

An example of the output for STRATTRS table follows:

Figure 524 Traver example of a STRATTRS table output

>TRAVER L 4164671001 N CDN NA 4164671002 AINRES R02 STR 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 STRATTRS
4164671002 403 416_PUB_403 L416_LATA1_400
TABLE LINEATTR
403 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416_PUB_403 L416_LATA1_400 \$
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416_PUB_403 NSCR 416 PUB TSPS Y RESG416 0 0 \$ \$
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.
TABLE STDPRTCT

Figure 524Traver example of a STRATTRS table output

PUB (1) (0) 4
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 4164671002 4164671002 T DD 0 OFRT 897 0 0 NONE
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 897 CND EA INTNL SK 2
. . N D PRASID2W 0 N N
. . CND ALWAYS SK 1
. . N D PRASID2W15 D179 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE LATAXLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
+++ TRAVER: SUCCESSFUL CALL TRACE +++
Warning: Originator's Line attributes are being overridden
by those provided in the Table STRATTRS based
on the IP address.
DIGIT TRANSLATION ROUTES
1 PRASID2W 4164671002 ST
TREATMENT ROUTES. TREATMENT IS: GNCT
1 *OFLO
2 LKOUT
+++ TRAVER: SUCCESSFUL CALL TRACE +++

22.23 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 flexible 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 525 shows output for AIN response translations with DCR handicap removal.

Figure 525 TRAVER example: AIN response translations with DCR handicap removal

```
>traver tr NET1_4to6_2w n cdn l 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
```

Figure 526 TRAVER example: AIN response translations with DCR handicap removal (Continued)

```

. 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.
. . . . TABLE OFR4
. . . . 967 N D NET1_6TO7_2W 3 947 N
. . . . TABLE OFRTMA4
. . . . . Tuple not found. Default to old index.
. . . . 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.

```

Figure 527 TRAVER example: AIN response translations with DCR handicap removal (Continued)

```
. . 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 +++
```

Figure 528 shows output for AFR interworking with DCR.

Figure 528 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

```

Figure 529 TRAVER example: AFR Interworking with DCR (Continued)

```
. . 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 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 +++

22.24 TRAVER for parameter CarrierUsage

The AIN NA014 product release enhances TRAVER for parameter CarrierUsage.

Traver supports response processing after parameter CarrierUsage occurs in SCP messages Analyze_Route and Forward_Call.

Note: Traver can display translations and routing for the carrier provided at the command line. Traver cannot select a carrier when call processing cannot use the carrier provided on the command line.

The table that follows shows the behavior of TRAVER for the various values of CU and NOC.

Table 932 Behavior of the functionality for different values of CU and NOC

Values that need to be input on the TRAVER command line					
	C U	NOC	TNS CARRIER	TYPE OF CALL	ACTION
1	0	Any	Any	Any	Retain existing functionality.
2	1	Any	Is input	INTERL	The call is routed using the TNS carrier that is input.
3	1	Any	Not input	INTERL	The call is routed to VACT treatment.
4	1	Any	Any	Non INTERL	The call is routed using the SSP provided LPIC carrier which is chosen in the order: 1. LARP provided carrier 2 Originator's carrier 3. LEC..... A warning message is displayed: "NOC is ignored as TNS Carrier is not given."
5	2	NIL	Is input	Any	The TRAVER is terminated. An error message is displayed: "NatureOfCarrier Parameter must be LOCAL/INTRALT/INTERL."
6	2	LOCAL	0110 is input	LOCAL	The call is routed using the TNS carrier that is input.
7	2	LOCAL	Other than 0110 is input	LOCAL	The TRAVER processes the call like a line-to-line call. A warning message is displayed: "Call will be routed to treatment if local."

Table 932 Behavior of the functionality for different values of CU and NOC

		Values that need to be input on the TRAVER command line			
	C U	NOC	TNS CARRIER	TYPE OF CALL	ACTION
8	2	LOCAL	Not input	LOCAL	The TRAVER is terminated. An error message is displayed: "For CU = OverridePICsOfNOCpresent, carrier is mandatory."
9	2	Non LOCAL	Is input	LOCAL	The call is routed like a line-to-line call.
10	2	INTRALT	Is input	INTRALT	The call is routed using the TNS carrier that is input.
11	2	INTRALT	Not input	INTRALT	The TRAVER is terminated. An error message is displayed: "For CU = OverridePICsOfNOCpresent, carrier is mandatory."
12	2	Non INTRALT	Is input	INTRALT	The call is routed using the SSP provided LPIC carrier which is chosen in the order: 1. LARP provided carrier 2. Originator's carrier 3. LEC
13	2	INTERL	Is input	INTERL	The call is routed using the TNS carrier that is input.
14	2	INTERL	Not input	INTERL	The TRAVER is terminated. An error message is displayed: "For CU = OverridePICsOfNOCpresent, carrier is mandatory."
15	2	Non INTERL	Is input	INTERL	The call is routed using the SSP provided PIC carrier which is chosen in the order: 1. LARP provided carrier 2. Originator's carrier 3. DEFAULT_OFFICE_CARRIER

Figure 523 shows the displayed output for CarrierUsage/NOC Functionality.

Figure 530 TRAVER example: CarrierUsage/NOC Functionality

```

traver l 6136671001 n cdn na 6136671002 tns na cic 0488 ainres r02
Next par is: <RES_TYPE> {NORES,
              AR [<PREFIX_OPTION> {PREFIX}]
                [<CARRIER_USAGE> {CU <OPTIONS> {0,
                                                    1,
                                                    2}}}
                [<NATURE OF CARRIER> {NOC <OPTIONS> {NIL,
                                                         LOCAL,
                                                         INTRALT,
                                                         INTERLT}}],
              FC [<PREFIX_OPTION> {PREFIX}]
                , [<CARRIER_USAGE> {CU <OPTIONS> {0,
                                                    1,
                                                    2}}}
                [<NATURE OF CARRIER> {NOC <OPTIONS> {NIL,
                                                         LOCAL,
                                                         INTRALT,
                                                         INTERLT}}],
              CONT,
              AT,
              STR,
              LNPAR [<LNPMBGOPTS> {MBG <BGTYPE> {LOCAL,
                                                    NATL}
                                <BGID> {0 TO 4294967295}
                                <BGLP> {0 TO 255}
                                <BGGAP> STRING}}
                    <ORIG_CALLED_DN> STRING
                    [<FLRN_CALLTYPE> {NP,
                                         DD}],
              COLINF <COLLECTED_DIGITS> STRING,
              ETC <SCP_DIGITS> STRING,
              CONNECT <SCP_DIGITS> STRING}
Enter: <RES_TYPE> [<DIG_CONV_TEST>] [<FGD_ORIG>]
      [<SCAIIN>] [<ANT>] [<CPC>] [<SCPINFO>] [<TCNI_INFO>] [<PREXLA>]
      [<PCIINFO>] [<DCRNH>] [<CSI>] [<TARIFF>] [<NPRE_INFO>] [<MOG>]
      <TRACE> [<TRCEOPT>] [<NRR>] [<CDNCHAR>] [<QVPNDIGS>]

```

22.25 TRAVER for STR response with Destination Address

This activity enhances the TRAVER tool to modify response processing for the STR message with Destination address. Carrier support for STR response translation is also provided.

When the Destination address is present in the response TRAVER for STR, Originator line attributes are overridden based on Destination address by those provided in Table STRATTRS. The line attributes specified by Table STRATTRS are used to perform POTS translation of the Destination Address.

When the tuple corresponding to Destination address provided in the TRAVER command is not present in Table STRATTRS, originator characteristics are used to translate to the IP.

When an invalid Destination address is provided in the TRAVER command, an error message is displayed indicating an invalid Destination was provided.

The Carrier Support for STR response is achieved using the TNS parameter in the TRAVER command line. The TNS parameter is used to supply the Carrier information associated with the STR response.

22.25.1 Example 1: Response Processing with POTS agent as originator

The following translations are for a POTS originator (41646671001) receiving an STR response with Destination address (41646710002) for a local IP. A warning message is displayed indicating that, based on IP address, Originator line attributes (LINEATTR, XLAPLAN and RATEAREA) are overridden by those provided in Table STRATTRS.

Figure 531AIN response transaction for STR with Destination address for POTS agent

Example 1 TRAVER output
>TRAVER L 4164671001 N CDN NA 4164671002 AINRES R02 STR 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)\$)\$
Warning: Originator's Line attributes are being overridden by STRATTRS
TABLE STRATTRS
4164671002 403 416_PUB_403 L416_LATA1_400
TABLE LINEATTR
403 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416_PUB_403 L416_LATA1_400 \$
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416_PUB_403 NSCR 416 PUB TSPS Y RESG416 0 0 \$ \$
TABLE RATEAREA
L416_LATA1_400 L416 NIL LATA1 \$
TABLE DNATTRS
TUPLE NOT FOUND

Figure 531 AIN response transaction for STR with Destination address for POTS agent

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.
TABLE STDPRTCT
PUB (1) (0) 4
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 4164671002 4164671002 T DD 0 OFRT 897 0 0 NONE
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 897 CND EA INTNL SK 2
. . N D PRASID2W 0 N N
. . CND ALWAYS SK 1
. . N D PRASID2W15 D179 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE LATAXLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
+++ TRAVER: SUCCESSFUL CALL TRACE +++
Warning: Originator's Line attributes are being overridden by STRATTRS
DIGIT TRANSLATION ROUTES
1 PRASID2W 4164671002 ST
TREATMENT ROUTES. TREATMENT IS: GNCT
1 *OFLO
2 LKOUT
+++ TRAVER: SUCCESSFUL CALL TRACE +++

22.25.2 Example 2: Response Processing with Trunk agent as originator

The following translations are for a Trunk originator (ISUPITIC) receiving an STR response with Destination address (41646710002) for a local IP. A

warning message is displayed indicating that, based on IP address, Originator line attributes LINEATTR, XLAPLAN and RATEAREA are overridden by those provided in Table STRATTRS.

Figure 532 TRAVER example: AIN response translation for STR with Destination Address for TRUNK agent

Example 2 TRAVER output
>TRAVER TR ISUPITIC N CDN NA 4164671002 AINRES R02 STR 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)\$)\$
Warning: Originator's Line attributes are being overridden by STRATTRS
TABLE STRATTRS
4164671002 403 416_PUB_403 L416_LATA1_400
TABLE LINEATTR
403 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416_PUB_403 L416_LATA1_400 \$
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416_PUB_403 NSCR 416 PUB TSPS Y RESG416 0 0 \$ \$
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.
TABLE STDPRTCT
PUB (1) (0) 4
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 4164671002 4164671002 T DD 0 OFRT 897 0 0 NONE
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 897 CND EA INTNL SK 2
. . N D PRASID2W 0 N N
. . CND ALWAYS SK 1
. . N D PRASID2W15 D179 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND

Figure 532 TRAVER example: AIN response translation for STR with Destination Address for TRUNK agent

. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE LATAXLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
+++ TRAVER: SUCCESSFUL CALL TRACE +++
Warning: Originator's Line attributes are being overridden by STRATTRS
DIGIT TRANSLATION ROUTES
1 PRASID2W 4164671002 ST
TREATMENT ROUTES. TREATMENT IS: GNCT
1 *OFLO
2 LKOUT
+++ TRAVER: SUCCESSFUL CALL TRACE +++

22.25.3 Example 3: Response Processing with VFG-IBN originator

The following translations are for a VFG-IBN originator (VCNCO1) receiving an STR response with Destination address (41646710002) for a local IP. A warning message is displayed indicating that, based in IP address, Originator line attributes LINEATTR, XLAPLAN and RATEAREA are overridden by those provided in Table STRATTRS.

Figure 533 TRAVER example: AIN response translation for STR with Destination Address for VFG agent

Example 3 TRAVER output
>TRAVER V VCNCO1 N CDN NA 4164671002 AINRES R02 STR 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 VIRTGRPS
VCNCO1 SIZE 4 IBN N COMKODAK 0 0 0 Y N N \$
Warning: Originator's Line attributes are being overridden by STRATTRS
TABLE STRATTRS
4164671002 403 416_PUB_403 L416_LATA1_400
TABLE LINEATTR
403 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416_PUB_403 L416_LATA1_400 \$
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416_PUB_403 NSCR 416 PUB TSPS Y RESG416 0 0 \$ \$

Figure 533 TRAVER example: AIN response translation for STR with Destination Address for VFG agent

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.
TABLE STDPRTCT
PUB (1) (0) 4
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 4164671002 4164671002 T DD 0 OFRT 897 0 0 NONE
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 897 CND EA INTNL SK 2
. . N D PRASID2W 0 N N
. . CND ALWAYS SK 1
. . N D PRASID2W15 D179 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE LATAOLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
+++ TRAVER: SUCCESSFUL CALL TRACE +++
Warning: Originator's Line attributes are being overridden by STRATTRS
DIGIT TRANSLATION ROUTES
1 PRASID2W 4164671002 ST
TREATMENT ROUTES. TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

Figure 533 TRAVER example: AIN response translation for STR with Destination Address for VFG agent

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

22.25.4 Example 5: Response Processing with carrier in STR message

The following translations are for a POTS originator (4164671001) receiving an STR response with Destination address (6136671002) and Carrier parameters for a remote IP. A warning message is displayed indicating that, based on IP address, Originator line attributes LINEATTR, XLAPLAN and RATEAREA are overridden by those provided in Table STRATTRS.

Figure 534 TRAVER example: AIN response translation for STR with Carrier parameter

Example 5 TRAVER output
>TRAVER L 4164671001 N CDN NA 6136671002 TNS NA CIC 0120 AINRES R02 STR B
Warning: Routing characteristics are present.
Originator must be able to send in
characteristics specified.
TABLE RTECHAR
. IXCDDNA (CDN NA (TNS NA)\$) (BC 3_1KHZ (CDN NA) (TNS NA)\$) \$
Warning: Originator's Line attributes are being overridden by STRATTRS
TABLE STRATTRS
6136671002 403 416_PUB_403 L416_LATA1_400
TABLE LINEATTR
403 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416_PUB_403 L416_LATA1_400 \$
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416_PUB_403 NSCR 416 PUB TSPS Y RESG416 0 0 \$ \$
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.
TABLE STDPRTCT
PUB (1) (0) 4
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10 10 F 0 STUTTER_DIALTONE P621
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N

Figure 534TRAVER example: AIN response translation for STR with Carrier parameter

TABLE PXLAMAP
. IXCDDNA P621 (XLA DDNA)\$
TABLE STDPRTCT
DDNA (1) (0) 5
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10120 10120 EA DD 5 T NA MCI Y OFRT 897 5 20 N
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 897 CND EA INTNL SK 2
. . N D ISUPOGMCI 0 N N
. . CND ALWAYS SK 1
. . N D ISUPOGMCI15 D179 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HNPACONT
416 Y 999 1 (49) (1) (4) (0) 4 \$
. SUBTABLE HNPACODE
. 6136671002 613667109 FRTE 900
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 900 T OFRT 730
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 730 S D Y1Y0_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
KEY NOT FOUND
LCASCRCN TUPLE MISSING
TABLE CLSVSCRC
416 C467 DD 2 N NONE (1)
. SUBTABLE CLSVSCR
. KEY NOT FOUND
EA:Local override does not apply to this call.
TABLE LATA XLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
TABLE OCCINFO

Figure 534TRAVER example: AIN response translation for STR with Carrier parameter

MCI 0120 EAP Y Y Y Y N N Y Y Y Y LONG 14 FGRPC 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 897 from Pretranslation
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
897 CND EA INTNL SK 2
N D ISUPOGMCI 0 N N
CND ALWAYS SK 1
N D ISUPOGMCI 15 D179 N
TABLE OFRTMAP
. Tuple not found. Default to old index.
EXIT TABLE OFRT
+++ TRAVER: SUCCESSFUL CALL TRACE +++
Warning: Originator's Line attributes are being overridden by STRATTRS
DIGIT TRANSLATION ROUTES
1 ISUPOGMCI 6136671002 ST
TREATMENT ROUTES. TREATMENT IS: GNCT
1 *OFLO
2 LKOUT
+++ TRAVER: SUCCESSFUL CALL TRACE +++

22.25.5 Example 6: Response Processing when AIN00304 SOC is IDLE

The following translations are for a POTS originator (41646671001) receiving an STR response with Destination address (41646710002) for a local IP when AIN00304 SOC is IDLE. A warning message is displayed indicating that, based on IP address, Originator line attributes LINEATTR, XLAPLAN and RATEAREA are overridden by those provided in Table STRATTRS. A second warning is displayed indicating AIN00304 SOC is IDLE and originator characteristics will be used for CallP translation.

Figure 535TRAVER example: AIN response translation for STR when SOC is IDLE

Example 6 TRAVER output
>TRAVER L 4164671001 N CDN NA 4164671002 AINRES R02 STR B
Warning: Routing characteristics are present.
Originator must be able to send in
characteristics specified.
TABLE RTECHAR

Figure 535 TRAVER example: AIN response translation for STR when SOC is IDLE

. LECNA (CDN NA \$) (BC 3 _1KHZ (CDN NA)\$)\$
Warning: Originator's Line attributes are being overridden by STRATTRS
TABLE STRATTRS
4164671002 403 416 _PUB_ 403 L416 _LATA1_ 400
TABLE LINEATTR
403 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416 _PUB_ 403 L416 _LATA1_ 400 \$
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416 _PUB_ 403 NSCR 416 PUB TSPS Y RESG416 0 0 \$ \$
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.
TABLE STDPRTCT
PUB (1) (0) 4
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 4164671002 4164671002 T DD 0 OFRT 897 0 0 NONE
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 897 CND EA INTNL SK 2
. . N D PRASID2W 0 N N
. . CND ALWAYS SK 1
. . N D PRASID2W15 D179 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE LATAXLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
+++ TRAVER: SUCCESSFUL CALL TRACE +++
Warning: AIN00304 SOC option is IDLE .Originator's
characteristics will be used by call processing.

Figure 535 TRAVER example: AIN response translation for STR when SOC is IDLE

Warning: Originator's Line attributes are being overridden by STRATTRS		
DIGIT TRANSLATION ROUTES		
1	PRASID2W	4164671002 ST
TREATMENT ROUTES. TREATMENT IS: GNCT		
1	*OFLO	
2	LKOUT	
+++ TRAVER: SUCCESSFUL CALL TRACE +++		

22.25.6 Response Processing for missing attributes

The following translations are for a POTS originator (41646671001) receiving an STR response with Destination address (41646710002) for a local IP. The corresponding tuple for the Destination address is not present in Table STRATTRS.

Figure 536 TRAVER example: AIN response translation for STR for missing attributes

Example 1 TRAVER output	
>TRAVER L 4164671001 N CDN NA 4164671002 AINRES R02 STR B	
Warning:Attributes not found in Table STRATTRS.	
Using Originators attributes for translation.	
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 STRATTRS	
TUPLE NOT FOUND	
TABLE LINEATTR	
518 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416_P621_418 L467_LATA1_418 \$	
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE	
TABLE XLAPLAN	
416_P621_418 C467 416_P621 TSPTS N \$ \$	
TABLE RATEAREA	
L467_LATA1_418 L467 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	
. LECNA_P621 (XLA_P621)\$	
TABLE STDPRTCT	

Figure 536TRAVER example: AIN response translation for STR for missing attributes

P621 (1) (0) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 4164671002 4164671002 T DD 0 OFRT 897 0 0 NONE
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 897 CND EA INTNL SK 2
. . N D PRASID2W 0 N N
. . CND ALWAYS SK 1
. . N D PRASID2W15 D179 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE LATAXLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
Checking AIN SDS Trigger Items as SDS 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.
+++ TRAVER: SUCCESSFUL CALL TRACE +++
DIGIT TRANSLATION ROUTES
1 PRASID2W 4164671002 ST
TREATMENT ROUTES. TREATMENT IS: GNCT
1 *OFLO
2 LKOUT
+++ TRAVER: SUCCESSFUL CALL TRACE +++

22.25.7 Example 8: Response Processing for Analyze_Route response

The following example displays the output of an Analyze_Route response TRAVER with the calledparty number datafilled in Table STRATTRS. This example shows STRATTRS data is not used for Analyze_route response.

Figure 537TRAVER example: AIN response translations for Analyze_Route response

Example 5 TRAVER output
>TRAVER L 4164671001 N CDN NA 6136671002 TNS NA CIC 0120 AINRES R02 AR B
Warning: Routing characteristics are present.
Originator must be able to send in

Figure 537TRAVER example: AIN response translations for Analyze_Route response

characteristics specified.
TABLE RTECHAR
. IXCDDNA (CDN NA (TNS NA)\$) (BC 3_1KHZ (CDN NA) (TNS NA)\$)\$
TABLE LINEATTR
403 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416_PUB_403 L416_LATA1_400 \$
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416_PUB_403 NSCR 416 PUB TSPS Y RESG416 0 0 \$ \$
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.
TABLE STDPRTCT
PUB (1) (0) 4
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10 10 F 0 STUTTER_DIALTONE P621
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE PXLAMAP
. IXCDDNA P621 (XLA DDNA)\$
TABLE STDPRTCT
DDNA (1) (0) 5
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10120 10120 EA DD 5 T NA MCI Y OFRT 897 5 20 N
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 897 CND EA INTNL SK 2
. . N D ISUPOGMCI 0 N N
. . CND ALWAYS SK 1
. . N D ISUPOGMCI15 D179 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND

Figure 537TRAVER example: AIN response translations for Analyze_Route response

. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HNPACONT
416 Y 999 1 (49) (1) (4) (0) 4 \$
. SUBTABLE HNPACODE
. 6136671002 613667109 FRTE 900
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 900 T OFRT 730
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 730 S D Y1Y0_ISUPITOG
. . EXIT TABLE OFRT
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNPACONT results are used.
TABLE LCASCRCN
KEY NOT FOUND
LCASCRCN TUPLE MISSING
TABLE CLSVSCRC
416 C467 DD 2 N NONE (1)
. SUBTABLE CLSVSCR
. KEY NOT FOUND
EA:Local override does not apply to this call.
TABLE LATAXLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
TABLE OCCINFO
MCI 0120 EAP Y Y Y Y Y N N Y Y Y Y LONG 14 FGRPC 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 897 from Pretranslation
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
897 CND EA INTNL SK 2
N D ISUPOGMCI 0 N N
CND ALWAYS SK 1
N D ISUPOGMCI 15 D179 N
TABLE OFRTMAP
. Tuple not found. Default to old index.
EXIT TABLE OFRT
+++ TRAVER: SUCCESSFUL CALL TRACE +++

Figure 537TRAVER example: AIN response translations for Analyze_Route response

DIGIT TRANSLATION ROUTES		
1	ISUPOGMCI	6136671002 ST
TREATMENT ROUTES. TREATMENT IS: GNCT		
1	*OFLO	
2	LKOUT	
+++ TRAVER: SUCCESSFUL CALL TRACE +++		

22.25.8 Example 9: Response Processing for invalid Destination address

The following translations are for a POTS originator (4164671001) receiving an STR response with invalid Destination address (not a 10 digit number) for a local IP. The corresponding tuple for the Destination address is not present in Table STRATTRS.

Figure 538TRAVER example: AIN response translation for invalid Destination Address

Example 1 TRAVER output		
>TRAVER L 4164671001 N CDN NA 911 AINRES R02 STR B		
Error :Invalid Destination Address-Mandatory 10 digits required		

23 TSTQUERY tool

23.1 Directory description

**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:

- populates the parameters of an AIN query message
- reads query message information from a file
- saves query message information to a file
- sends the query message
- allows responses to conversation messages
- generates a log of the outgoing and incoming messages
- overwrites the T1 timer for a given test query
- supports CCS7 and Ethernet transport protocol
- provides 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.

23.2 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).

23.3 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 933 on page 637, Table 934 on page 640 and Table 935 on page 646 list the messages and parameters supported by TSTQUERY for AIN Essentials and AIN Service Enablers (R01 and R02 application values).

Note: TSTQUERY uses the AIN Service Enablers' (R02) implementation of parameters for R01 parameters that have been updated in GR1299.

Table 933 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 933 AIN Service Enablers messages reported by TSTQUERY (Contin-

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 933 AIN Service Enablers messages reported by TSTQUERY (Contin-

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 934 on page 640 and Table 935 on page 646:

- 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 934 Outgoing messages and parameters supported by TSTQUERY

	SSP call-related messages																		non-call-related messages	abnormal
Parameters	Call_Info_From_Resource	Close	CTR_Clear	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_Disconnect (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)	Term_Resource_Available (TDP_R)	Timeout (EDP-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	-	SE	-	-
AMAMeasurement	-	-	SE	-	-	-	-	-		-	-	SE	-	-	-	-	-	-	-	-
AMASequence Number	-	-		X	X	X	-	X		X	X	-	-	X	X	X	-	X	-	-
Amp1	X	SE		B	B	B	X	SE		SE	B	B	X	X	B	X	-	X	SE	-
Amp2	X	X		X	X	X	X	X		X	X	X	X	X	X	X	-	X	X	-

Table 934 Outgoing messages and parameters supported by TSTQUERY (Continued)

	SSP call-related messages																		non-call-related messages	abnormal
Parameters	Call_Info_From_Resource	Close	CTR_Clear	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_Disconnect (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)	Term_Resource_Available (TDP_R)	Timeout (EDP-R)	T_No_Answer (TDP-R and EDP-R)	Termination_Notification	Error
ApplicationError String	-	-		-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	B
BCMType	-	-	SE	-	-	-	-	-		-	-	-	-	-	-	-	SE	-	-	-
BearerCapability	-	SE		B	B	B	SE	SE	SE	SE	B	-	SE	SE	B	SE	SE	SE	-	-
BusyCause	-	-		-	-	-	-	SE		-	-	-	-	SE	-	-	-	-	B	-
BusyType	-	-		-	-	-	-	-		-	-	-	-	SE	-	-	-	-	-	-
CallConfigurationID	-	-	SE	-	-	-	-	-		-	-	-	-	-	-	-	SE	-	-	-
CalledPartyID	-	-		B	-	B	-	SE		SE	-	-	-	SE	B	SE	-	SE	-	-
CalledPartyStation Type	-	-		-	-	-	-	-		-	-	-	-	X	B	SE	-	X	-	-
Calling Geodetic Location	-	-		SE	-	-	-	-		-	-	-	-	-	SE	-	-	-	-	-
CallingPartyBGID	-	-		B	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-

Table 934 Outgoing messages and parameters supported by TSTQUERY (Continued)

	SSP call-related messages																		non-call-related messages	abnormal
Parameters	Call_Info_From_Resource	Close	CTR_Clear	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_Disconnect (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)	Term_Resource_Available (TDP_R)	Timeout (EDP-R)	T_No_Answer (TDP-R and EDP-R)	Termination_Notification	Error
CallingPartyID	-	-	-	B	B	B	-	SE	-	SE	B	-	-	SE	B	SE	-	SE	-	-
Carrier	-	-	SE	B	B	B	-	SE	-	SE	B	B	-	-	-	-	-	-	-	-
ChargeNumber	-	-	-	B	B	B	-	SE	-	SE	B	-	-	SE	B	SE	-	SE	-	-
ChargeParty StationType	-	-	-	B	B	B	-	SE	-	SE	B	-	-	SE	B	SE	-	SE	-	-
ClearCause	-	-	SE	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-	-	-
ClearCauseData	-	-	SE	-	-	-	-	-	-	-	-	SE	-	-	-	-	-	-	-	-
CloseCause	-	SE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CollectedAddress Info	-	-	SE	B	B	-	-	-	-	-	-	B	-	-	-	-	-	-	-	-
CollectedDigits	-	-	SE	B	B	-	-	-	-	-	-	B	-	-	-	-	-	-	-	-
ConnectTime	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B	-

Table 934 Outgoing messages and parameters supported by TSTQUERY (Continued)

	SSP call-related messages																		non-call-related messages	abnormal
Parameters	Call_Info_From_Resource	Close	CTR_Clear	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_Disconnect (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)	Term_Resource_Available (TDP_R)	Timeout (EDP-R)	T_No_Answer (TDP-R and EDP-R)	Termination_Notification	Error
CTRConnection	-	-	-	X	-	-	-	X	-	X	-	-	-	X	X	X	-	-	-	-
DisconnectCause	-	-	-	-	-	-	-	-	SE	-	-	-	-	-	-	-	-	-	-	-
EchoData	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B	-
Extension Parameter	X	X	-	X	X	X	X	X	-	X	X	X	X	X	X	X	X	-	X	X
FailureCause	-	-	SE	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-	-	-
GenericAddress List	-	-	-	SE	SE	-	-	-	-	-	-	-	-	-	SE	-	-	-	-	-
GenericDigitsList	-	-	-	SE	-	-	-	-	-	-	-	-	-	-	SE	-	-	-	-	-
GenericName	-	-	-	-	-	-	-	-	-	-	-	-	-	SE	SE	SE	-	SE	-	-
IPReturnBlock	SE	-	SE	-	-	-	-	-	-	-	-	SE	-	-	-	-	-	-	-	-
Lata	-	-	-	B	B	B	-	SE	-	SE	B	-	-	SE	B	SE	-	SE	-	-

Table 934 Outgoing messages and parameters supported by TSTQUERY (Continued)

	SSP call-related messages																			non-call-related messages	abnormal
Parameters	Call_Info_From_Resource	Close	CTR_Clear	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_Disconnect (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)	Term_Resource_Available (TDP_R)	Timeout (EDP-R)	T_No_Answer (TDP-R and EDP-R)	Termination_Notification	Error	
LegID	-	-	SE	-	-	-	-	-	SE	-	-	-	-	-	-	-	SE	-	-	-	
NetworkSpecific Facilities	-	-	-	SE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Notification Indicator	-	-	-	-	-	SE	SE	SE	SE	SE	X	-	SE	SE	-	-	SE	SE	-	-	
OriginalCalledParty ID	-	-	-	B	B	B	-	SE	-	SE	-	-	-	SE	B	SE	-	SE	-	-	
PointInCall	-	-	SE	-	-	-	-	-	SE	-	-	-	-	-	-	-	SE	-	-	-	
Prefix (see note)	-	-	-	SE	SE	SE	-	SE	-	SE	-	-	-	-	-	-	-	-	-	-	
RedirectingPartyID	-	-	-	B	B	B	-	SE	-	SE	-	-	-	SE	B	SE	-	SE	-	-	
Redirection Information	-	-	-	B	B	B		SE	-	SE	-	-	-	SE	B	SE	-	SE	-	-	
RTPService Indicator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	
Sap	-	-	-	X	X	X	-	X	-	X	X	-	-	X	X	X	-	X	-	-	

Table 934 Outgoing messages and parameters supported by TSTQUERY (Continued)

	SSP call-related messages																	non-call-related messages	abnormal	
Parameters	Call_Info_From_Resource	Close	CTR_Clear	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_Disconnect (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)	Term_Resource_Available (TDP_R)	Timeout (EDP-R)	T_No_Answer (TDP-R and EDP-R)	Termination_Notification	Error
STRConnection	-	-	-	X	-	-	-	X	-	X	-	-	-	X	X	X	-	X	-	-
TCM	-	-	-	B	B	B	-	-	-	-	-	-	-	-	B	-	-	-	-	-
Termination Indicator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B	-
TriggerCriteriaType	-	-	-	B	B	B	-	S E	-	S E	B	-	-	S E	B	S E	-	S E	-	-
UserID	-	S E	-	B	B	B	S E	S E	S E	S E	B	-	S E	S E	B	S E	S E	S E	-	-
VerticalService Code	-	-	-	B	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Note: Parameter Prefix is not supported for NELs at the Network_Busy TDP-R/EDP-R.																				

Table 935 Incoming messages and parameters supported by TSTQUERY

	SCP or adjunct call-related messages												non-call-related messages			abnormal
Parameters	Analyze_Route	Authorize_Termination	Call_Info_To_Resource	Cancel_Resource_Event	Close	Collect_Information	Connect_To_Resource	Continue	Disconnect	Forward_Call	Offer_Call	Send_To_Resource	ACG	Request_Report_BCM_Event	Send_Notification	Error
AbsoluteSCPTIME	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AlternateBillingIndicator	B	-	-	-	-	SE	-	-	-	B	-	-	-	-	-	-
AlternateCarrier	B	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-
AlternateDialingPlanInd	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
AlternateTrunkGroup	B	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-
AMAAAlternateBilling Number	B	B	-	-	-	SE	SE	B	B	B	SE	B	-	-	-	-
AMABillingFeature	-	-	-	-	-	-	SE	-	-	-	-	-	-	-	-	-
AMABusinessCustomerID	B	B	-	-	-	-	SE	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	-	-	-	-	SE	-	-	-	-
AMASequenceNumber	X	X	-	-	-	X	SE	X	X	X	X	X	-	-	-	-
AMAServiceProviderID	X	X	-	-	-	X	SE	X	X	X	X	X	-	-	-	-
AMASlpID	B	B	-	-	-	SE	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	-	SE	-	-	-	-
CallingPartyBGID	SE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 935 Incoming messages and parameters supported by TSTQUERY (Continued)

	SCP or adjunct call-related messages												non-call-related messages			abnormal
Parameters	Analyze_Route	Authorize_Termination	Call_Info_To_Resource	Cancel_Resource_Event	Close	Collect_Information	Connect_To_Resource	Continue	Disconnect	Forward_Call	Offer_Call	Send_To_Resource	ACG	Request_Report_BCM_Event	Send_Notification	Error
CallingPartyID	B	B	-	-	-	-	-	-	-	B	SE	-	-	-	-	-
Carrier	B	-	-	-	-	-	-	-	-	B	-	SE	-	-	-	-
Carrier (with NOC)	B	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-
CarrierUsage	SE	-	-	-	-	-	-	-	-	SE	-	-	-	-	-	-
ChargeNumber	B	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-
ChargePartyStationType	B	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-
CloseCause	-	-	-	-	B	-	-	-	-	-	-	-	-	-	-	-
CollectedDigits	-	-	-	-	-	SE	-	-	-	-	-	-	-	-	-	-
ControlCauseIndicator	-	-	-	-	-	-	-	-	-	-	-	-	B	-	-	-
ControlEncountered	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ControllingLegTreatment	-	B	-	-	-	-	-	-	-	-	SE	-	-	-	-	-
DestinationAddress	-	-	-	-	-	-	SE	-	-	-	-	SE	-	-	-	-
DisconnectFlag	-	-	-	-	-	-	SE	-	-	-	-	B	-	-	-	-
DisplayText	-	B	-	-	-	-	-	-	-	-	SE	-	-	-	-	-
DPCConverter	-	-	-	-	-	SE	SE	-	-	-	-	SE	-	-	-	-
EchoData	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B	-
EDPNotification	-	-	-	-	-	-	-	-	-	-	-	-	-	SE	-	-
EDPRequest	-	-	-	-	-	-	-	-	-	-	-	-	-	SE	-	-
ExtensionParameter	SE	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 935 Incoming messages and parameters supported by TSTQUERY (Continued)

	SCP or adjunct call-related messages												non-call-related messages			abnormal
Parameters	Analyze_Route	Authorize_Termination	Call_Info_To_Resource	Cancel_Resource_Event	Close	Collect_Information	Connect_To_Resource	Continue	Disconnect	Forward_Call	Offer_Call	Send_To_Resource	ACG	Request_Report_BCM_Event	Send_Notification	Error
GapDuration	-	-	-	-	-	-	-	-	-	-	-	-	B	-	-	-
GapInterval	-	-	-	-	-	-	-	-	-	-	-	-	B	-	-	-
GenericAddressList	SE	-	-	-	-	-	-	-	-	SE	-	-	-	-	-	-
GenericName	SE	SE	-	-	-	-	-	-	-	SE	SE	-	-	-	-	-
GlobalTitleAddress	-	-	-	-	-	-	-	-	-	-	-	-	B	-	-	-
IntervalTime	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LegId	-	-	-	-	-	-	SE	-	-	-	-	-	-	-	-	-
LocalSSPTIME	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NetworkSpecificFacilities	SE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ONoAnswerTimer	-	-	-	-	-	-	-	-	-	-	-	-	-	SE	-	-
OutputPulseNumber	B	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-
OverflowBillingIndicator	B	-	-	-	-	SE	-	-	-	B	-	-	-	-	-	-
PartyID	-	-	-	-	-	-	-	-	-	-	-	SE	-	-	-	-
PartyOnHold	-	-	-	-	-	-	-	-	-	-	-	SE	-	-	-	-
PassiveLegTreatment	B	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-
Prefix	B	-	-	-	-	-	-	-	-	SE	-	-	-	-	-	-
PrimaryBillingIndicator	B	B	-	-	-	SE	SE	B	B	B	SE	B	-	-	-	-
PrimaryTrunkGroup	B	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-
RedirectingPartyID	B	-	-	-	-	-	-	-	-	SE	-	-	-	-	-	-
RedirectionInformation	SE	-	-	-	-	-	-	-	-	SE	-	-	-	-	-	-
ResourceType	-	-	SE	-	-	-	SE	-	-	-	-	B	-	-	-	-

Table 935 Incoming messages and parameters supported by TSTQUERY (Continued)

	SCP or adjunct call-related messages												non-call-related messages			abnormal
Parameters	Analyze_Route	Authorize_Termination	Call_Info_To_Resource	Cancel_Resource_Event	Close	Collect_Information	Connect_To_Resource	Continue	Disconnect	Forward_Call	Offer_Call	Send_To_Resource	ACG	Request_Report_BCM_Event	Send_Notification	Error
RTPReroutingNumber	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-
SecondAlternateBillingIndicator	B	-	-	-	-	SE	-	-	-	B	-	-	-	-	-	-
SecondAlternateCarrier	B	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-
SecondAlternateTrunkGroup	B	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-
ServiceContext	X	X	X	X	-	X	SE	X	X	X	X	X	-	-	-	-
ServiceProviderID	X	X	X	X	-	X	SE	X	X	X	X	X	-	-	-	-
StrParameterBlock	-	-	SE	-	-	-	SE	-	-	-	-	B	-	-	-	-
TCM	B	B	-	-	-	-	-	-	-	B	-	-	-	-	-	-
Timeout Timer	-	-	-	-	-	-	-	-	-	-	-	-	-	SE	-	-
TNoAnswerTimer	-	-	-	-	-	-	-	-	-	-	-	-	-	SE	-	-
TranslationType	-	-	-	-	-	-	-	-	-	-	-	-	B	-	-	-
TriggerCriteriaFlag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TSTRCTimer	-	-	-	-	-	-	-	-	-	-	-	SE	-	-	-	-
UserID	-	-	-	-	B	-	-	-	-	-	-	-	-	-	-	-
Note 1: Parameter Prefix is not supported for next event list (NEL) EDPs. Note 2: The Special Route parameter in extension parameter is only supported for AIN TFS for 800P service.																

23.4 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 (maps to either SE or 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 shown in the following figure.

Figure 539 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.

To return to CI enter the following command from CI level:

>QUIT MAPCI

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:

```

Application: R02      OutgoingMessage: Info_Collected
Transport:   SS7      T1_Timer(sec):
SessionID: 12372

TSTQUERY      Close NEL with an EDP-R or Close before quitting
0 Quit      end
2
3 Read_      Transaction ID:          9
4 Save_      Elapsed Time Between Query And Response:
5           0 minute(s) 2 second(s) 42 millisecond(s)
6 SetAppl_
7 SetTrnsp_  SCP Response Message:   Analyze_Route
8 SetT1_     Called Party ID:       6136211002
9 SetMsg_    Nature of Number:      National (significant) number
10          Numbering Plan:        ISDN Numbering Plan
11 ClrParm_  Elapsed Time Between Query And Response:
12 ListParm  0 minute(s) 2 second(s) 42 millisecond(s)
13 SeeParm_
14          SCP Response Message:   Request_Report_BCM_Event
15 Send      EDP Request:
16          0_Disconnect_Called
17          A NEL is in progress. DO NOT quit before closing it!
18 Help_
TEAM11
Time 15:00 >

```

- 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.

23.4.1 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.

23.4.1.1 Command QUIT

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.

23.4.1.2 Command READ

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 23.4.2 “Input from a file” on page 657.

23.4.1.3 Command SAVE

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.

23.4.1.4 Command SetAppl

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.

23.4.1.5 Command SeTrnsp

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.

23.4.1.6 Command SeT1

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.

23.4.1.7 Command SetMsg

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

The SetMsg command displays the Timeout message in the extended list of valid messages when an event request or notification is received in a Request_Report_BCM_Event. A sample message containing the Timeout event request is shown in Figure 525 below.

The SetMsg command supports the O_Disconnect EDP-R when the NEL is armed in a RRMCMCME component of a message. Sample messages containing the O_Disconnect and O_Disconnect_Called events are shown in figures 526 and 527, respectively. The following parameters are supported for O_Disconnect:

- Bearer Capability
- UserID
- NotificationIndicator
- DisconnectCause
- LegIDParm
- PointInCall

Note: T_Resource_Available is a valid operation for command SetMsg.

Figure 540 Sample message containing Timeout event request

```

<UID>UserID (M)lyzedefault <BC>BearerCapability (M)d
Transport: SS7 T1_Timer(sec): 15 SessionID: 8363
TSTQUERY Close NEL with an EDP-R or Close before quitting
0 Quit Send
2
3 Read_ Transaction ID: 7
4 Save_ Elapsed Time Between Query And Response:
5 0 minute(s) 0 second(s) 106 millisecond(s)
6 SetAppl_
7 SeTrnsp_ SCP Response Message: Analyze_Route
8 SeT1_ Called Party ID: 4164631001
9 SetMsg_ Nature of Number: National (significant) number
10 Numbering Plan: ISDN Numbering Plan
11 ClnParm_ AMAslpID: 123456789
12 ListParm Elapsed Time Between Query And Response:
13 SeeParm_ 0 minute(s) 0 second(s) 106 millisecond(s)
14
15 Send SCP Response Message: Request_Report_BCM_Event
16 EDP Request:
17 Timeout
18 Help_ TimeoutTimer: 5
CMAP1 A NEL is in progress. DO NOT quit before closing it!
Time 16:50
>

```

Figure 541 Sample message containing O_Disconnect Calling Event

```

Application: R02      OutgoingMessage: Info_Collected
Transport:  SS7      T1_Timer(sec):
                                SessionID: 12372

TSTQUERY      Close NEL with an EDP-R or Close before quitting
0 Quit      end
2
3 Read_      Transaction ID:      11
4 Save_      Elapsed Time Between Query And Response:
5           0 minute(s) 2 second(s) 70 millisecond(s)
6 SetAppl_
7 SeTrnsp_   SCP Response Message: Analyze_Route
8 SeT1_      Called Party ID:      6136211002
9 SetMsg_     Nature of Number: National (significant) number
10           Numbering Plan:      ISDN Numbering Plan
11 ClnParm_   Elapsed Time Between Query And Response:
12 ListParm   0 minute(s) 2 second(s) 70 millisecond(s)
13 SeeParm_
14           SCP Response Message: Request_Report_BCM_Event
15 Send      EDP Request:
16           O_Disconnect
17           A NEL is in progress. DO NOT quit before closing it!
18 Help_
TEAM11
Time 15:09 >

```

Figure 542 Sample message containing O_Disconnect_Called Event

```

Application: R02      OutgoingMessage: Info_Collected
Transport:   SS7      T1_Timer(sec):
                                           SessionID: 12372

TSTQUERY      Close NEL with an EDP-R or Close before quitting
0 Quit      end
2
3 Read_      Transaction ID:          9
4 Save_      Elapsed Time Between Query And Response:
5           0 minute(s) 2 second(s) 42 millisecond(s)
6 SetAppl_
7 SeTrnsp_   SCP Response Message:   Analyze_Route
8 SeT1_      Called Party ID:        6136211002
9 SetMsg_    Nature of Number:       National (significant) number
10          Numbering Plan:         ISDN Numbering Plan
11 ClrParm_   Elapsed Time Between Query And Response:
12 ListParm   0 minute(s) 2 second(s) 42 millisecond(s)
13 SeeParm_
14          SCP Response Message:   Request_Report_BCM_Event
15 Send      EDP Request:
16          O_Disconnect_Called
17          A NEL is in progress. DO NOT quit before closing it!
18 Help_
TEAM11
Time 15:00 >

```

23.4.1.8 Command ClrParm

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.

23.4.1.9 Command ListParm

Command ListParm lists all the parameters that are valid for the message specified for the current query. The following parameters are supported for the Timeout message:

- UserID
- Bearer Capability
- LegID
- BCMType
- PointInCall
- CallConfigurationID
- NotificationIndicator

The Timeout event request behavior is similar to existing NELs.

Note: Parameter CarrierUsage is a valid parameter for command ListParm..

23.4.1.10 Command SeeParm

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.

Note: For parameter CarrierUsage, only NatureOfCarrier is displayed.

23.4.1.11 Command Send

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.

23.4.2 Input from a file

All information required to send a query from a CI file can be input. A user can load this file using the READ command from the TSTQUERY menu. The following syntax rules apply to CI 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
>SeT1 2
>SetMsg InfoAnalyzed
>ChargeNumber 5 5 2 2 1234
>BearerCapability SPEECH
>SeTrnsp SS7 AINGTT Charge
```

23.4.3 Interactions with ACG

When ACG controls are active, the system enters parameter ACGEncountered from the ACG database. A user cannot enter parameter ACGEncountered manually.

23.4.4 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.

23.4.5 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.

23.5 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)
- Term_Resource_Available (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 23.5.1 “Send_Notification” on page 660 to Section 23.5.4 “ACG” on page 661 for a description of the messages that can be sent.

23.5.1 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.

23.5.2 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.

23.5.3 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 , EDP-Notification and Timeout EDP-R. 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 flagged 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.

23.5.4 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. TSTQUE displays this message and the non call-related application also receives this message.

24 AIN Scope Change tool (AINSCT)

24.1 Directory description

The AIN Scope Change Tool (AINSCT) provides the following capabilities:

- converts an existing line based subscription of PFC/SFC trigger in TRIGITM data model to customer group based subscription in TRIGITM data model.
- converts an existing line based subscription of PFC/SFC trigger in TRIGGRP data model to customer group based subscription in TRIGITM data mode

24.2 Functional Overview

The following figure shows the functional behavior of the Scope Change tool (AINSCT).

Figure 543 Functional behavior diagram of AINSCT tool

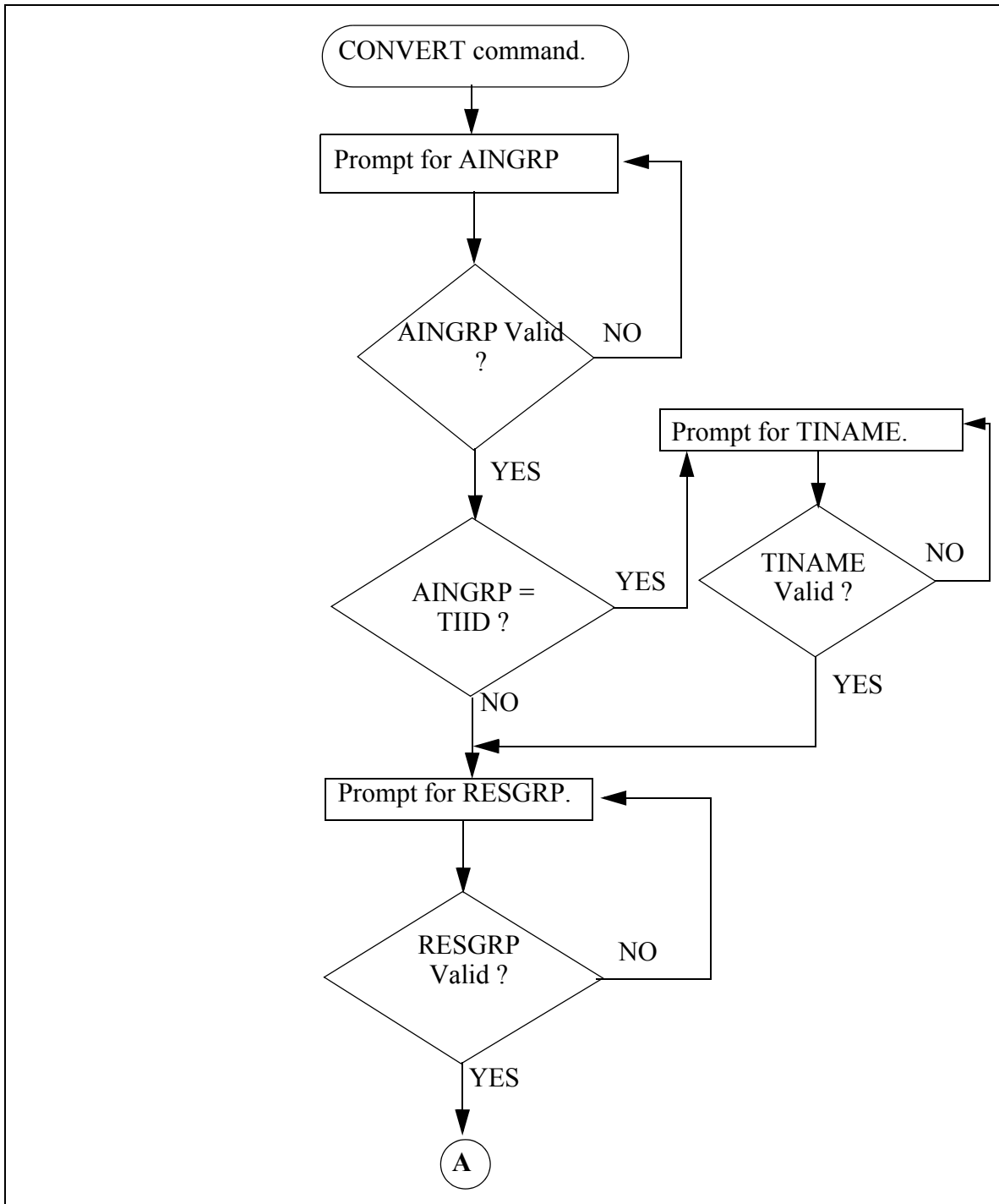
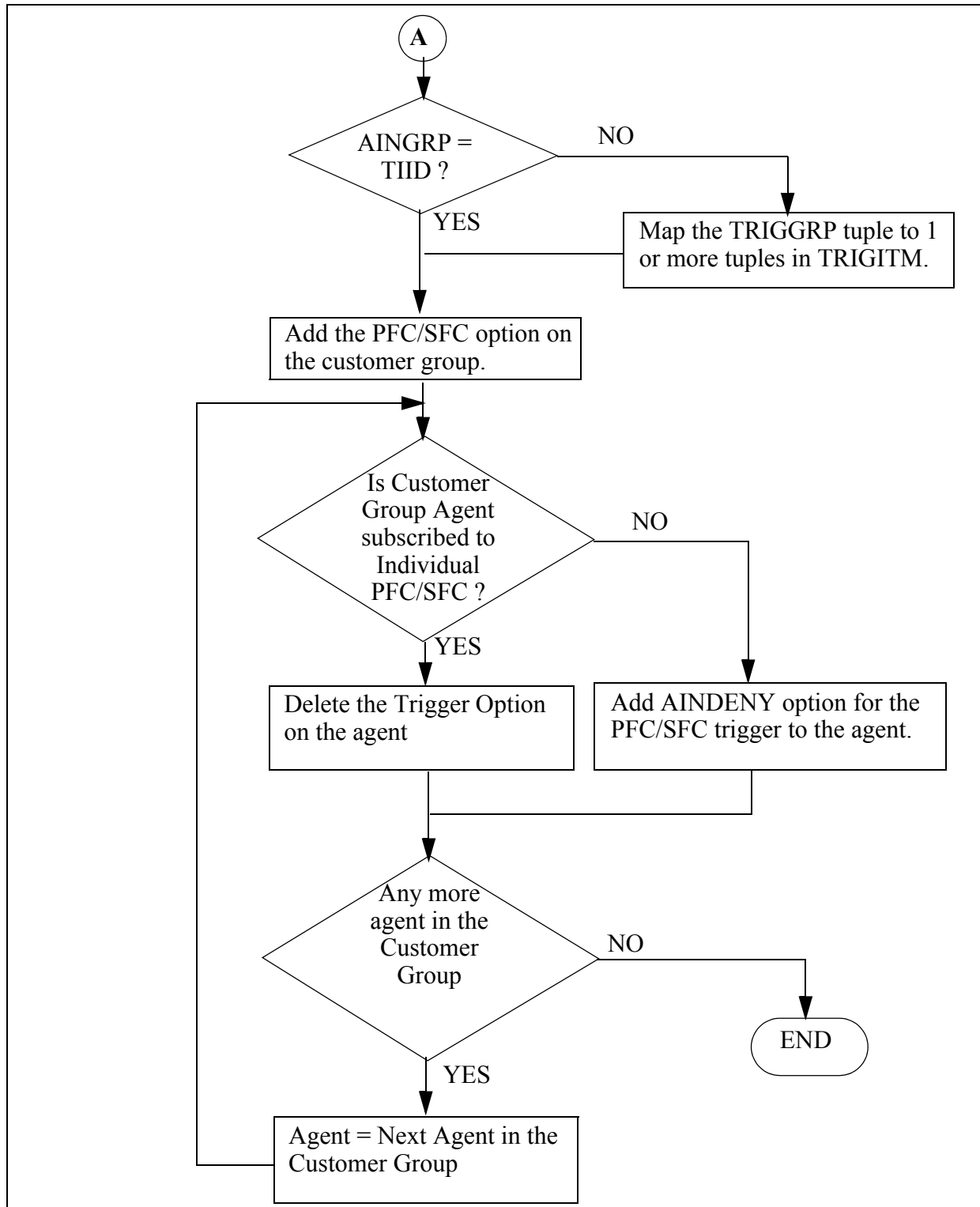


Figure 544 Functional behavior diagram of AINSCT tool (continued)



24.3 Using the Scope Change tool (AINSCT)

The steps for using the AINSCT tool follow:

- The CREATE command of AINTITT tool for the customer group must be executed when the RES customer group subscribes to an AIN trigger in the TRIGGRP data model. This is required because, no agent can have both TRIGGRP and TRIGITM AIN subscriptions assigned at any level of subscription (individual, customer group, office).
- The ANALYZE command of the AINSCT tool is executed to obtain the percentage of agents in the RES GROUP having the line based subscription to the given PFC trigger.
- The CONVERT command of the AINSCT tool is executed to convert the PFC/SFC trigger in TRIGITM/TRIGGRP data model from line subscription to customer group subscription in TRIGITM data model.

24.4 Supported commands

The following commands are supported in the AINSCT tool:

- ANALYZE
- CLEAR
- CONVERT
- HELP
- QUIT

24.4.1 ANALYZE command

The ANALYZE command computes the percentage of agents with individual subscription to the PFC/SFC trigger in the customer group entered. An example of the ANALYZE command is shown in the following figure.

Figure 545 ANALYZE command example

AINSCT:

>analyze

AINGRP:

>PFCGRP

RESGRP:

>all

1 lines of 7 line customer group RESG416 (14%) have PFCGRP line assignments.

Upon usage of CONVERT command for this RES group and PFC trigger, 6

agents will be assigned AINDENY. AIN option will be removed from the remaining lines.

Before converting ensure local practices are followed.

2 lines of 8 line customer group RESG613 (25%) have PFCGRP line assignments.

Upon usage of CONVERT command for this RES group and PFC trigger, 6

agents will be assigned AINDENY. AIN option will be removed from the remaining lines.

Before converting ensure local practices are followed.

10 lines of 100 line customer group POTSDATA (10%) have PFCGRP line assignments.

Upon usage of CONVERT command for this RES group and PFC trigger, 90

agents will be assigned AINDENY. AIN option will be removed from the remaining lines.

Before converting ensure local practices are followed.

24.4.1.1 ANALYZE command for TRIGGRP based PFC/SFC trigger

The ANALYZE command for a TRIGGRP based data model accepts the following parameters as input:

- AINGRP : This parameter accepts TRIGNAME from Table TRIGGRP which has an associated PFC/SFC trigger.
 - When an invalid value is entered, an error message is printed and the craftsperson is prompted re-enter the AINGRP.
 - When an invalid value is entered more than once, a list of all valid values is printed and the craftsperson is prompted to re-enter the AINGRP as shown in Figure 546 .
- RESGRP : This parameter accepts either a valid RES customer group or the string 'ALL'. RESGRP 'ALL' signifies the ANALYZE command must be repeated for all the RES groups in the switch.
 - When an invalid value is entered, an error message 'INVALID CUSTOMER GROUP' is printed and the craftsperson is prompted to re-enter the RESGRP.
 - When a valid IBN customergroup name is entered, the message 'NOT A RES CUSTOMERGROUP' is printed and the craftsperson is prompted to re-enter RESGRP value as shown in Figure 547 .
 - When an invalid value is entered more than once, a list of all valid values is printed and the craftsperson is prompted to re-enter the RESGRP.

Figure 546 ANALYZE command for invalid AINGRP

```

AINSCT:
>analyze
AINGRP:
>ds
DS
*** ERROR ***

|
TYPE OF AINGRP IS AINGRPID
PLEASE ENTER:
AINGRP:
>ds
DS
*** ERROR ***

|
TYPE OF AINGRP IS AINGRPID
TYPE IS AINGRPID
{OFFHKIMM,TERMATT,INTEROFF,LNOFFHKDEL,TRKOFFHKDEL,CDPCO
DE,
        OFCTRIG,AFRTRIG,LNTRIGGRP_AUTO,LNTRIGGRP1_AUTO,
        DNTRIGGRP1_AUTO,TRKTRIGGRP1_AUTO,TRKTRIGGRP2_AUTO,
        OHI_TRAFFIC,TAT_TRAFFIC,INT_TRAFFIC,LNOHD_TRAFFIC,
        TRKOHD_TRAFFIC,PFC_TRAFFIC,AFRTRIG_TRAFFIC,PODPFC1,PODPFC
DP,
        PODPFC,TAT_SIM,OHI_SIM,LNOHD_SIM,TRKOHD_SIM,PFC_AUTO,
        NCR_OHI,NCR_OHD,NCR_TAT,TAT_ISCP,OHI_ISCP,LNOHD_ISCP,
        TKOHD_ISCP,BRIPFC1,BRIPFC2,NIL,TIID}
PLEASE ENTER:
AINGRP:

```

Figure 547 ANALYZE command for invalid RESGGRP

```
AINSCT:
>analyze
AINGRP:
>pfcgrp
RESGRP:
>junk
INVALID CUSTOMER GROUP
RESGRP:
>mdc613
NOT A RES CUSTOMERGROUP
TYPE is RESGRP
{RESG200, RESG613,
RESG416,RESG202,RESG299,RESG298,MDC613,
RESG297, COMKODAK}
PLEASE ENTER:
RESGRP:
```

24.4.1.2 ANALYZE command for TRIGITM based PFC/SFC trigger.

An example of the ANALYZE command for TRIGITM based PFC/SFC trigger is shown in the following figure.

Figure 548 ANALYZE command for TRIGITM based PFC/SFC trigger example

AINSCT:

>analyze

AINGRP:

>tiid

TINAME:

> all

RESGRP:

>RESG613

1 lines of 7 line customer group RESG613 (14%) have PFC1 line assignments.

Upon usage of CONVERT command for this RES group and PFC trigger, 6

agents will be assigned AINDENY. The given trigger will be removed from the remaining lines

Before converting ensure local practices are followed

2 lines of 8 line customer group RESG613 (25%) have PFC2 line assignments.

Upon usage of CONVERT command for this RES group and PFC trigger, 6

agents will be assigned AINDENY. AIN option will be removed from the remaining lines

Before converting ensure local practices are followed

10 lines of 100 line customer group RESG613 (10%) have PFC3 line assignments.

Upon usage of CONVERT command for this RES group and PFC trigger, 90

agents will be assigned AINDENY. AIN option will be removed from the remaining lines

The ANALYZE command for a TRIGITM based data model accepts the following parameters as input:

- AINGRP: This parameter accepts the string 'TIID'
 - When an invalid value is entered more than once, a list of all valid values is printed and the craftsperson is prompted to re-enter the AINGRP as shown in Figure 546 .
- TINAME: This parameter accepts either the value of TINAME in Table TRIGTM associated with the PFC/SFC trigger, or the string 'ALL'. RESGRP 'ALL' signifies that the ANALYZE command must be repeated for all of the PFC/SFC triggers datafilled in Table TRIGIT.
 - When an invalid value is entered more than once, a list of all valid values is printed and the craftsperson is prompted to re-enter the TINAME as shown in the following figure.
- RESGRP: This parameter accepta either a valid RES customer group or the string 'ALL'. RESGRP 'ALL' signifies the ANALYZE command must be repeated for all RES groups in the switch.
 - When an invalid value is entered, an error message 'INVALID CUSTOMER GROUP' is printed and the craftsperson is prompted to re-enter the RESGRP.
 - When a valid IBN customergroup name is entered, the message 'NOT A RES CUSTOMERGROUP' is printed and the craftsperson is prompted to re-enter the RESGRP as shown in Figure 550 .
 - When an invalid value is entered more than once, a list of all valid values is printed and the craftsperson is prompted to re-enter the RESGRP.

Figure 549 ANALYZE command for invalid TINAME

```
AINSCT:
>analyze
AINGRP:
>tiid
TINAME:
>dsajds
INVALID TINAME
TINAME:
>junk
INVALID TINAME
TYPE is TINAME
{PFC_SIM, SFC_SIM, PFC, PFC1, SFC2, SFC1, SDS_SIM,
CDP_SIM}
PLEASE ENTER
TINAME:
>
```

Figure 550 ANALYZE command for invalid RESGRP

```
AINSCT:  
>analyze  
AINGRP:  
>tiid  
TINAME:  
>pfc1  
RESGRP:  
>junk  
INVALID CUSTOMER GROUP  
RESGRP:  
>mdc613  
NOT A RES CUSTOMERGROUP  
TYPE is RESGRP  
{RESG200,  
RESG613,RESG416,RESG202,RESG299,  
RESG298,RESG297,COMKODAK, MDC613}  
PLEASE ENTER:  
RESGRP:  
>RESG613
```

24.4.1.3 ANALYZE command warning

When all of the conditions below are satisfied, the ANALYZE command prints a warning message indicating the conversion will not be successful.

- The agent belongs to the specified customer group.
- The agent has no individual subscription to the PFC/SFC trigger entered.
- The agent has subscribed to the maximum number of AINDENYs.

An example of the ANALYZE command warning message is shown in the following figure.

Figure 551 ANALYZE command warning message

AINSCT:

>analyze

AINGRP:

>tiid

TINAME:

>pfc1

RESGRP:

>RESG416

1 lines of 7 line customer group RESG416 (14%) have PFC1 line assignments.

Upon usage of CONVERT command for this RES group and PFC trigger, 6

agents will be assigned AINDENY. The given trigger will be removed from the remaining lines

Before converting ensure local practices are followed

Warning: 4164671021 has subscribed to maximum number of AINDENYs. AINDENY for pfc1 will not be added to 4164671021. After the conversion, 4164671021 may encounter the pfc1 trigger.

24.4.2 CLEAR command

The CLEAR command can be used to free all the queues allocated during the AINSCT operation. When the AINSCT tool is not exited cleanly, a message appears the next time the tool is entered, . It recommends running the CLEAR command to free the queues which were allocated during the previous operation.

Figure 552 CLEAR command example

```
>ainsct
AIN Scope Change Tool
The scope change tool did not terminate cleanly on last execution.
Run the CLEAR command before proceeding.
AINSCT:
>
>clear
The trigger group to trigger item mapping has been cleared.
>
```

24.4.3 CONVERT command

The CONVERT command performs the conversion of the PFC/SFC trigger in TRIGITM/TRIGGRP data model from line subscription to customer group subscription in TRIGITM data model. An example of the CONVERT command is shown in the following figure.

Figure 553 CONVERT command example

```
AINSCT:
>convert

Warning: Ensure that you have used ANALYZE command before using
CONVERT command.

AINGRP:
>PFCGRP

RESGRP:
>all

Converting Trigger PFC to
TRIGITM Tuple: 4 pfc1 pfc dg b123 $ ulk event r02 ss7 ainpop $
The default trigger item identifier is: PFC1.
Do you accept this trigger item identifier: PFC1 ? (Type N to modify)
Please confirm ("YES", "Y", "NO", or "N"):
n
Enter a new trigger item identifier.
*** ERROR ***

INDIVIDUAL PROMPT
|
TYPE OF TINAME IS EIGHT_CHAR_VECTOR
TINAME:
>PFC_SIM
Accept this trigger item identifier: PFC_SIM? (Type N to modify)
Please confirm ("YES", "Y", "NO", or "N"):
>y
Completed conversion of Trigger AFR to
TRIGITM Tuple: 4 PFC_SIM PFC DG b123 $ ULK EVENT R02 SS7 AINPOP $
Warning : AINDENY for pfc_sim was not added to 6136671001 of the
RESGRP RESG613.6136671001 may encounter pfc_sim trigger.
>
```

24.4.3.1 Convert command for TRIGGRP based PFC/SFC trigger

The CONVERT command for a TRIGGRP based data model accepts the following parameters as input:

- AINGRP: This parameter accept TRIGNAME from Table TRIGGRP which has PFC/SFC trigger associated with it
 - When an invalid value is entered, an error message is printed and the craftsperson is prompted to re-enter the AINGRP.
 - When an invalid value is entered more than once, a list of all valid values is printed and the craftsperson is prompted to re-enter the AINGRP as shown in the following figure.

Figure 554 CONVERT command with invalid AINGRP

```

AINSCT:

>convert

Warning: Ensure that you have used
ANALYZE command before using
CONVERT command.

AINGRP:

>ds

DS

*** ERROR ***

|

TYPE OF AINGRP IS AINGRPID

PLEASE ENTER:

AINGRP:

>ds

DS

*** ERROR ***

|

TYPE OF AINGRP IS AINGRPID

TYPE IS AINGRPID
{OFFHKIMM,TERMATT,INTEROFF,LNOFFHKDE
L,TRKOFFHKDEL,CDPCODE,

OFCTRIG,AFRTRIG,LNTRIGGRP_AUTO,LNTRIG
GRP1_AUTO,

DNTRIGGRP1_AUTO,TRKTRIGGRP1_AUTO,TR
KTRIGGRP2_AUTO,

OHI_TRAFFIC,TAT_TRAFFIC,INT_TRAFFIC,LN
OHD_TRAFFIC,

TRKOHDTraffic,PFC_Traffic,AFRTRIG_T
raffic,PODPFC1,PODPFCDP,

```

- RESGRP: This parameter accepts either a valid RES customer group or the string 'ALL'. REESGRP 'ALL' signifies the CONVERT command must be repeated for all RES groups in the switch.
 - When an invalid value is entered, an error message 'INVALID CUSTOMER GROUP' is printed and the craftsperson is prompted to re-enter the RESGRP value.
 - When a valid IBN customer group name is entered, the message 'NOT A RES CUSTOMERGROUP' is printed and the craftsperson is prompted to re-enter the RESGRP as shown in Figure 555 .
 - When an invalid value is entered more than once, a list of all valid values is printed and the craftsperson is prompted to re-enter the RESGRP.

Figure 555 CONVERT command with invalid RESGRP

AINSCT:

>convert

Warning: Ensure that you have used ANALYZE command before using CONVERT command.

AINGRP:

>PFCGRP

RESGRP:

>ds

INVALID CUSTOMER GROUP

RESGRP:

>mdc613

NOT A RES CUSTOMERGROUP

TYPE is RESGRP

**{RESG200, RESG613,
RESG416,RESG202,RESG299,RESG298,RESG297,
MDC613, COMKODAK}**

PLEASE ENTER:

24.4.3.1.1 Convert command for TRIGGRP based PFC/SFC trigger functions

The CONVERT command for TRIGGRP based PFC/SFC trigger performs the following functions:

- Adds tuples in Table TRIGITM corresponding to triggers associated with the entry of the Table TRIGGRP, given as AINGRP. A TINAME must be

entered for each tuple added in Table TRIGITM. The tuple in Table TRIGGRP is not removed.

- Adds the AINGRP of the given RES GROUP in Table CUSTSTN to TIID if required.
- Adds the PFC/SFC trigger to the RES GROUP in Table CUSTTIID. The default state is ON.
- Removes the AIN option from DNs associated with the concerned RES GROUP.
- Adds AINDENY for the PFC/SFC trigger to DNs not subscribed for the TRIGGRP based AIN option.
- Adds all the triggers (except PFC/SFC) associated with the given AINGRP in the TRIGITM data model to the DNs subscribed for the AIN option given as AINGRP. For example, the AINGRP entered has associated LNP, PODP, PFC and ONOA triggers. At completion of the CONVERT command, PFC trigger is added to the RES customer group in TRIGITM data model and ONOA trigger is added to the lines subscribed to AIN option in TRIGGRP data model. AINDENY for the PFC trigger is added to the DNs not subscribed for the given AIN option in TRIGGRP data model.

24.4.3.1.2 Warning message in Convert command for TRIGGRP based PFC/SFC trigger

When all of the conditions are satisfied, the CONVERT command prints a warning message indicating AINDENY was not added.

- The agent belongs to the specified customer group.
- The agent has no individual subscription to the PFC/SFC trigger entered.
- The agent has subscribed to the maximum number of AINDENYs.

An example of the CONVERT command for TRIGGRP based PFC/SFC trigger warning message is shown in the following figure.

Figure 556 Warning message in Convert command for TRIGGRP based PFC/SFC trigger

AINSCT:

>convert

Warning: Ensure that you have used ANALYZE command before using CONVERT command.

AINGRP:

>PFCGRP

RESGRP:

> RESG613

Warning : AINDENY for pfc_sim was not added to 6136671001 of the RESGRP RESG613.

>

24.4.3.2 CONVERT command for conversion of line based PFC/SFC trigger in TRIGITM data model to customer group based PFC/SFC trigger in TRIGITM data model

The CONVERT command for a TRIGGRP based data model accepts the following parameters as input:

- AINGRP: This parameter will accept a string 'TIID'.
 - When an invalid value is entered, an error message is printed and the craftsperson is prompted to re-enter the AINGRP.
 - When an invalid value is entered more than once, a list of all valid values is printed and the craftsperson is prompted to re-enter the AINGRP as shown in Figure 554 .
- TINAME: This parameter accepts the TINAME from Table TRIGITM associated with the PFC/SFC trigger.
 - When an invalid value is entered, an error message is printed and the craftsperson is prompted to re-enter the TINAME.
 - When an invalid value is entered more than once, a list of all valid values is printed and the craftsperson is prompted to re-enter the TINAME as shown in the following figure.

Figure 557 CONVERT command with invalid TINNAME

AINSCT:

>convert

Warning: Ensure that you have used ANALYZE command before using CONVERT command.

AINGRP:

>tiid

TINAME:

>dsajds

INVALID TINAME

TINAME:

>junk

INVALID TINAME

TYPE is TINAME

{PFC_SIM, SFC_SIM, PFC, PFC1, SFC2, SFC1}

PLEASE ENTER

TINAME:

>pfc_sim

RESGRP:

>all

Warning : AINDENY for pfc_sim was not added to 6136671001 of the RESGRP RESG613.6136671001 may encounter pfc_sim trigger.

>

- RESGRP: This parameter accepts either a valid RES customer group or the string 'ALL'. RESGRP 'ALL' signifies the CONVERT command must be repeated for all RES groups in the switch.
 - When an invalid value is entered, an error message 'INVALID CUSTOMER GROUP' is printed and the craftsperson is prompted to re-enter the RESGRP.
 - When a valid IBN customer group name is entered, the message 'NOT A RES CUSTOMERGROUP' is printed and the craftsperson is prompted to re-enter the RESGRP as shown in Figure 558 .
 - When an invalid value is entered more than once, a list of all valid values is printed and the craftsperson is prompted to re-enter the RESGRP.

Figure 558 CONVERT command with invalid RESGRP

AINSCT:

>convert

**Warning: Ensure that you have used ANALYZE
command before using CONVERT command.**

AINGRP:

>tiid

TINAME:

>pfc_Sim

RESGRP:

>ds

INVALID CUSTOMER GROUP

RESGRP:

>mdc613

NOT A RES CUSTOMERGROUP

TYPE is RESGRP

**{RESG200, RESG613,
RESG416,RESG202,RESG299,RESG298,RESG297,
MDC613, COMKODAK}**

PLEASE ENTER:

RESGRP:

>RESG613

24.4.3.2.1 CONVERT command for conversion of line based PFC/SFC trigger in TRIGITM data model to customer group based PFC/SFC trigger in TRIGITM data model functions

The CONVERT command for conversion of line based PFC/SFC trigger in TRIGITM data model to customer group based PFC/SFC trigger in TRIGITM data model performs the following functions:

- Adds the AINGRP of the specified RESGRP in Table CUSTSTN to TIID if required.
- Adds the PFC/SFC trigger to the RESGRP in Table CUSTTIID. The default state is ON.
- Removes the PFC/SFC trigger from DNs associated with the specified RESGRP.
- Adds the AINDENY option for the PFC/SFC trigger to DNs not subscribed to line based option. AINDENY is added to the DNs subscribed to line based PFC/SFC triggers in the OFF state.

24.4.3.2.2 Warning message in CONVERT command for conversion of line based PFC/SFC trigger in TRIGITM data model to customer group based PFC/SFC trigger in TRIGITM data model

When the following conditions are satisfied, the CONVERT command prints a warning message indicating AINDENY was not added:

- The agent belongs to the specified customer group.
- The agent has no individual subscription to the PFC/SFC trigger entered.
- The agent has subscribed to the maximum number of AINDENYs.

An example of the CONVERT command for conversion of line based PFC/SFC trigger in TRIGITM data model to customer group based PFC/SFC trigger in TRIGITM data model warning message is shown in the following figure.

Figure 559 CONVERT command for conversion of line based PFC/SFC trigger in TRIGITM data model to customer group based PFC/SFC trigger in TRIGITM data model warning message

AINSCT:

>convert

Warning: Ensure that you have used ANALYZE command before using CONVERT command.

AINGRP:

>PFCGRP

RESGRP:

> RESG613

Warning : AINDENY for pfc_sim was not added to 6136671001 of the RESGRP RESG613.

>

24.4.3.3 Duplicate entries

Duplicate entries can be created in table TRIGITM during execution of the CONVERT command in TRIGGRP data model . This occurs if the CONVERT command is executed for the same TRIGGRP/TRIGDIG entries in two different sessions of AINSCT tool. Duplicate entries can be avoided by executing the CONVERT command in the same AINSCT session.

24.4.4 HELP command

The HELP command provides help in using the AINSCT tool.

When the HELP command is executed specifying an AINSCT command, a description of the command is displayed.

When the HELP command is executed without specifying another AINSCT command, the list of commands supported by AINSCT tool is displayed on the screen. An example of the HELP command is shown in the following figure.

Figure 560 HELP command example

AINSCT:

>help

AIN Scope Change Tool.

Available commands:

ANALYZE - Computes the percentage of agents subscribed to given PFC/SFC trigger.

CONVERT - Converts the given PFC/SFC trigger from individual subscription level to customer group subscription level

CLEAR - clear the queues created during processing

QUIT - exit increment

24.5 Supported messages and parameters

24.5.1 Warning message for AINTITT tool

The following warning message is provided for the CREATE sub-command for INDIVIDUAL triggers of AINTITT tool. This warning message is not required for NA017 loads as there will be no restriction in number of PFC/SFC trigger subscription on line due to RL re-engineering (A59037110). This warning is added only during patching the SCT tool to pre-NA017 loads.

Figure 561 Warning message in AINTITT tool

```
>create individual noprompt
Converting to trigger items may create duplicate
items with the same data in table TRIGITM.
Do you wish to have these duplicate trigger items
automatically deleted?
Please confirm ("YES", "Y", "NO", or "N"):
>n
If any PFC and SFC trigger is also being converted
abort this tool and use AINSCT tool to convert the PFC
and SFC triggers.
continue anyway?
Please confirm ("YES", "Y", "NO", or "N"):
>n
```

24.6 Limitations

The following are limitations of the Scope Change tool:

- The AINSCT tool does not have a provision to undo the changes incurred due to use of this tool. Any changes required must be done manually.
- When the AINGRP entered in the CONVERT command is associated with PFC/SFC and CDPCODE trigger, only the PFC/SFC trigger is added to the RESGRP. The CDPCODE trigger is not provisioned, because it is not compatible with RESGRP.

25 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
- QAIN tool

25.1 Query commands

The query commands display AIN SSP information for DNs, 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 office
- 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 office 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 specific check using the TRAVER tools.

Figure 562 shows an example query of DN 7225027 that subscribes to AIN SSP. The group of triggers it subscribes to is specified by AINGRP1. In this case, AINGRP1 and its associated triggers would be datafilled in table TRIGGRP.

Figure 562 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
-----
>
```

25.2 Display of office wide AIN trigger group subscription

This function displays the prompt “OFFICE OPTIONS:” and a list of the office 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 Office Options followed by the trigger group name. A sample of the office options display capability is shown in Figure 563 on page 695.

Figure 563 Office option display capability example

```

PM TERMINAL NUMBER :      179
OPTIONS:
DGT
RES OPTIONS:
AIN LINETRIG1
OFFICE OPTIONS:
U3WC AIN OFFICETRIG
-----
>

```

25.3 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 564 on page 696.

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 564 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
-----
>

```

25.4 Samples of queries

This section shows a number of figures illustrating the output of the QLEN, QLENWRK, QDN, QDNWRK, and QGRP commands.

Figure 565 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 565 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 566 on page 697 provides a sample output for a QLENWRK command. In this example, the trigger group OFFICETRIG is provisioned as the office wide trigger group.

Figure 567 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 568 on page 699 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 office wide AIN trigger group.

Figure 568 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 569 on page 700 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 office wide trigger group.

Figure 569 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.

>
```

25.5 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 office-wide AIN subscription data.

When the AIN_OFFICE_TRIGGRP office parameter is set to “TIID”, the office option portion of the line query output appears as “AIN TIID”, indicating that one or more subscriptions to office wide trigger items are in use.

See Figure 570 and Figure 571 on page 702 for sample outputs.

Figure 570 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 571 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
-----
```

25.5.1 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 572 illustrates customer group and individual subscription to AIN using the trigger item provisioning interface.

Figure 572 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
-----

```

25.6 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
```

25.7 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.

25.8 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>
```

25.9 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>
```

25.10 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.

25.10.1 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

25.10.1.1 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 936.

Table 936 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 CLI, 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 CLI 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 937 shows how the call type criteria

(from the subscribed AIN agent's trigger group) is mapped to the corresponding bearer capabilities.

Table 937 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 573 on page 708.

Figure 573 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 CAPABILTIY 3_1KHZ
AGENT:          DN 6136211111
TRIGGER:        OFFHKDEL
BEARER CAPABILITY: 56KDATA
TRIGGER STATE:  OFF
BEARER CAPABILITY: 64KDATA
TRIGGER STATE:  ON

```

25.10.1.2 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 938.

Table 938 CHANGESTATE command

>CHANGESTATE	<agent>	{DN <directory number> CLLI <trunk group name> ADNUM <administrative number> }

Table 938 CHANGESTATE command (Continued)

<trigger>	{OFFHKIMM, OFFHKDEL, TERMATT}
[<bearer_capability>]	{SPEECH, 3_1KHZ, 56KDATA, 64KDATA}
<state>]	{ON, OFF}

where:

- <agent> is either a DN, a CLI, 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 CLI 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 574 on page 710 demonstrates the use of command CHANGESTATE.

Figure 574 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
```

25.10.2 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:

```
>ACGDISELAY [<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 datafilled 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.

25.11 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.

25.11.1 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

25.11.2 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.

25.11.3 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

25.11.3.1 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%.

25.11.3.2 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 firmware timing at any given time. The tools ACTIVITY, ANALYSIS, HOGCT, and CALLCT use firmware timing. When you start CALLTRAK with either PGMTRACE or TIMECALL turned on, CALLTRAK checks for another tool that is using firmware timing. When another tool is using firmware timing, CALLTRAK does not start and displays a warning message.

25.11.3.3 Number of sessions

Fifteen CALLTRAK sessions can be run simultaneously.

25.12 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.

25.12.1 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.

25.12.2 Commands

The commands available at the DISPCALL level are as follows:

- clear
- death
- disptid
- free
- help
- query
- quit
- savelen
- savetid
- set
- show

25.12.2.1 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.

25.12.2.2 Death command

Use the death command to enable or disable data collection for dropped calls.

25.12.2.3 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).

25.12.2.4 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.

25.12.2.5 Help command

Use the help command to access on-line information on DISPCALL commands.

25.12.2.6 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

25.12.2.7 Quit command

Use the quit command to exit from DISPCALL.

25.12.2.8 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.

25.12.2.9 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.

25.12.2.10 Set command

Use the set command to allocate call data buffers.

25.12.2.11 Show command

Use the show command to display the call data buffers.

25.12.3 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 939 provides explanations for the responses to command DISPCALL.

Table 939 Responses for the DISPCALL command

MAP response	Meaning and action
CAN'T ALLOCATE COMMAND DIRECTORY	Meaning: The system does not have enough resources to allocate a DISPCALL command directory. Action: Wait until the system is less busy and enter the command again. When the problem continues, contact your next level of support.

Table 939 Responses for the DISPCALL command (Continued)

MAP response	Meaning and action
CAN'T EXTEND THE SYMBOL TABLE	Meaning: system does not have enough resources to allocate a DISPCALL symbol table. Action: Wait until the system is less busy and try again. When the problem persists, contact your next level of support.

25.12.4 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.

25.12.4.1 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.

25.12.4.2 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.

25.12.4.3 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.

25.12.5 Restrictions and limitations

The DISPCALL tool does not function when CPU occupancy is too high.

25.13 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.

25.13.1 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

25.13.2 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 575 to Figure 578 on page 721.

Figure 575 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 576 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 577 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 578 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 579.

Figure 579 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 TYPE	GLOBAL TITLE ADDRESS	GAP_DUR (Secs)	GAP_INT (mSecs)	GAP_DUR REMAINING	GAP_INT 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 580.

Figure 580 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.

25.14 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’.

25.14.1 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.

25.14.2 Commands

The following commands are possible from UPDCI level:

- QUEUE
- DEQ (remove from the queue)
- STATUS

25.14.2.1 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 datafilled in table MSRTAB). The <indication-type> a stuttered dial tone and lamp are currently supported (stuttered [S] or lamp [L]).

For example:

>QUEUE 6211001 1010101010 S

25.14.2.2 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 datafilled in table MSRTAB). The <indication-type> a stuttered dial tone and lamp are currently supported (stuttered [S] or lamp [L]).

For example:

>DEQ 6211001 1010101010 S

25.14.2.3 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

25.14.2.4 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>
```

25.14.2.5 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.

25.14.2.6 Restrictions and Limitations

No limitations are identified with UPDCI.

25.15 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.

25.16 QAIN

The functionality of the Query AIN (QAIN) command is to

- display the AIN/AINDN options associated with a DN/LEN/customer group/trunk group/office, for TRIGGRP as well as TRIGITM data models.
- display the AINDENY options subscribed by DN/LEN and customer group.
- display the number of lines in a customer group which are subscribed to AIN/AINDN and AINDENY separately.

This activity is dependent on SOC AIN00006 - Call Management.

Also the command QAIN supports multi user compatibility. Multiple instances of the tool can be run in a switch.

The QAIN command is used in the following manner at the CI prompt:

- QAIN LEN <line equipment number/logical terminal identifier>
- QAIN DN <directory number>
- QAIN CUSGRP <customer group>
- QAIN TRK <trunk group>
- QAIN OFC

If any of the parameter after QAIN is an invalid parameter, the command format is displayed as help and the craftsperson has to give the command again.

If any parameter is not entered , it shall prompt for the parameter.

If the craftsperson types HELP QAIN and enter, The QAIN format is displayed.

Figure 581 Example for QAIN

CI:
>HELP QAIN

```
COMMAND QAIN :    QUERY AIN SUBSCRIPTION DATA
COMMAND FORMAT :  QAIN LEN <LINE EQUIPMENT NUMBER /
                   LOGICAL TERMINAL IDENTIFIER>
                   OR
                   QAIN DN <DIRECTORY NUMBER>
                   OR
                   QAIN CUSGRP <CUSTOMER GROUP>
                   OR
                   QAIN TRK <TRUNK GROUP>
                   OR
                   QAIN OFC
```

25.16.1 QAIN DN <directory number>

This option displays the AIN/AINDN options subscribed by a DN. The AINDENY options, if any, are also displayed.

The craftsman can enter 7-digit as well as 10-digit DN.

Figure 582 Example for QAIN DN <directory number>

CI:

>QAIN DN 6136671024

TRIGITM DATA MODEL

FEATURE	TDP	TINAME	TRIGDATA	TRIGACT	MSGSET	TRANSPORT	OPTIONS
AIN	4	SFC_SIM	SFC (DG 1234567)\$	OFF	R02	SS7 AINPOP DFLT	\$
AINDN	20	TAT_SIM	TERMATT \$	ON	R02	SS7 AINPOP DFLT	\$

AINDENY DATA

FEATURE	TDP	TINAME	TRIGDATA	MSGSET	TRANSPORT	OPTIONS
DENY	4	SFC1	SFC (DG B98)\$	R02	SS7 AINPOP DFLT	\$

>QAIN DN 6136671022

TRIGGRP DATA MODEL

FEATURE	TRIGGER	TRIGDATA	MSGSET	TRANSPORT	OPTIONS
AIN	TAT_TRFC	TERMATT	TERMATT \$JAZZINFO	R01	SS7 AINJAZZ DFLT

>QAIN DN

DN :

>6136671023

AINDENY DATA

FEATURE	TDP	TINAME	TRIGDATA	MSGSET	TRANSPORT	OPTIONS
DENY	4	SFC1	SFC (DG B98)\$	R02	SS7 AINPOP DFLT	\$
RESTORE	4	PFC2	PFC (DG B123)\$	R02	SS7 AINPOP DFLT	\$

Figure 583 QAIN DN <directory number> (continued)

```

CI:
>QAIN
>Enter any one : DN/LEN/CUSGRP/TRK/OFC
>DN
DN :
> 6136671024

TRIGITM DATA MODEL
-----
FEATURE TDP TINAME   TRIGDATA           TRIGACT MSGSET  TRANSPORT  OPTIONS
-----
AIN      4   SFC_SIM   SFC (DG 1234567)$  OFF      R02      SS7 AINPOP DFLT  $
AINDN   20  TAT_SIM   TERMATT $         ON       R02      SS7 AINPOP DFLT  $

AINDENY DATA
-----
FEATURE TDP TINAME   TRIGDATA           MSGSET  TRANSPORT  OPTIONS
-----
DENY    4   SFC1     SFC (DG B98)$      R02     SS7 AINPOP DFLT  $

>QAIN DN HOST 01 0 00 02

>Error : Invalid DN

>QAIN DN 6631001
>No AIN options subscribed

```

25.16.2 QAIN LEN <line equipment number>

This option displays the AIN/AINDN options subscribed by a valid LEN. The display contains AINDENY options also, if any.

Both TRIGGRP and TRIGITM data models are supported.

Figure 584 Example for QAIN LEN <line equipment number>

CI:

>QAIN LEN HOST 01 0 00 02

TRIGITM DATA MODEL

FEATURE	TDP	TINAME	TRIGDATA	TRIGACT	MSGSET	TRANSPORT	OPTIONS
AIN	17	AFR_SIM	AFR (CT VBINFO)\$	OFF	R02	SS7 AINPOP DFLT	\$
AINDN	20	TAT_SIM	TERMATT \$	ON	R02	SS7 AINPOP DFLT	\$

>QAIN LEN HOST 01 0 02 14

TRIGGRP DATA MODEL

FEATURE	TRIGGER	TRIGDATA	MSGSET	TRANSPORT	OPTIONS
AIN	TAT_TRFC	TERMATT TERMATT \$JAZZINFO	R01	SS7 AINJAZZ DFLT	\$

>QAIN LEN

LEN :

>HOST 01 0 01 02

AINDENY DATA

FEATURE	TDP	TINAME	TRIGDATA	MSGSET	TRANSPORT	OPTIONS
DENY	4	SFC1	SFC (DG B98)\$	R02	SS7 AINPOP DFLT	\$
RESTORE	4	PFC2	PFC (DG B123)\$	R02	SS7 AINPOP DFLT	\$

>QAIN LEN 6631001

>Error : Invalid LEN

>

25.16.3 QAIN CUSGRP <customer group>

This option displays the AIN options subscribed by a customer group as well as AINDENY options, if any.

The option also displays the number of lines of the customer group which are subscribed to AIN, AINDN, and AINDENY options.

Figure 585 Example for QAIN CUSGRP

CI:

>QAIN CUSGRP COMKODAK

No. of lines with AIN options = 12
 No. of lines with AINDN options = 03
 No. of lines with AINDENY options = 09

TRIGITM DATA MODEL

TDP	TINAME	TRIGDATA	TRIGACT	MSGSET	TRANSPORT	OPTIONS
17	AFR_SIM	AFR (CT VBINFO)\$	OFF	R02	SS7 AINPOP DFLT	\$
20	TAT_SIM	TERMATT \$	ON	R02	SS7 AINPOP DFLT	\$

AINDENY DATA

FEATURE	TDP	TINAME	TRIGDATA	MSGSET	TRANSPORT	OPTIONS
DENY	4	OFCPFC1	OFCPFC (DG B98)\$	R02	SS7 AINPOP DFLT	\$

>QAIN CUSGRP RESG416

No. of lines with AIN options = 12
 No. of lines with AINDN options = 03
 No. of lines with AINDENY options = 09

TRIGGRP DATA MODEL

TRIGGER	TRIGDATA	MSGSET	TRANSPORT	OPTIONS
TAT_TRFC TERMATT	TERMATT \$JAZZINFO	R01	SS7 AINJAZZ DFLT	\$

Figure 586 QAIN CUSGRP <customer group> (continued)

CI:

>QAIN CUSGRP

>Customer group:

>COMKODAK

No. of lines with AIN options = 12
 No. of lines with AINDN options = 03
 No. of lines with AINDENY options = 09

TRIGITM DATA MODEL

TDP	TINAME	TRIGDATA	TRIGACT	MSGSET	TRANSPORT	OPTIONS
17	AFR_SIM	AFR (CT VBINFO)\$	OFF	R02	SS7 AINPOP DFLT	\$
20	TAT_SIM	TERMATT \$	ON	R02	SS7 AINPOP DFLT	\$

AINDENY DATA

FEATURE	TDP	TINAME	TRIGDATA	MSGSET	TRANSPORT	OPTIONS
DENY	4	OFCPFC1	OFCPFC (DG B98)\$	R02	SS7 AINPOP DFLT	\$

>QAIN CUSGRP abcdef

>## Error ##

Type of customer group is customer_group

CUSTOMER GROUP:

>RESG200

No. of lines with AIN options = 12
 No. of lines with AINDN options = 03
 No. of lines with AINDENY options = 09

TRIGGRP DATA MODEL

TRIGGER	TRIGDATA	MSGSET	TRANSPORT	OPTIONS
TAT_TRFC TERMATT	TERMATT \$JAZZINFO	R01	SS7 AINJAZZ DFLT	\$

25.16.4 QAIN TRK <trunk group>

This option displays the AIN/AINDN options associated with a trunk group. The TRIGGRP and TRIGITM data models are displayed separately.

Figure 587 Example for QAIN TRK <trunk group>

CI:

>QAIN TRK ISUPITIC

TRIGITM DATA MODEL

FEATURE	TDP	TINAME	TRIGDATA	TRIGACT	MSGSET	TRANSPORT	OPTIONS
AIN	17	AFR_SIM	AFR (CT VBINFO)\$	OFF	R02	SS7 AINPOP DFLT	\$
AIN	4	SFC_SIM	S FC (DG B98)\$	ON	R02	SS7 AINPOP DFLT	\$

>QAIN TRK ISUPITEAIC

TRIGGRP DATA MODEL

TRIGGER	TRIGDATA	MSGSET	TRANSPORT	OPTIONS
TAT_TRFC TERMATT	TERMATT \$JAZZINFO	R01	SS7 AINJAZZ DFLT	\$

>QAIN TRK abcd

> ## Error ##

Type of trunk group is Common_language_name

TRUNK GROUP:

>ISUPITIC

TRIGITM DATA MODEL

FEATURE	TDP	TINAME	TRIGDATA	TRIGACT	MSGSET	TRANSPORT	OPTIONS
AIN	17	AFR_SIM	AFR (CT VBINFO)\$	OFF	R02	SS7 AINPOP DFLT	\$
AIN	4	SFC_SIM	S FC (DG B98)\$	ON	R02	SS7 AINPOP DFLT	\$

25.16.5 QAIN OFC

This option displays the AIN options that the office is subscribed to. Since either TRIGGRP or TRIGITM data model exists for an office, either of the data model is displayed.

Figure 588 Example for QAIN OFC

CI:
>QAIN OFC

TRIGITM DATA MODEL

	TDP TINAME	TRIGDATA	TRIGACT	MSGSET	TRANSPORT	OPTIONS
17	AFR_SIM	AFR (CT VBINFO)\$	OFF	R02	SS7 AINPOP DFLT	\$
4	SDS_1	SDS(DG 123456)	ON	R02	SS7 AINPOP DFLT	\$
4	SDS_2	SDS(DG 5454545)	OFF	R02	SS7 AINPOP DFLT	\$

>QAIN OFC

TRIGGRP DATA MODEL

	TRIGGER	TRIGDATA	MSGSET	TRANSPORT	OPTIONS
TAT_TRFC	TERMATT	TERMATT \$JAZZINFO	R01	SS7 AINJAZZ DFLT	\$

26 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

26.1 Advanced trouble locating procedures task list

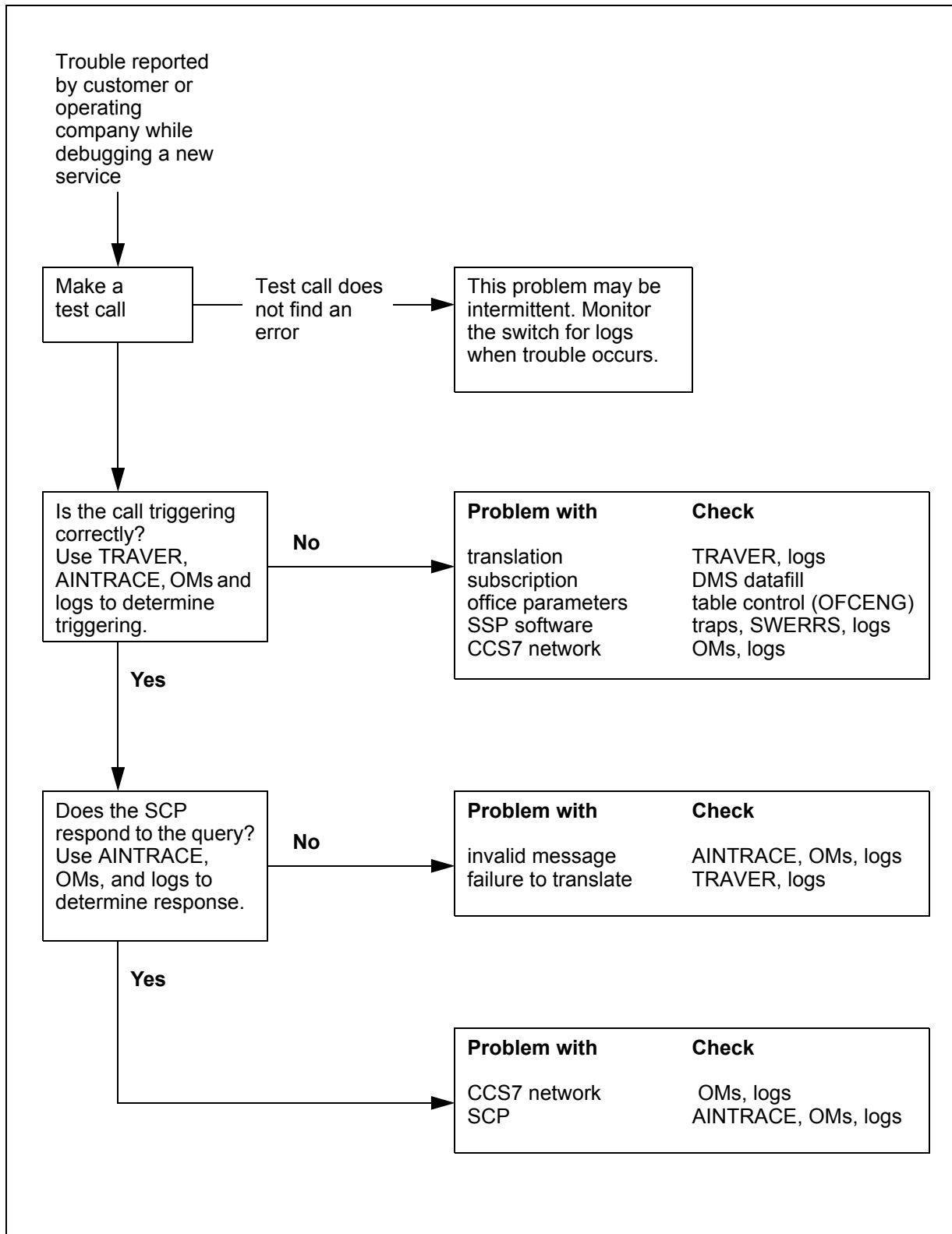
The tasks exclusively assigned to more experienced operating company personnel for AIN include the following:

- Verify datafill using translation verification (TRAVER).
- Determine when datafill 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 589 on page 735 summarizes the overall approach to AIN trouble locating and clearing.

Figure 589 Quick reference for AIN trouble locating and clearing



26.2 Verify datafill using TRAVER

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.

26.3 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.

26.4 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.

26.5 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.

26.5.1 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.

26.5.2 Application error handling

The system detects application errors at the decoder and reports these errors to the SCP or adjunct.

26.5.3 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

26.5.4 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.

26.5.5 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 office 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.

26.6 Reporting to the SCP or adjunct

Protocol errors, application errors, and the caller abandon information are reported to the SCP or adjunct.

26.6.1 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.

26.6.2 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`

26.6.3 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.

26.7 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.

26.7.1 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 743

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

26.7.1.1 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.

26.7.1.2 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, when these instructions involve another office, advise that office before starting the step-action instructions.

26.7.1.3 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.

26.8 Calls to AIN trigger do not complete

26.8.1 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, datafill 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 Interoffice Trunk (INTEROFF)
- Automatic Flexible Routing (AFR)
- Public Office Dialing Plan 3 to 10 (PODP)
- N11
- Customized Dial Plan (CDPCODE)

26.8.2 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 datafill (translations)
- inability of the subscriber to activate AIN features
- protocol or application errors caused by incorrect TCAP messages
- SCP datafill 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 final treatment.

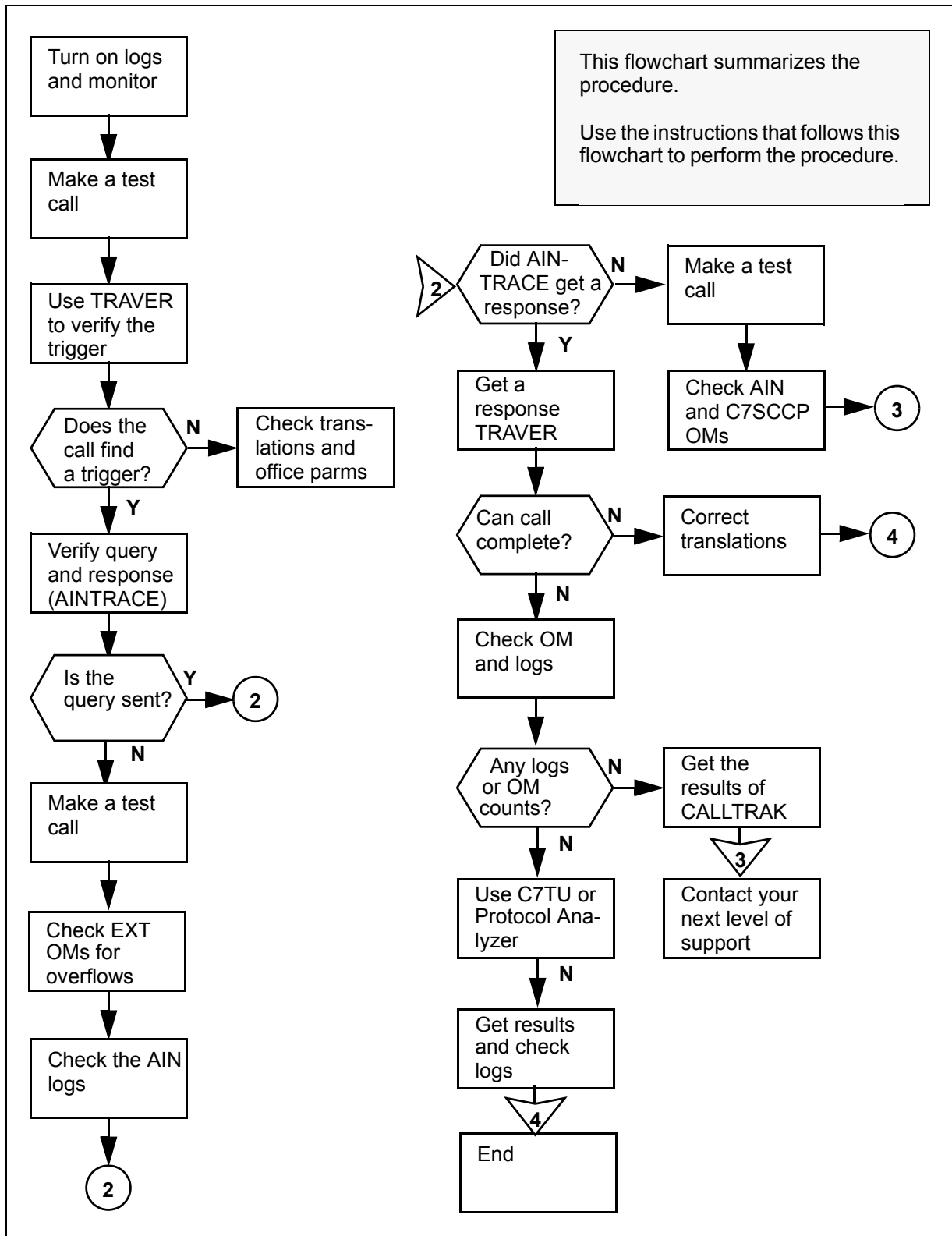
26.8.3 Common procedures

None.

26.8.4 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 590 Summary of Calls to AIN trigger do not complete



Procedure 3 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 office parameters.
- 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 overflows.
- 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.

27 Logs for AIN

The following sections describe logs used by AIN.

The following list outlines the logs used by AIN:

- AIN300
- AIN301
- AIN302
- AIN303
- AIN304
- AIN500
- AIN501
- AIN510
- AIN511
- AIN600
- AIN601
- AIN602
- AIN610
- AIN611
- AIN612
- AINT700
- AUD579
- AUD650
- AUD651
- DFIL109
- DFIL320
- GAME100

28 AUD579

28.1 Explanation

Log AUD579 is generated when a call traps, dies, or terminates and an extra-large history data block (HDB) is linked to the call.

28.2 Format

The format for log AUD579 is illustrated in the following figure.

Figure 591 Format for log AUD579

```
AUD579 <mm:dd:yy> <hh:mm:ss> <ssdd> INFO EXT DUMP <callid>
<hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh
hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh
hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh
hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh
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hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh
hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh
hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh>
```

28.3 Example

An example output for log AUD579 is illustrated in the following figure.

29 AIN300

29.1 Explanation

The advanced intelligent network (AIN) subsystem generates log AIN300. Log AIN300 is generated when the service control point (SCP) control list overflows. The SCP control list overflows when the subsystem attempts to add a control to a full list. 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 network condition at the time of the request.

The subsystem generates log AIN300 once per five minute period. Log AIN300 lists the number of attempts to generate this log in the UNREPORTED_OVERFLOWES field.

Log AIN300 is for AIN Essentials and subsequent releases.

29.2 Format

The format for log AIN300 is illustrated in the following figure.

Figure 593 Format for log AIN300

```
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_OVERFLOWES: <>
```

Note: The subsystem modifies log AIN300 in NA008 so that it does not refer to AIN Essentials on the second line.

29.3 Example

An example output for log AIN300 is illustrated in the following figure.

Figure 594 Example output for log AIN300

```

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_OVERFLOWS: 4

```

29.4 Field descriptions

The following table describes each field in the log AIN300.

Table 941 Field descriptions for log AIN300

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 C7GTTTYPE, field GTTNAME	Translation type name can indicate a service, a group of services, or a software release. The TT_Name depends on entries.
UNREPORTED_OVERFLOWS	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.

29.5 Action

Analyze the SCP control list for old controls. To delete old controls, use command ACGDELETE in the CI AINCI directory.

29.6 Associated OM registers

Group AINACG, Register SCPOVLDO.

29.7 Additional information

Use table LOGCLASS to suppress generation of log AIN300. Do not use table LOGCLASS to report thresholding of log AIN300. The ACG application performs the thresholding.

30 AIN301

30.1 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.

30.2 Format

The format for log AIN301 is illustrated in the following figure.

Figure 595 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.

30.3 Example

An example output for log AIN301 is illustrated in the following figure.

Figure 596 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_OVERFLOWS: 4

```

30.4 Field descriptions

The following table describes each field in log AIN301.

Table 942 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 C7GTTTYPE, 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.

30.5 Action

Analyze the SMS control list for stale controls. Use command ACGDELETE in the CI AINCI directory to delete any stale controls.

30.6 Associated OM registers

Group AINACG, register SMSOVLDO.

30.7 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.

31 AIN302

31.1 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 datafilled 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 field.

Log AIN302 pertains to AIN Essentials and subsequent releases.

31.2 Format

The format for log AIN302 is illustrated in the following figure.

Figure 597 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 modified in NA008 so that it no longer refers to AIN Essentials on the second line.

31.3 Example

An example output for log AIN302 is illustrated in the following figure.

Figure 598 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

```

31.4 Field descriptions

The following table explains each of the fields in the log AIN302.

Table 943 Field descriptions for log AIN302

Field	Value	Description
List_Type	SCP or SMS	Indicates: • 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.

31.5 Action

Check table C7GTTYPE to determine whether the TT number is present and whether it should be included in the table.

31.6 Associated OM registers

None

31.7 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.

32 AIN303

32.1 Explanation

The advanced intelligent network (AIN) subsystem generates log AIN303 when the SSP receives an ACG message. The ACG work queue is full when this log is generated.

The system generates log AIN303 once per 5-min period. lists the number of attempts to generate this log from the previous report in the SUPPRESSED field.

32.2 Format

The format for log AIN303 is illustrated in the following figure.

Figure 599 Format for log 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 NA008, so that it no longer refers to AIN Essentials on the second line.

32.3 Example

An example output for log AIN303 is illustrated in the following figure.

Figure 600 Example output for log AIN303

```
COMR05AB * AIN303 Feb01 14:29:08 0600 TBL ACG/SOCC_Queue
      AIN ACG Work Queue Overflow
      ACTION: Increase processor time for ACG.
      SUPPRESSED: 2
```

32.4 Field descriptions

The following table describes each field in log AIN303.

Table 944 Field descriptions for log AIN303

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.

32.5 Action

The ACG work queue runs at SOS Scheduler class AUXCP. Use office parameter AUXCP_CPU_SHARE in table OFCENG to set the time slice available to AUXCP. Use caution when you change parameter AUXCP_CPU_SHARE, because many other office applications use AUXCP.

32.6 Associated OM registers

There are no associated OM registers.

32.7 Additional information

Use table LOGCLASS to suppress this report. Do not use table LOGCLASS to perform a threshold report for log AIN303, because the ACG application performs thresholding.

33 AIN304

33.1 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 field.

33.2 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: < >
```

33.3 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
```

33.4 Field descriptions

The table that follows describes each field 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.

33.5 Action

None.

33.6 Associated OM registers

There are no associated OM registers.

33.7 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.

34 AIN500

34.1 Explanation

Log AIN500 records successful AIN Update message, requested activation state changes, for trigger item IDs. Log AIN500 allows telephone operating companies to monitor changes to trigger item activation states. 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) update requests. Log AIN500 can be used to verify that all desired activation changes are complete.

Note: Log AIN500 is not generated for individual trigger item updates.

34.2 Format

The format for log report AIN500 is illustrated in the following figure.

Figure 601 Format for log AIN500

```
<load name> * AIN500 <date> <time> <seqno> TBL Successful
trigger item update
Message Type: Update
SSP User Resource:<user resource id> = <resource data
value>
TDP: e<1 to 34>
SubNum: <N11,LNP,SDS,AFR>
STATE: <ON/OFF>
Source: SCP; PC: <0 to 255>-<0 to 255>-<0 to 255>, SSN:
<0 to 255>
```

34.3 Example

An example output for log AIN500 is illustrated in the following figure.

Figure 602 Example output for log AIN500

```
COMR09AJ * AIN500 JAN02 11:52:45 4100 TBL Successful
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
```

34.4 Field descriptions

The following table explains each of the fields in the log AIN500.

Table 945 Field descriptions for log AIN500

Field	Value	Description
Message Type	Message Type: Update	Indicates the Update message.
Source	SCP or PC: nnn-xxx-xxx, 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.

34.5 Action

No immediate action is required for log AIN500.

34.6 Associated OM registers

There are no associated OM registers for log AIN500.

34.7 Additional information

Not applicable

35 AIN501

35.1 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.

35.2 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>
```

35.3 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
```

35.4 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.

35.5 Action

No immediate action is required for log AIN501.

35.6 Associated OM registers

There are no associated OM registers for log AIN501.

35.7 Additional information

AIN501 logs are not generated for individual trigger Item Updates.

36 AIN510

36.1 Explanation

The advanced intelligent network (AIN) subsystem generates log AIN510 when operating company personnel enable automatic call gapping (ACG).

This report indicates the date and time when operating company personnel enabled the ACG.

Log AIN510 applies to AIN Essentials and subsequent releases.

36.2 Format

The format for log AIN510 is illustrated in the following figure.

Figure 603 Format for log AIN510

```
COMD08AB * AIN510 <Date> <Time> <Seqno> RTS ACG State
The AIN ACG Functionality is now turned ON.
```

36.3 Example

An example output for log AIN510 is illustrated in the following figure.

Figure 604 Example output for log AIN510

```
COMD08AB * AIN510 Feb01 14:29:08 0600 RTS ACG State
The AIN ACG Functionality is now turned ON.
```

36.4 Field descriptions

The following table describes each field in log AIN510.

Table 946 Field descriptions for log AIN510 (Sheet 1 of 2)

Field	Value	Description
Date	mmdd	Indicates month and day

Table 946 Field descriptions for log AIN510 (Sheet 2 of 2)

Field	Value	Description
Time	hh:mm:ss	Indicates hour, minute, second
Seqno	nnnn	the sequence number of this report

36.5 Action

There is no action required.

36.6 Associated OM registers

There are no associated OM registers.

36.7 Additional information

Enable ACG with the ACGONOF command in the AINCI tool.

37 AIN511

37.1 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.

Log AIN511 applies to AIN Essentials and subsequent releases.

37.2 Format

The format for log AIN511 is illustrated in the following figure.

Figure 605 Format for log AIN511

```
COMD08AB * AIN511 <Date> <Time> <Seqno> OFFL ACG State
The AIN ACG Functionality is now turned OFF .
```

37.3 Example

An example output for log AIN511 is illustrated in the following figure.

Figure 606 Example output for log AIN511

```
COMD08AB * AIN511 Feb01 14:29:13 0602 OFFL ACG State
The AIN ACG Functionality is now turned OFF .
```

37.4 Field descriptions

The following table describes each field in log AIN511.

Table 947 Field descriptions for log AIN511 (Sheet 1 of 2)

Field	Value	Description
Date	mmdd	Indicates month and day

Table 947 Field descriptions for log AIN511 (Sheet 2 of 2)

Field	Value	Description
Time	hh:mm:ss	Indicates hour, minute, second
Seqno	nnnn	the sequence number of this report

37.5 Action

There is no action required.

37.6 Associated OM registers

There are no associated OM registers.

37.7 Additional information

Disable ACG with the ACGONOF command in the AINCI tool.

38 AIN600

38.1 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 finds errors or responses, the system generates additional reports in AIN601 and AIN602 logs.

38.2 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>
```

38.3 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
```

38.4 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.

38.5 Action

No immediate action

38.6 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 finds errors or responses, the system generates additional reports in AIN601 and AIN602 logs.

38.7 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>
```

38.8 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
```

38.9 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).

Field	Value(s)	Description
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.

38.10 Action

No immediate action

38.11 Associated OM registers

Does not apply

38.12 Release history

38.12.1 NA017

This log is modified to support the new meassages and parameters introduced by feature AIN Timeout and Disconnect, (59037100).

39 AIN601

39.1 Explanation

The system generates the AIN601 log when operating company personnel issue the send command to the service control point (SCP) and receive an Connect To Resource (CTR) message from SCP as a response. Operating company personnel generate the send command from the query tool at the TSTQUERY level of the MAP terminal. When the system finds errors or responses, the system generates additional reports.

39.2 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>
```

39.3 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

```

39.4 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.

Field	Value	Description
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.
CTR Message	incoming messages	This field is the SCP response.
<parameters>	incoming message parameters	This field is the value filled in the outgoing message parameter.

39.5 Action

No immediate action

39.6 Associated OM registers

Does not apply

39.7 Release history

39.7.1 Na017

This log is modified to support the new meessages and paramters introduced by feature AIN Timeout and Disconnect, (59037100). Also, AIN601 Log sends a CTR message from SCP as a response (59037140).

40 AIN602

40.1 Explanation

The system generates the AIN602 log when operating company personnel use the send command and find 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).

40.2 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:        ◇
```

40.3 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
```

40.4 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.

40.5 Action

No immediate action

40.6 Associated OM registers

Does not apply

41 AIN610

41.1 Explanation

The advanced intelligent network (AIN) subsystem generates log AIN610 when an ACG control list changes. Changes include the addition or replacement of a control. Log AIN610 indicates the contents of the control, the affected list, and when the addition or the replacement of a control occurred.

Log AIN610 report applies to AIN Essentials and later releases.

41.2 Format

The format for log AIN610 is illustrated in the following figure.

Figure 607 Format for log AIN610

```
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 Essentials on the second line in NA008.

41.3 Example

An example output for log AIN610 is illustrated in the following figure.

Figure 608 Example output for log AIN610

```

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

```

41.4 Field descriptions

The following table describes each field in log AIN610:

Table 948 Field descriptions for log AIN610

Field	Value	Description
Change_Event	CONTROL ADDED or CONTROL REPLACED	indicates when 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 the following: • SCP control list for automatic controls • SMS control list for manual controls
GTA	NPANXXXXXX	the global title address indicates the call or charge number to gap queries on
TT_Name	As entered in table C7GTTYPE, field GTTNAME	the translation type name can indicate a service, a group of services, or a software release, depending on the entry
Duration	numeric	indicates the gap duration in 10-ms units
Interval	numeric	indicates the gap interval in 10-ms units

41.5 Action

There is no immediate action required. Use this report to monitor control list activity or for security purposes.

41.6 Associated OM registers

Group AINACG, register CTRLCHA

41.7 Additional information

Use table LOGCLASS to threshold or suppress the report of this log.

42 AIN611

42.1 Explanation

The advanced intelligent network (AIN) subsystem generates log AIN611 when AIN removes a control from the indicated ACG control list. Log AIN611 generates this report when the AIN subsystem 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 Essentials and later releases.

42.2 Format

The format for log AIN611 is illustrated in the following figure.

Figure 609 Format for log AIN611

```
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.

42.3 Example

An example output for log AIN611 is illustrated in the following figure.

Figure 610 Example output for log AIN611

```

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

```

42.4 Field descriptions

Field descriptions for log AIN611 are provided in the following table.

Table 949 Field descriptions for log AIN611

Field	Value	Description
List_Type	SCP or SMS	Indicates: • 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.

42.5 Action

There is no immediate action required. Use this report to monitor control list activity or for security purposes.

42.6 Associated OM registers

Group AINACG, register CTRLCHA

42.7 Additional information

Use table LOGCLASS to threshold or suppress the report of this log.

43 AIN612

43.1 Explanation

Log AIN612 indicates when the service control point (SCP) control list or service management system (SMS) control list (or both) have been restored (controls removed) as requested. Log AIN612 is generated when controls are removed, either as a result of the service switching point (SSP) receiving an ACG_Global_Ctrl_Restore message from the SCP, or when the SSP restore command ACGRESTORE is invoked.

43.2 Format

The format for log AIN612 is illustrated in the following figure.

Figure 611 Format for log AIN612

```
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: <>
```

43.3 Example

An example output for log AIN612 is illustrated in the following figure.

Figure 612 Example output for log AIN612

```

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

```

43.4 Field descriptions

The following table explains each of the fields in log AIN612

Table 950 Field descriptions for log AIN612

Field	Value	Description
Date:	mmmdd	the date that the log is generated
Time:	hh:mm:ss	the time that the log is generated
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	all controls are removed or all but zero-gap controls are removed (SMS only)
Source	SSP, SCP; PC:nnn-nnn-nnn, SSN:xxx	SSP-initiated (AINCI, ACGRESTORE command) or SCP-initiated restore using ACG_Global_Ctrl_Restore message (where 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 restore request
Number of Controls Deleted	0-512	the total number of controls removed from the control list(s)

43.5 Action

Not applicable

43.6 Associated OM registers

Group AINACG, register CTRLCHA

43.7 Additional information

Not applicable

44 AINT700

44.1 Explanation

The system generates the AINT700 log when the AINTrace tool finds a CTR and CTR clear messages related to the agent or to select messages. The AINT700 log records the CTR messages, and displays the messages in the following formats: TEXT, HEX, and BOTH (TEXT and HEX).

44.2 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 AIN700 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 AIN700 log report for a T_Busy query.

COML013AM AIN700 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 AIN700 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

***** 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"
```

44.2.1 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
  
```

44.2.2 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
```

(continued)

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

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 ***
```

44.2.3 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 AIN700 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
```

44.3 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 and text form.
Text message	Text	This field is the contents of the message in text form.
Hex and text message	Hexadecimal and text	This field is the contents of the message in hexadecimal and text 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).

Action

No immediate action

44.4 Associated OM registers

Does not apply

44.5 Release history

44.5.1 NA017

This log is modified to support the new messages and parameters introduced by feature AIN Timeout and Disconnect, (59037100). Also, AINT700 Log records the CTR messages, and displays the message in the following formats: TEXT, HEX, and BOTH (TEXT and HEX), (59037140).

The following table explains each of the fields in the log report:

Save log AUD650 and use as additional information when the cause of the

45.6 Associated OM registers

Not applicable

45.7 Additional information

Not applicable

46 AUD651

46.1 Explanation

The switch generates log AUD651 when a huge extension block requests a call operation, but a huge extension block is unavailable.

46.2 Format

The format for log report AUD651 follows:

[illegible]

46.3 Example

An example of log report AUD651 follows:

AUD 651 AUG 19 10:15:19 4100 INFO EXT DUMP 0007 0010
FFFF 0000 8694 FDC1 FDC2 FDFD FDFD

46.4 Action

Not applicable

46.5 Associated OM registers

OM group EXT with key BASCPS_HUGE_EXT_BLK is associated with log AUD651.

46.6 Additional information

Not applicable

47 DFIL109

47.1 Explanation

The Datafill (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.

47.2 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
```

47.3 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
```

47.4 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.
TABLE SSPTKINF NOT DATAFILLED; LATA IS REQUIRED	Constant	Indicates that table SSPTKINF does not contain the correct datafill.

47.5 Action

Add the trunk CLLI and LATA number to table SSPTKINF.

47.6 Associated OM registers

There are no associated OM registers.

47.7 Additional information

There is no additional information.

48 DFIL320

48.1 Explanation

The advanced intelligent network (AIN) subsystem generates log Datafill (DFIL)320 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

48.2 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>
```

48.3 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
```

48.4 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.
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.

48.5 Action

Use the routing characteristics to create a tuple in table RTECHAR. Link the tuple to an RCNAME.

Note: Datafill a routing characteristic name in table RCNAME, then reference the name from table RTECHAR.

48.6 Related OM registers

Does not apply

49 Game100

49.1 Explanation

The Advance Intelligent Network (AIN) subsystem contains generic AIN Messaging Environment (GAME). The GAME subsystem generates GAME100 log. The GAME100 log is generated when GAME software encounters a mismatch in handling of specific message type (e.g. R01, R02, DINA etc.). At generation of this log, which indicates that the service switching point (SSP) was unable to send an error message to service control point (SCP). The open transaction is closed as well due to error in handling.

The GAME100 log is for for AIN Essentials and subsequent releases.

49.2 Format

The log report format for GAME100 is as follows:

```
office * GAME100 mmmdd hh:mm:ss seqno INFO GAME_ERR_REPORT
ERR = < >
MSGSET = < >
TRANS BLOCK = < >
```

49.3 Example

An example of log report GAME100 follows:

```
S3_500_17BL CM GAME100 APR04 05:10:16 0504 INFO GAME_ERR_REPORT
ERR = MSGSET MISMATCH
MSGSET = R01
TRANS BLOCK = 434F 204B 203D 4F43 534E 4C4F 2045 3233
4446 4446 6F4C 706F 6465 7020 7461 2064
3137 3846 3135 2020 2020 2020 4520 455F
5252 525F 5045 524F 2054 0000 4120 454C
5452 0420 215F 2494 2141 0003 2141 7788
```

49.4 Field descriptions

The following table describes each field in the log report:

Field	Value	Description
ERR	Text	This describes the error type encountered.
MSGSET	R01, R02, DINA, IN, etc.	This field is the message set in use (for example, AIN Service Enablers).
TRANS BLOCK	Hex Data	This is the data which corresponds to the error that occurred.

49.5 Action

This is an info log. No action is required.

If any drastic call processing problems are seen with this log, then this log provides very valuable information to support engineers.

49.6 Associated OM registers

There are no associated OM registers.

49.7 Additional information

There is no additional information.

Part III Requirements

Part III: “Requirements” consists of the following chapter(s):

Chapter 50: “Product support” on page 827

50 Product support

50.1 General

This chapter describes the product support offered by Nortel Networks for the AIN SE product.

Nortel Networks's AIN Service Enablers product support is provided under standard customer service center (CSC) and global product support (GPS) policies and procedures, when the product approaches GA status.

When the operating company has a problem they cannot resolve, they contact the Nortel Networks regional CSC. The regional prime opens a customer service report (CSR).

The regional prime works the issue with the appropriate specialty group within the CSC, as required. When the problem cannot be resolved at this point, it is referred to the appropriate Nortel Networks GPS group for corrective action or assistance.

Corrective actions consist of workarounds, fixes in future software releases, incremental software updates (patches), documentation changes, or requests for features towards new or changed functionality.

When a problem is resolved, the solution is provided to the customer who authorizes closure of the CSR.

50.2 Customer acceptance

Customer acceptance is generally the result of a successful verification office (VO) on the customer's premises. Nortel Networks and the customer evaluate product performance by executing a series of test cases and an in-service trial. Exceptions to the expected results are documented and prioritized through customer service requests (CSRs) and PRSs. Serious faults are corrected prior to completion of the VO trial. Minor faults can be deferred to a future release. Regulatory approvals generally apply to hardware products, but are not required for software products.

List of terms

This document contains a list of terms used exclusively for advanced intelligent networks (AIN).

Other DMS-100 switch related terms can be found in the reference manual, NTP 297-1001-825, *Glossary of Terms and Abbreviations*.

Numerical entries

0+MDS

See Call Messenger feature.

00Y

A code used to provide information about the calling party when calling address and automatic number identification (ANI) information is not available. 00Y codes are also used when a trunk group comes in from another office that serves more than one numbering plan area (NPA). The 00Y code is mapped to the serving NPA of the calling party. 00Y calls are usually feature group C (FGC) calls.

1+MDS

See Call Messenger feature.

1FR

one-party flat rate line

10FR

ten-party flat rate line

911 Service

Basic 911 Emergency Service

A entries

AAB

abstract syntax notation 1 (ASN.1)

ACM

address complete message

additional functional call (AFC)

A service assigned to a directory number (DN) on a functional terminal, permitting multiple calls to the DN.

address complete message (ACM)

A Common Channel Signaling No. 7 (CCS7) protocol message sent backward that indicates all the address signals required for routing the call to the called party have been received and that the call can be routed.

ADO

ADD option

advanced intelligent network (AIN)

A network designed as a service control architecture that is engaged during basic call processing. Once engaged, predefined logic using a common set of service independent functions directs subsequent call-processing actions. After the service control functions are completed, basic call processing resumes.

AIN is an evolution of the Common Channel Signaling No. 7 (CCS7) intelligent network (IN). By providing generic external influencing of call processing, AIN enables an operating company to create its own services for its subscribers.

advanced intelligent network response (AINRES)

An option for the translation verification (TRAVER) command line that simulates the processing of certain types of responses coming back from the service control point (SCP).

AFR

automatic flexible routing.

AGENTIDX

agent index

AIN

advanced intelligent network

AINDENY

denial of AIN services

AINF

advanced intelligent network (AIN) final treatment

AIN Maintenance parameter (AMP)

Parameter AMP marks and traces test calls and activates logging on selected calls through the network.

AINRES

advanced intelligent network response

ambiguous speed call (AMBISC)

A feature that allows speed call users to dial speed call access codes and abbreviation codes without using the asterisk (*) prefix.

AMP

AIN Maintenance parameter

ASN

See abstract syntax notation.

ASN.1 encoding rules

Rules that specify the representation during transfer of the values of any ASN.1 type. The ASN.1 encoding rules enable the information being transferred to be identified by the recipient as a specific value of a specific ASN.1 type.

ASOC

advanced intelligent network (AIN) software optionality control

AT&T

American Telephone & Telegraph Company

automatic code gap (ACG) message

A type of message parameter that is sent to a service switching point (SSP) to control the rate at which new initiating events are generated. An ACG is used to control congestion.

B entries**basic business group (BBG)**

A feature that provides the basic capabilities for handling a group of lines associated with a single customer. BBG includes provision for special dialing arrangements, special restriction arrangements, and special announcement capability for the switch to recognize the association of the customer's lines as a group.

basic call service view (BSV)

The objective of Basic Call Service View (BSV) is to isolate the AIN application service element (ASE) and its children from the changes in Basic

Session Service (BASS), User Service Agent (USA), and Network Service Agent (NSA) and to encapsulate all agent-specific processing.

basic session service (BASS)

A session transactor that has a basic call root service active.

BASS

basic session service

BBG

basic business group

BCD

binary-coded decimal

Bell operating company (BOC)

Operating company resulting from AT&T divestiture.

binary-coded decimal (BCD)

A numerical system in which each digit of a decimal number is expressed separately as a 4-bit binary number.

BKG

background class

BLF

Busy Lamp Field

BOC

Bell operating company

BRISC

Bell-Northern Research (BNR) reduced instruction set computing

BSV

See Basic Call Service View.

Business Set Short Hunt

A feature that allows incoming calls to hunt through a set of directory numbers (DN) for an idle DN on which to terminate. The set of DNs can be either standard DN appearances or multiple-appearance DNs, and the set can include all or a subset of the DNs on a Meridian business set (MBS).

C entries

Call Forwarding Group Don't Answer (CFGD/CFGDA)

A feature that allows calls to idle hunt group members to be forwarded if the call is not answered within a certain amount of time.

Call Forwarding Programming (CFWP)

The process that directs incoming calls to a predetermined telephone number.

Call Forwarding Remote Access (CFRA)

A feature that allows a user with Call Forwarding Universal (CFU), Call Forwarding Intragroup (CFI), or Call Forwarding Fixed (CFF) to activate CFU, CFI, or CFF from a remote line through direct inward system access (DISA).

Call Forwarding Validation (CFWVAL)

A feature that provides a means of verifying whether a line has successfully forwarded when a user activates Call Forwarding. There are two variants of CFWVAL: (1) termination validation, which checks that a call completes to the forward number; (2) routing validation, which sends a confirmation tone when the system determines that the call routes successfully and call forwarding is activated.

call hold (CHD)

A feature that is available to Meridian Digital Centrex (MDC) end-users with 500/2500 sets. The feature allows an end-user to hold one call for any length of time. This feature is activated by dialing a feature code (for example, *9) after a switchhook flash.

Call Party Handling (CPH)

The Call Party Handling(CPH) capabilities provide support for basic mid-call event processing for 2-party and 3-party calls.

Calling Line Number Display (CLIDSP)

An option that allows the end-user to control the format of the calling line address on business set displays.

Calling Name and Number Display (CNND)

A feature that is activated by the user and indicates that the user's name and directory number can be displayed at the terminating set.

Calling Name Delivery (CNAMD)

A feature that displays the name of the calling party on the called party's set if the called set has a suitable display window.

Calling Name Delivery Blocking (CNAB)

A Custom Local Area Signaling Service (CLASS) feature that allows subscribers to control, for each outgoing call, whether their name is displayed on the set of the called party.

calling party ID

calling number

A feature that allows an end-user to access a messaging service after an unsuccessful local or 1+ toll call. The feature routes the end-user's call from the end office (EO) to either a Traffic Operator Position System (TOPS) switch or an interexchange carrier's (IEC) service gateway where the messaging service system is connected. The end-user can then leave a message for a recipient through the messaging service. This feature is also known as 1+MDS and it compliments the 0+MDS feature.

call processing (CP)

The function of DMS-100 call-processing software is to establish connections among telephony agents. A number of functional steps are required to process a call, such as detecting the incoming call, receiving digits, analyzing (translating) digits to determine call destination, selecting terminating agent, establishing connection, signaling to and detecting an answer from the terminating agent, and detecting disconnect.

Call Screening/Monitoring Intercept (CSMI)

A feature that provides subscribers of a network-based answering service (NBAS) with a means of monitoring and intercepting calls that are being handled by the NBAS.

call segment (CS)

A functionally separate call portion in a service switching point (SSP) that is accessible to a service control point (SCP) or adjunct through a connection view (CV). For a two-party call, a CS consists of either the originating or terminating call portion in the AIN switch. For a multiparty call, a CS consists of multiple originating and terminating call portions merged together in the SSP for one end-user.

call segment association (CSA)

A relationship between two call segments (CS) of different calls in a service switching point (SSP) for the same end-user. The SSP establishes the relationship if the two CSs share a common controlling leg or if the leg status of the controlling leg is "pending" in one CS and is anything but "pending" in the other CS (that is, the end-user or virtual party supported by the leg is only actively participating in one CS at a time).

call segment identifier (CSID)

A number that identifies a call segment (CS).

call transfer (CXR)

A feature that allows a subscriber to instruct the switching equipment or operator to transfer any incoming calls to another station.

call type (CT)

An option used to specify which type of call (for example, voice or data) may trigger and send a query message.

call waiting origination (CWO)

A Meridian Digital Centrex (MDC) feature that allows an originating line to impose a call waiting tone on a busy called line.

capability set 1 (CS-1)

The first set of advanced intelligent network (AIN) capabilities to be standardized by CCITT/ITU-T. CS-1 is documented in the *CCITT/ITU-T Intelligent Network (IN) Recommendations (Q.1200-series)*.

carrier access code (CAC)

A set of three digits designating the inter-LATA or international carrier (INC) that handles a call. Also known as carrier identification digits.

CBE

Call Forwarding Busy (CFB) Exclude Intragroup

CBECBU

Call Forwarding Busy (CFB) Exclude External Originators/Unrestricted Forwarding

CBI

Call Forwarding Busy (CFB) Block Intragroup

CBICBU

Call Forwarding Busy (CFB) Intragroup Deny Unrestricted

CBQ

Call-Back Queuing

CBU

Integrated Business Network (IBN) Call Forwarding Busy Unrestricted

C-bus

channel bus

CDAR

Customer-Dialed Account Recording

CDCL

Code Calling

CDE

Call Forwarding Don't Answer (CFD) Exclude Intergroup

CDECDU

Call Forwarding Don't Answer (CFD) Exclude External Originators/Unrestricted Forwarding

CDI

Call Forwarding Don't Answer (CFD) Exclude Intragroup

CDPCODE

Customized Dialing Plan Code

CDPFAC

Customized Dialing Plan Feature Access Code

CD-ROM

compact-disk, read-only memory (CD-ROM)

CDT

Custom Integrated Business Network (IBN) Disconnect Treatment (CDT)

CDU

Integrated Business Network (IBN) Call Forwarding Don't Answer Unrestricted

CFBL

Call Forwarding Busy Line

CFGDA

Call Forwarding Group Don't Answer

CFK

Call Forwarding on a Per-Key Basis

CFMDN

Secondary Multiple Appearance Directory Number Call Forwarding

CFRA

Call Forwarding Remote Access

CFS

Integrated Business Network (IBN) Call Forwarding Simultaneous/Screening

CFWP

Call Forwarding Programming

CFWVAL

Call Forwarding Validation

CFXU	Universal Access to Call Forwarding
CH	consultation hold
channel bus (C-bus)	A proprietary duplicated time division multiplexed (TDM) bus. The C-bus interconnects network interface units (NIU) with link interface units (LIU).
CHD	call hold
CHG	charge option, basic rate access functional set (BRAFS)
CI	Collect Information
CIC	Carrier Identification Code
CIDB	Calling Identity Delivery Blocking
CIDS	Calling Identity Delivery and Suppression
CIFR	Call_Info_From_Resource message
CITR	Call_Info_To_Resource message
CLASS—Message Waiting Indicator Ring Notification (CRN)	A feature that provides periodic ringing for Station Message Waiting (MWT) subscribers with CLASS Message Waiting Indicator (CMWI) notification. CRN is a combination of stuttered dial tone, immediate ringing, and periodic ringing.
CLIDSP	Calling Line Number Display
CMCF	Controlled Multiple Call Forwarding

CNA

Calling Number Announcement

CNAB

Calling Name Delivery Blocking

CNAMD

Calling Name Delivery

CNDBO

Calling Number Delivery Blocking Override

CNF30

Super Conference

Code Restriction (CRL)

A feature that denies or allows selected station lines and network-access trunks the ability to complete outgoing-exchange network calls based on the dialing pattern. The restricted calls are routed to an attendant, an announcement, or a tone on an individual end-user basis.

compact-disk, read-only memory (CD-ROM)

A compact disk adapted for home entertainment that is capable of storing video and audio data in digital format for playback through a computer. Data bits are stored as microscopic pits on the disk and are read by a laser beam.

connection view (CV)

A connection view (CV) provides a service platform with a generic representation (that is, view) of switch call-processing resources. CV processing, within the switch, can be viewed as translating external instructions into operations that are understood by internal switch call processing as well as translating internal call-processing events and the state of internal call-processing resources into information that is understood by external devices such as a service control point (SCP) or adjunct. The switch call-processing resources are described by a set of CV objects, which include the following: call segment association (CSA), call segment (CS), legs, connection point (CP), basic call model (BCM) composed of points in call (PIC) and detection points (DP), CV-related timer, and CV-related monitors.

controlling leg

The leg closest to the access side of the call. For an originating call portion, the controlling leg is the calling party. For a terminating call portion the controlling leg is the called party. Access signaling on this leg can directly control the progress of the call. In a call segment, only one leg is directed toward the originating or a terminating access and it is the controlling leg. *See also* passive leg, and leg.

conversation package

A transaction capabilities application part (TCAP) package expecting a reply. The service control point (SCP), or adjunct, sends a conversation package to the service switching point (SSP) that instructs the SSP to perform an activity and send a reply to the SCP. The SSP can also send a conversation package to the SCP. *See also* TCAP package.

cookbook

A document that provides datafilling examples for the advanced intelligent network (AIN) service switching point (SSP). The examples are organized by trigger and response type.

CPG

Call Progress

CR

Cancel Resource

CS

call segment.

CS-1

capability set 1

CSA

call segment association

CSID

call segment identifier

CSMI

Call Screening/Monitoring Intercept

CT

call type

CTM

conference trunk module

CTR

connect to resource

CTW

Call Transfer Warning

Customer-Dialed Account Recording (CDAR)

A feature that allows variable-length account codes to be entered on a per-call basis, along with predefined prefix digits to be prefixed to the calling number. This feature is not compatible with the off-hook immediate trigger.

customer dial plan (CDP)

A trigger that can be subscribed by a customer group assigned to a customized dialing plan. This triggering criteria is met when an access code, extension number, or vertical service code within a customized dialing plan is dialed. It is applicable to the information analyzed trigger detection point (TDP).

Custom Integrated Business Network (IBN) Disconnect Treatment (CDT)

A feature that allows the operating company to assign a disconnect treatment to a Meridian Digital Centrex (MDC) line on an individual directory number (DN) basis.

CUTTD

Cut-Through Dialing

CV

connection view

CWC

Call Waiting Chaining

CWD

Dial Call Waiting

CWI

Call Waiting Intragroup

CWX

Call Waiting Exempt

D entries**DCBI**

directed call pickup with barge-in

DCBU

directed call pickup with non-barge-in

D-channel

A channel that carries call control messages between a terminal on an integrated services digital network (ISDN) interface and the exchange termination. Call control messages are used to set up, maintain, or clear a

circuit-switched call on a B-channel. The D-channel also carries low-speed packet data between a terminal on an ISDN interface and a terminal in the packet data network. For a primary rate interface (PRI), the D-channel is a 64-kbit/s bidirectional channel. *See also* Bb channel, basic rate interface (BRI), and primary rate interface (PRI).

DCP

deferred call processing

DCPK

Directed Call Park

DCPU

directed call pickup

DCR

Dynamic Call Routing

Denied Incoming (DIN)

Because the DIN feature is a customer group-based feature, any calls coming in from outside the customer group are denied. Any calls that are not considered intragroup as defined in Integrated Business Network (IBN) translations are denied even if the originator and terminator are in the same customer group.

Denied Termination (DTM)

A feature that prevents a line receiving calls. The line can only originate calls.

detection point (DP)

A point in basic call processing, as modeled by the basic call model (BCM), that identifies when a service control point (SCP) or adjunct can receive a report of a given event and influence subsequent call-processing. DPs are located at transitions between points in call (PIC) in the BCM. Two types of DPs exist: trigger detection points (TDP) and event detection points (EDP). *See also* trigger detection point (TDP), event detection point (EDP), point in call (PIC), and exit event.

DG

digits dialed

Dialable Directory Number (DDN)

A feature that enhances the Calling Number Delivery (CND) feature. DDN displays the calling number in a format that allows the user to return a call easily.

digits dialed (DG)

An option used to specify which digits must be dialed for a call to trigger and send a query message.

DIN

Denied Incoming

directed call pickup with barge-in (DCBI)

A feature that allows the Meridian Digital Centrex (MDC) subscriber to barge in and connect to an incoming call intended for another line in the same customer group and served by the same DMS-100 switch.

directed call pickup with non-barge-in (DCBU)

A feature that allows a subscriber to answer an incoming call that is ringing another line in the same customer group and served by the same DMS-100 switch.

distributed intelligent network architecture (DINA)

DINA is the advanced intelligent network (AIN) architecture for the DMS-250 switch.

Distributed Line Hunt (DLH)

A hunting arrangement that consists of lines divided into groups. The hunt is sequential over all groups until a line in an available group is selected.

DLH

Distributed Line Hunt

DMS

Digital Multiplex System

DMS-SCP

service control point

DMS-SSP

service switching point

DOR

Denied Origination

DP

detection point
dial pulse

DQS

Display Queue Status

DQT	Display Queue Status
DRING	Distinctive Ringing
DRU	development release unit
DS-3	A 44.6-Mbit/s digital signal comprised of 28 multiplexed DS-1 signals.
DSCWID	Spontaneous Call Waiting Identification with Disposition
DTMF	dual tone multi frequency
Dynamic Call Routing (DCR)	A technique that changes call-routing patterns depending on the network load. DCR provides significant cost efficiencies, increased flexibility, and increased network survivability in comparison to traditional, hierarchical call routing.
E entries	
EAMF	equal-access multifrequency
EAP	equal access plan
EBO	executive busy override
EBOM	Executive Busy Override on Multiple Appearance Directory Number
EDP	event detection point
EDP-N	event detection point (EDP), and notification
EDP-R	event detection point (EDP), and request

EDRAM

enhanced digital recorded announcement machine

EHL D

electronic key telephone service (EKTS) hold for use by Service Order System (SERVORD)

EMW

Executive Message Waiting

encapsulation

object-oriented programming

end-office display (EOD)

An option that provides the capability to display the calling party number and the dialed 800 number by the calling party on Call Management Service (CMS) and Custom Local Area Signaling Service (CLASS) terminals.

end-user

An addressable network user (business or residential) who employs either analog, public switched data service (PSDS), or integrated services digital network (ISDN) access-signaling arrangements.

enhanced outward wide area telephone service (EOW)

A wide area telephone service (WATS) available in the residential services environment that provides outward WATS for equal-access end offices (EAE O).

enhanced two-way WATS (ETW)

enhanced two-way wide area telephone service

enhanced two-way wide area telephone service (ETW)

A wide area telephone service (WATS) available in the residential services environment that combines enhanced outward wide area telephone service (EOW) and inward wide area telephone service (INWATS) line class code capabilities.

EOD

end-office dialing. *also* end-office display

equal-access multifrequency (EAMF)

A type of trunk signaling in the equal-access feature group B environment that translates and turns a call into the correct carrier.

escape code (ESC)

An option used to specify that only calls in which an escape code has not been dialed may trigger and send a query message.

escape coin (ESCCN)

An option used to specify which call types should escape this trigger. This option only affects coin line originated calls and may only be datafilled for the Specific_Digit_String (SDS) trigger.

escape DN (ESCDN)

An option used to specify that calls to a directory number (DN) that resides on the switch should not trigger. This option may only be datafilled for the Local Number Portability (LNP) trigger.

escape equal access (ESCEA)

An option used to specify that equal access calls should not trigger. This option may only be datafilled for the Specific_Digit_String (SDS) trigger.

escape operator (ESCOP)

An option used to specify that calls going to an operator should not trigger. This option may only be datafilled for the Specific_Digit_String (SDS) trigger.

ESCCN

escape coin

ESCDN

escape DN

ESCEA

escape equal access

ESCOP

escape operator

ESCO

emergency service central office number

ETW

enhanced two-way wide area telephone service

event detection point (EDP)

A point in basic call processing, as modeled by the basic call model (BCM), that can be armed by the receipt of a Request_Report_BCM_Event message from the service control point (SCP) or adjunct. The EDPs are located at transitions between points in call (PIC). EDPs can be armed as requests (EDP-R) or notifications (EDP-N). When the requested event occurs, the switch reports it to the SCP or 'adjunct. *See also* detection point (DP), trigger detection point (TDP), point in call (PIC), requested event, request, and notification.

EWAL

enhanced wide area telephone service (WATS) access line

executive busy override (EBO)

A feature that enables an end-user on a Meridian Digital Centrex (MDC) line to gain access to a busy line in the MDC group.

Executive Busy Override on Multiple Appearance Directory Number (EBOM)

A feature that allows a caller to barge in on a call involving Multiple Appearance Directory Number (MADN) Selective Call Acceptance (SCA) or MADN multiple call arrangement (MCA), but only if the calling party and called party are in the same customer group.

Executive Conference (MMCONF150)

A feature that provides enhancements to the Meet-me Conference feature. It provides the following optional capabilities for a Meet-me Conference; allows a Meet-me Conference size of up to 150 participants (the previous limits were 6 or 30 participants); provides feature access codes to lock and unlock access to the conference (previously, the only method of conference control was by hookswitch flash); and allows the controller of the conference to add new conferees without assistance from the attendant.

Executive Message Waiting (EMW)

Executive Message Waiting (EMW) consists of three features: Message Service—Message-List Editing; Message Service—Leave Message; and Call Request Enhancement.

Together, these three features enable end-users to leave and retrieve messages at a Meridian business set (MBS) with display.

expanded Bellcore AMA format (EBAF)

expanded Bellcore automatic message accounting format

extended VANC

extended voice-activated network control

extended voice-activated network control (VANC)

A service that encompasses the capabilities provided by initial VANC, while adding the ability to use voice commands to edit lists for services, such as Selective Call Forwarding (SCF), or to request the status of subscribed features (for example, active or inactive). Extended VANC is under consideration for the future. *See also* initial voice-activated network control (VANC), voice-activated network control (VANC), and voice-activated dialing (VAD).

F entries

FAC

feature access code

facsimile (FAX)

A system of transmitting and reproducing graphic matter, such as printing or still pictures, by means of signals sent over telephone lines. Also, the copy produced by such a system.

FAX

facsimile

FAX Messaging Platform (FMP)

The FMP stores facsimiles (FAX) which have been forwarded from the FAX-Thru Service (FTS) when FTS detects a busy or no-answer condition. The FMP will ensure that the FAX is transmitted from storage to the original destination when the destination FAX machine is available. *See also* FAX-Thru Service (FTS).

FAX-Thru Service (FTS)

The FTS feature is a Special Delivery Service (SDS) enhancement which upon detection of a busy or no-answer condition allows routing of a facsimile (FAX) call to a FAX Messaging Platform (FMP). *See also* FAX Messaging Platform (FMP), and Special Delivery Service (SDS).

feature

A unit of one telecommunications-based capability that can be provided to an end-user.

feature access code (FAC)

A code used by subscribers for controlling and accessing custom calling services.

feature activator (FA)

The key on an integrated services digital network (ISDN) stimulus terminal with circuit-switched service that activates supplementary features such as Ring Again (RAG).

feature group A (FGA)

A plan for the generation of a billing record for a terminating feature group call.

feature group B (FGB)

A plan that allows an equal-access end office (EAEO) or a non-EAEO to provide subscribers with access to FGB carriers. To use this plan, the subscriber must dial 950-WXXX.

feature group C (FGC)

A plan for equal access (EA) that implements the equal access plan (EAP) with the following exceptions: it uses FGC signaling (predivestiture signaling) and it uses additional trunk group types.

feature group D (FGD)

A plan for equal access (EA) that implements the equal access plan (EAP).

FGA

feature group A

FIE

facility information element

FIG

Flash Ignore

Fire Reporting System (FRS)

A feature that is required for lines that interface with dial dictation equipment, which sends off-hook signals back to the switch.

Fire Reporting System, Origination (FRO)

Software that indicates, at a remote location, the busy or idle status of a line. The FRO operates a signal distribution point for each call originating from or terminating to a line that has the FRO enabled.

Flash Ignore (FIG)

A feature that causes the switching unit to ignore the flash signal from that line.

FLEXI

Flexible Intercept

Flexible Intercept (FLEXI)

A feature that allows for the automatic rerouting of calls that cannot be completed because of equipment limitations, imposed restrictions, or dialing irregularities. Calls are routed to the attendant, a tone, or an announcement.

FMP

FAX Messaging Platform

FSM

finite state machine

FTS

FAX-Thru Service

FXR

Fast Call Transfer

G entries**GAME**

generic AIN message encoder/decoder

generic AIN message encoder/decoder (GAME)

A part of the advanced intelligent network (AIN) service switching point (SSP) platform. GAME provides messaging capabilities for AIN applications, which include encoding the data passed by an application and sending the encoded message to an external database (service control point [SCP] or adjunct); and receiving a message from the external database (SCP or adjunct), decoding it, and returning the result to the application.

global title address (GTA)

An address, such as dialed digits, that does not explicitly contain information that would allow routing in the signaling network (that is, the translation function of the service control point (SCP) is required). Formerly known as global title value (GTV).

global title value (GTV)

See global title address (GTA). GTA replaces GTV in current documentation. This is consistent with efforts to standardize common channel signaling (CCS) terminology.

GMS

Generic Multiplexing Service

GOS

grade of service

GPS

Global Product Support

GTA

global title address

GTV

global title value

H entries

harmonic ringing

A system of selectively signaling several parties on a party line by using a different frequency and a specially tuned ringer for each party. The frequencies are harmonics of $16\frac{2}{3}$ Hz and 25 Hz as follows: $16\frac{2}{3}$ Hz, 25 Hz, $33\frac{1}{3}$ Hz, 50 Hz, and $66\frac{2}{3}$ Hz. *See also* frequency selective ringing (FSR).

HCB

history control block

HDB

history data block

HF

hands-free unit

HFMUTE

combined hands-free/mute

HLD

permanent hold

I entries**IAM**

initial address message.

ICMSG

Intentional Call Messenger

IDDD

international direct distance dialing

IEC

interexchange carrier

IECFB

Internal/External Call Forwarding Busy Denied

IECFBCBU

Internal/External Call Forwarding Busy Unrestricted

IECFD

Internal/External Call Forwarding Don't Answer Denied

IECFDCDU

Internal/External Call Forwarding Don't Answer Unrestricted

INAP

intelligent network application protocol

incremental software delivery (ISD) process

A process that enables a service to be delivered to a product without the need for a complete batch change supplement (BCS).

initial address message (IAM)

The first message in a call (connection oriented or connectionless) that contains information required to route the call to its destination.

initial voice-activated network control (VANC)

A service that allows simple activation and deactivation of vertical services by speaking one of a limited set of service names. Initial VANC is an AIN 0.2 service driver. *See also* extended voice-activated network control (VANC), voice-activated network control (VANC), and voice-activated dialing (VAD).

intelligent network application protocol (INAP)

A protocol developed by the European Telecommunications Standards Institute (ETSI) for the European intelligent network (IN). It defines the protocol required for the support of capability set 1 (CS-1).

Intentional Call Messenger (ICMSG)

A feature that automatically allows callers to leave messages for the parties of their choice. Callers do not have to attempt to reach the message recipient beforehand.

IP

intelligent peripheral

IPUI

intelligent peripheral user interaction

IRR

Inhibit Ring Reminder

ISDN

integrated services digital network (ISDN) interface

ISDNUP

ISDN user part

IT

inter-toll dialing. *also* inter-toll trunk (IT)

K entries

Keyset Short Hunt Group (KSH)

A feature that allows calls to hunt from one directory number (DN) to another on the same keyset.

Key Short Hunt (KSHUNT)

KSHUNT provides information to operating companies on the use of the Business Set Short Hunt feature. *See also* Business Set Short Hunt.

KSH

Keyset Short Hunt Group

KSHUNT

Key Short Hunt

KSMOH

Key Set Music on Hold

L entries

LCO

Local Coin Overtime

LDA

Long Distance Alert.

LDAE

Long Distance Alert Enhancement

LDS

Long Distance Signal

leg

A communication path from a connection point toward an end-user.

LEN

line equipment number

LIF

logical interface

line appearance on a digital trunk public safety answer point (LDTPSAP)

One of three types of public safety answering points (PSAP), LDTPSAP makes use of line appearance on a digital trunk (LDT) software. It is connected through a trunk interface that receives automatic number identification (ANI), but LDTPSAP appears to the central control (CC) as a hunt group line. *See*

also line appearance on a digital trunk (LDT), line-ended PSAP (LINEPSAP), public safety answering point (PSAP).

line class code (LCC)

An alphanumeric code that identifies the class of service assigned to a line.

local primary interexchange carrier (LPIC)

A feature that allows Subscriber Services subscribers to choose a primary carrier for intra-LATA service. *See also* primary interexchange carrier (PIC).

Long Distance Alert (LDA)

A feature that provides end-users with an indication of an incoming call by providing distinctive ringing or distinctive call waiting tones on the called line. The operating company may specify a time-out period within which the called party must respond to the LDA distinctive call waiting tones. If the called party does not respond within that period, the call is routed to the No Terminal Responding (NTRS) treatment. If no time-out is specified, the behavior is the same as the regular call waiting feature. The LDA feature notifies end-users of incoming toll calls in both the on-hook and off-hook conditions. *See also* Long Distance Signal (LDS).

Long Distance Alert Enhancement (LDAE)

LDAE enhances the Long Distance Signal (LDS) feature by introducing the following functions: ability to provide LDS as a ring, tone, or a ring and tone line option; ability to specify the duration of the time-out for call waited calls; and the ability to specify whether distinctive alerting is provided when no CallingLineID (CLID) is delivered.

Long Distance Signal (LDS)

A feature that provides end-users with distinctive ringing or distinctive call waiting tones on the called line to indicate an incoming toll call. *See also* Long Distance Alert (LDA).

M entries**M536**

A 36-button add-on module for a Meridian business set.

Make Busy Key (MBK)

A feature that creates a Make Busy Key (MBK) line option. When the MBK option is assigned, a scan point circuit, which is controlled by an external key, is associated with the line. The external key is used to activate the MBK line option. The MBK function allows the set, to which MBK is assigned, to appear as if it is busy with respect to call forwarding (CF).

MAN

Manual Line (MAN)

Manual Line (MAN)

A manual service line option that is similar to the Automatic Line (AUL) feature except that the originator is always connected to the operator. *See also* Automatic Line (AUL).

MAP command interpreter (MAPCI)

A CI at the MAP level for accessing maintenance and other functional levels. *See also* command interpreter (CI).

MBG

Multilocation Business Group

MBK

Make Busy Key (MBK)

MBSCAMP

Meridian business set (MBS) Station Camp On

MCDN

Message Center Directory Number

MDE

message departure element

MDM

multiple data message

MDNNAME

Multiple Appearance Directory Number (MADN) Member Name Display

MDR

message detail recording

Meet-me Conference (MMC)

A feature that allows end-users to meet in a conference call by dialing a Meet-me Conference directory number (DN) at an agreed-upon date and time. *See also* Executive Conference (MMCONF150), and Super Conference (CNF30).

MEMDISP

directory number (DN) network attribute Multiple Appearance Directory Number (MADN) Member Display option

Meridian ACD (MACD) with CompuCALL options

An application that allows the concurrent delivery of voice calls and data from the user's host computer to an answering automatic call distribution system (ACD) agent.

message parameters

Parameters that are within a message. Each message type has its own set of mandatory and optional parameters.

message switch (MS)

A high-capacity communications facility that functions as the messaging hub of the dual-plane combined core (DPCC) of a DMS SuperNode processor. The MS controls messaging between the DMS-bus components by concentrating and distributing messages and by allowing other DMS-STP components to communicate directly with each other.

message waiting query (MWQRY) key

The message waiting query key on an electronic business set (EBS).

MF

multifrequency

MLAMP

Multiple Appearance Directory Number Lamp

MLH

Multiline Hunt

MLHG

Multiline Hunt Group

MLVP

Multiline Variety Package

MMC

Meet-me Conference

MMCONF150

Executive Conference

MPB

Multiparty Bridge

MPH

Multiple Position Hunt

MREL

Multiple Appearance Directory Number Release

MRF

Multiple Appearance Directory Number (MADN) Ring Forward

MSBI

Make Set Busy Intragroup

MSC

message sequence chart

MULTICFA

Multiple Call Forwarding for Call Forwarding Universal (CFU)/Call Forwarding Intragroup (CFI)

MULTICFB

Multiple Call Forwarding Busy

MULTICFD

Multiple Call Forwarding Don't Answer

multifrequency (MF)

A signaling method that makes use of pairs of standard tones to transmit signaling codes, digit pulsing, and coin-control signals. This method is used by interregister signaling on analog trunks. *See also* interregister signaling.

Multiple Appearance Directory Number Lamp (MLAMP)

An option that is recommended for Multiple Appearance Directory Number (MADN) groups that need to know when a call is bridged or on hold which makes the call available to other MADN group members. When a call is not bridged, and the MADN group member invokes autohold, the lamp winks to indicate that the call is on hold and any MADN group member can pick up the call.

Multiple Appearance Directory Number, multiple call arrangement (MADN-MCA)

A Multiple Appearance Directory Number (MADN) configured so that more than one telephone set can be active simultaneously. *See also* multiple call arrangement (MCA).

Multiple Appearance Directory Number Release (MREL)

In a typical Multiple Appearance Directory Number (MADN) Selective Call Acceptance (SCA) call scenario, multiple MADN members are involved in a bridged call with an external party. When the external party disconnects, the MADN members remain in a bridged call. MREL changes this functionality so that when the external party disconnects, the bridge is taken down and the MADN members are automatically disconnected.

Multiline Hunt (MLH)

A feature that routes each call to a line in a hunt group by trying each line in a numerical sequence until the call is answered. All calls start at a single directory number (DN), which is known as the pilot. No other lines in the hunt group have DNs.

Multiway Call

A set of features that allow a subscriber to set up conference calls. The Multiway Call features supported are Three-way Call (3WC), Super Conference (SUPERCONF), and Executive Conference. *See also* Three-way Calling (3WC), Super Conference (CNF30), and Executive Conference (MMCONF150).

MUMR

multi-unit message rate

MUTE

Mute feature

MWIDC

message waiting indication

MWQRY

See message waiting query.

N entries**N11**

A generalization of the dialing codes for special services, such as 411 for information services, 611 for telephone repair services, and 911 for emergency services.

NAC

non-area code, network administrative center

Name and Reason Display (REASDISP)

A feature that allows a name and reason to be displayed for incoming and outgoing calls on a Meridian business set (MBS) with display. Parties originating a call are able to see the name of the called party. Parties receiving a call are able to see the name of the calling party.

NANP

North American Numbering Plan

NARS

network access registers

NBAS

network-based answering service

NCRB

non-call-related base

NEL

next event list

network elements

Processor-controlled entities of the telecommunications network that primarily provide switching and transport network functions and contain network operations functions. Examples are non-AIN switching systems, digital cross-connect systems, AIN switching systems, and signal transfer points (STP).

network ring again (NRAG)

A feature that allows Meridian Digital Centrex (MDC) end-users who encounter a busy anywhere in their customer group to call that station again automatically.

network service agent (NSA)

An NSA is an object that is encapsulated by an active service element's (ASE) service agent. An NSA, in turn, encapsulates a network service protocol (NSP) and, within sessions, a remote bearer channel (RBC). An NSA thus provides a focal point for managing network-side signaling and connection functions.

network service protocol (NSP)

An NSP is a service protocol object that is encapsulated by a network service agent (NSA).

network systems

Processor-controlled entities of the telecommunications network that provide ancillary network functions and contain network operations functions. Examples are service control points (SCP), adjuncts, and intelligent peripherals (IP).

next event list (NEL)

A list of requested events associated with an open transaction that is maintained at the switch. The service control point (SCP) or adjunct requests these events using the Request_Report_BCM_Event message. *See also* requested event, and event detection point (EDP).

NFA

Network Facility Access

NFRA

Speech-activated Intelligent Dialing (SAID) remote access

Night Service Directory Number (NSDN)

An option that allows calls to be rerouted either to a predetermined directory number (DN) or to a busy signal when the consoles are unattended.

NI-2

national ISDN-2

No Receiver Off-hook Tone (NOH)

A feature that prevents a line from receiving a receiver off-hook tone when the line has a permanent signal or partial dial tone.

Nortel

See Nortel Networks.

Nortel Networks

Nortel Networks is a global leader in telephony, data, wireless and wireline solutions for the Internet. (Nortel Networks was previously called Nortel, and Northern Telecom [NT].)

North American Numbering Plan (NANP)

A numbering plan for the Public Switched Telephone Networks (PSTN) of the United States, Canada, northern Mexico, and the Caribbean. The plan divides each region into geographical areas. Each geographical area has its own distinctive three-digit area code, and no two telephone subscribers in the same area code will have the same seven-digit telephone number. *See also* numbering plan area (NPA), and public switched telephone network (PSTN).

Northern Telecom

See Nortel Networks.

notification

An event whose detection causes the switch to report the event to the service control point (SCP) or adjunct without halting the call processing. *See also* switch notification message, and request.

NPASPLIT

numbering plan area (NPA) split

NPI

numbering plan indicator

NRAG

network ring again

NRS

Network Resource Selector

NSA

network service agent

NSDN

Night Service Directory Number)

NT

See Nortel Networks.

NTNA

Northern Telecom North America

NTRS

No Terminal Responding

numbering plan indicator (NPI)

The directory number (DN) for primary rate interface (PRI) trunks that is used to populate the USERID parameter in the format of PUBLIC and TEN-DIGITS.

NXID

number exchange identification

O entries

OA

operations applications

OAM

operation, administration, and maintenance

OBC

originating basic call

OBCM

originating basic call model

object

A self-contained module of data and its associated processing.

object-oriented programming (OOP)

A programming technology that is more flexible than standard programming. It is a form of modular programming that allows pieces of software to be reused and interchanged between programs.

C++ is becoming the mainstay OOP language, because it combines traditional C programming with object-oriented features.

object-oriented (OO) technology

A paradigm that views the world as objects rather than as procedures. Object-oriented analysis (OOA), object-oriented design (OOD), and object-oriented programming (OOP) employ the concepts of encapsulation, classification, and inheritance. *See also* object-oriented programming (OOP).

OC-1

optical carrier 1

OCM

originating call model. *See* originating basic call model (OBCM).

off-board processor

A generic term for a service control point (SCP) or adjunct.

off-board processor service view (OSV)

The AIN Essentials off-board processor service view (OSV) contains the behavior for communicating with the generic environment for messaging on the switch. The AIN Essentials OSV establishes a signaling channel, determines the parameters needed to be sent in query messages, creates parameter objects of a signaling message and a protocol-independent set of messages (PRISM), sends messages to signaling channels, receives response messages, validates the response messages received, destroys signaling channels, and passes signaling messages to the AIN Essentials application service element (ASE) for processing. The AIN Essentials OSV encapsulates much of the behavior required to send and receive signaling messages, which allows the AIN Essentials ASE to concentrate on processing responses.

OFFHKDEL

off-hook delay (OHD)

OFS

overflow register, software

OHD

off-hook delay. Also known as OFFHKDEL.

OHI

off-hook immediate. Also known as OFFHKIMM.

OHQ

off-hook queuing

OLS

originating line select

OLI

originating line information

OOS

out of service

Open Systems Interconnection (OSI)

A seven-layered communications protocol of the International Organization for Standardization (ISO) that is intended as a public reference model of a framework that would permit network communications among many dissimilar types of devices. The physical, data link, network, and transport layers of the OSI protocol govern the interactions among the networks that transmit information. The session, presentation, and application layers govern the preparation of information for transmission and the processing of received information for storage or use. In theory, any OSI-compatible devices could use an OSI-compatible network to exchange information.

operations applications (OA)

A class of functions that provide provisioning, administration, maintenance, and management capabilities for network elements, network systems, software and services (for example., assessment of service quality over the group of systems and software that support the service). These functions usually reside in operations systems, but they can be assigned to network elements or to network systems based on the decisions of the local exchange carrier (LEC).

optical carrier 1 (OC-1)

In the synchronous optical network (SONET), OC-1 specifies the optical form of the basic 51.84-Mbit/s SONET communications channel. *See also* synchronous optical network (SONET), and synchronous transport signal 1 (STS-1).

originating line information (OLI)

Information about the calling party's directory number (DN).

OS

operations system. *See also* operations applications (OA).

OSA

operator system access

OSDN	originating station directory number
OSI	Open Systems Interconnection
OSS	Operator Services System
OSTY	originating station type
OSV	off-board processor service view
out of service (OOS)	An equipment state in which equipment is removed from service either automatically (by the system) or manually (by personnel).
P entries	
passive leg	The leg furthest from the access side of the call. For an originating call portion, the passive leg is the called party. For a terminating call portion, the passive leg is the calling party. There is no access signaling on a passive leg that directly controls the progress of a call. For each passive leg there is an originating basic call model (OBCM) or a terminating basic call model (TBCM) that supports the connection view (CV). <i>See also</i> controlling leg, and leg.
passive service element (PSE)	A passive service element contains the persistent and provisioned data required to support a service. A PSE resides in the resource layer and it is provisioned against a specific resource file.
PBL	Meridian business set (MBS) individual business line
PBM	private branch exchange message rate
PCL	product CM load
PFC	public feature code

PLP

Plug Up

PLS

prime line select

Plug Up (PLP)

A feature that prevents calls from terminating to a specific line.

PODP

Public Office Dialing Plan

point in call (PIC)

A generic representation of a sequence of switch-based call-processing actions considered essential to establish, maintain, or clear a two-party call. PICs are separated by trigger detection points (TDP) in the basic call model (BCM).

PRI looparound

primary rate interface (PRI) looparound

primary interexchange carrier (PIC)

A line option that is assigned to a line when a subscriber has selected an inter-LATA carrier to handle toll calls. *See also* local primary interexchange carrier (LPIC).

private branch exchange message rate (PBM)

A message register associated with the operational measurements (OM) system that provides peg counts from 0 to 32,767 and then resets automatically to 0.

private virtual network (PVN)

A service that allows a customer to have the appearance of a private network with private network features and capabilities. It uses the public switched telephone network (PSTN) to avoid the higher costs of underused private transport facilities and to avoid the higher costs of long distance calls.

PRL

Privacy Release

programmable forward call

A feature that allows a subscriber to forward calls to a directory number (DN) other than the normal DN. The feature can be enabled or disabled, and the DN of the forwarding location can be set from any remote location. The subscriber dials a special number supplied by the operating company. The subscriber is prompted to enter a personal identification number (PIN) for verification as a legitimate user. Once verified, the subscriber enters the enable/disable request and forwarding DN. If the subscriber is successful, the subscriber is given a

confirmation message; if the subscriber is unsuccessful, the call is disconnected. *See also* call forwarding (CF/CFX).

PRS

Problem Resolution System

PRV

Multiple Appearance Directory Number (MADN) Privacy

PSD

passive service directory

PSE

passive service element

Public Office Dialing Plan (PODP)

An AIN Essentials trigger that is based on a number in a national numbering plan format.

PVN

private virtual network

Q entries**QTD**

Query Time and Date

query

A type of communication message that is sent by the service switching point (SSP) to the service control point (SCP), or adjunct, requesting call-processing instructions. In AIN, the message is contained in a transaction capabilities application part (TCAP) query package. *See also* TCAP package.

R entries**RAG**

Ring Again

Random Make Busy (RMB)

A feature that provides for a miscellaneous scan-point circuit controlled by an external key. The line is made permanently busy when the key is activated and is normal when the key is not activated. The same scan point can be assigned to one, several, or all lines within a hunt group, depending on which lines are made busy. This feature can be assigned in one of the following three types of

hunt groups: Directory Number Hunt (DNH), Multiline Hunt (MLH), or Distributed Line Hunt (DLH).

RBC

remote bearer channel

RDB

remote database

REASDISP

Name and Reason Display

refinable translation result (FTR)

A selector used in table IBNXLA that is required if the digit or digits dialed are the access code for the following options and features: bearer capability, dial call waiting, group intercom, loudspeaker paging answerable activation, loudspeaker, Meridian offnet access, network facility explicit access, no modem pool, prefix network resource selector (NRS) default, prefix network resource selector (NRS) outbound, speed calling access code, and voice message exchange.

remote bearer channel (RBC)

A remote bearer channel that is allocated by an active service element (ASE) to buffer connection information associated with the user at the far end of an agent interworking protocol (AIP) signaling channel. The RBC is a subclass of a bearer channel and it resides in the server layer.

Remote Message Register, Signal Distribution Point (RMS)

A feature assigned when a hardware register is to be incremented at a remote location from the DMS switch.

request

An event whose detection causes the switch to halt call processing, report the event to the service control point (SCP) or adjunct, and wait for a response. *See also* notification, and switch request message.

requested event

A switch event that has been requested by the service control point (SCP) or adjunct with a Request_Report_BCM_Event message. *See also* event detection point (EDP), and next event list (NEL).

Residence Enhanced Services (RES)

Software that provides for the implementation of sophisticated phone services for residential subscribers and small businesses previously serviced on plain ordinary telephone service (POTS) single-line flat rate or single-line message rate lines. Formerly known as Residential Services (RES).

response package

A transaction capabilities application part (TCAP) package containing one or more messages sent in response to another TCAP package. The service control point (SCP), or adjunct, can use a response package to instruct the service switching point (SSP) to perform an activity. The SSP can also send response packages. *See also* TCAP package.

Ring Again (RAG)

A feature that allows a calling party encountering a busy station to be connected automatically with that station when it becomes available. *See also* Network Ring Again (NRAG).

RMS

Remote Message Register, Signal Distribution Point

RMT

Remote Message Tool

RO

Remote Operation

RPA

Repeated Alerting

RSC

remote switching center

RSUS

Suspend/Request Suspension

S entries**SAID**

Speech-activated Intelligent Dialing

SAM

service alteration manager

SAP

service alteration point

SCMSG

Standard Call Messenger)

SCP

Service Control Point

SCPAUSE

speed call pause insertion

screening

A telephony function that determines the eligibility to complete a call as dialed based on the class-of-service information associated with the line.

SCS

speed calling short list

SCVAL

speed call validation

SDO

smart data object

Secondary Multiple Appearance Directory Number Call Forwarding (CFMDN)

A feature that enables secondary members of a Multiple Appearance Directory Number (MADN) group to activate or deactivate call forwarding (CFW) from their sets. When this feature is activated by a member, the entire key list of the “primary” MADN member is forwarded to the specified directory number (DN).

Selective Call Messaging (SCM)

SCM is an enhancement of the Special Delivery Service (SDS). SCM allows the operating company to optionally offer a message delivery service with universal subscription. *See also* Special Delivery Service (SDS).

service management system (SMS)

The SMS is an off-line node that performs management functions. It introduces new services and customer profiles to the network. It updates the service control points (SCP) in the network through regular batch updates, thereby ensuring database consistency for customer and service information.

The SMS enables operating companies to provision and administer the SCP, adjunct, and service switching point (SSP).

service switching point (SSP)

A switch that is capable of interacting with the Common Channel Signaling No. 7 (CCS7) network databases. The SSP contains hardware to support CCS7 signaling, software to create network database query messages, and software to interpret network database response messages.

SFC

specific feature code

shared inter-office trunk trigger

A trigger that allows the identification of advanced intelligent network (AIN) calls based on particular elements of the signaling protocol, whether it is a feature group D (FGD) TR317 ISDN user part (ISUP) or TR394 ISUP.

SKDISP

Softkey Transfer

SLQ

Single Line Queuing

smart data object (SDO)

The smart data objects (SDO) are owned by the root application service element (ASE). Child ASEs can ask for a handle to the SDOs. Once the child ASE has a handle to the object, it can increment and check the counter. This mechanism is analogous to an elaborate history control block/history data block (HCB/HDB).

SMS-originated call control (SOCC)

The SOCC provides message congestion control that is similar to automatic call gapping (ACG). However, call control is initiated by the service management system (SMS).

SN

send notification

SNM

send notification manager

SNP

service notification point

SOC

software optionality control

SOD

stringing of digits

SONET

synchronous optical network

SOR

Station Origination Restrictions

SORC

Station Origination Restrictions Controller

Special Delivery Service (SDS)

A feature that provides the caller with the option to invoke message delivery when the called party is busy or does not answer within an office-defined interval. The service is offered only to the subscribed originator and is requested directly from the end office (EO) where the call is originating. The actual voice message delivery is then offered from a Voice Message System (VMS) attached to the operating company's network.

speed call pause insertion (SCPAUSE)

An enhancement of the speed calling service that allows subscribers to insert pauses into the signaling digit string as they program a 24-digit maximum speed call number.

Speed Call User (SCU)

A feature that allows a subscriber to program a set of call-specified numbers using only one or two digits.

speed call validation (SCVAL)

An option assigned to a customer group that allows the call digits programmed in the speed call number to be validated.

Spontaneous Call Waiting Identification with Disposition (DSCWID)

A feature that allows the subscriber to receive calling party information during call waiting and provides the subscriber with a set of disposition options to treat incoming calls.

SPRING

Subscriber Programmable Ringing for Call Forwarding Remote Access (CFRA) on Residence Enhanced Services (RES)

SRS

Suppressed Ringing Service. *See also* Suppressed Ringing Access (SRA).

SSAC

Station-specific Authorization Codes

SSP

Service Switching Point

Standard Call Messenger (SCMSG)

A feature that automatically allows the caller to leave a message for the last party the caller has tried to reach.

station message waiting (MWT)

A feature that provides notification to users that a message has been queued against their directory number (DN). The feature permits users to dial an access code to call back the station user or attendant who activated the station

message waiting feature against their DN. MWT also allows the station user to activate station message waiting on another station.

Station Origination Restrictions (SOR)

A feature that determines if a call should be restricted. SOR restrictions fall into one of the following four categories: calls permitted based on network class of service (NCOS); only intragroup calls or calls on an exception list are allowed; only calls on the exception list are allowed; and no calls are allowed.

Station-specific Authorization Codes (SSAC)

A feature that provides the capability of limiting authorization code use to a specific station. This restriction increases security since the authorization code is linked to the individual's station and cannot be used from just any location.

stored program control (SPC)

The control of an automatic switching arrangement in which call processing is determined by a program stored in an alterable memory.

SPC is also the control of a function by sequentially interpreting information stored in a memory whose structure is independent of the function to be performed.

STR

Send To Resource

subscription

trigger subscription

subsystem number (SSN)

The identification of a subsystem located at a Common Channel Signaling No. 7 (CCS7) point code that can supply data.

Super Conference (CNF30)

An option that extends the maximum number of conferees on an attendant setup or Meet-me Conference call from 6 to 10 or more (maximum of 30). *See also* Meet-me Conference (MMC), and Executive Conference (MMCONF150).

Suppressed Ringing Access (SRA)

A feature that provides the capability to access a telephone company's customer loop without audibly ringing the telephone set(s) on the customer's premises. The SRA feature functionality is provided as part of a networked Suppressed Ringing Service (SRS) whereby a suppressed ringing call can be originated from any point in the network to any customer's line network-wide.

Suppressed Ringing for Telemetry (UTS)

A feature, also known as the Utility Telemetry Service (UTS), that allows a utility access to an end-user's line for telemetry data purposes. Connections will only be made when the subscriber's line is idle. There is no disruption to the subscriber's usual activities. No power ringing is applied to the customer's line when a connection is made.

SUS

Suspend

SUS/RSUS

Suspend/Request Suspension

Suspend/Request Suspension (SUS/RSUS)

A feature that is assigned to a directory number (DN) appearance when the customer requests suspension of service. If SUS/RSUS is assigned, it is possible to specify the treatments received by calls that originate from and terminate to the customer line.

SVCGRP

Service Group

SWERR

software error

switch notification message

A switch call-related message that indicates that no service control point (SCP) or adjunct response message should be sent. *See also* switch request message, and notification.

switch request message

A switch call-related message that indicates that a service control point (SCP) or adjunct response message is required. *See also* request, and switch notification message.

synchronous optical network (SONET)

A standard for optical transport that defines optical carrier levels and their electrically equivalent synchronous transport signals. The SONET standard allows for a multivendor environment, for the positioning of the network for transport of new services, for synchronous networking, and for enhanced operation, administration, and maintenance (OAM).

The SONET standard is built around a 51.84-Mbit/s basic communications channel that is multiplexed upward. SONET network standards incorporate existing 1.544-Mbit/s DS-1 service and 44.6-Mbit/s DS-3 service as subsets of the 51.84-Mbit/s SONET basic channel. *See also* synchronous transport signal 1 (STS-1), and optical carrier 1 (OC-1).

T entries**T&C**

time and charges

T1 timer**TAD**

telephone answering device

TAFAS

Trunk Answer From Any Station

TAT

termination attempt

TBC

terminating basic call

TBCM

terminating basic call model

TCAPMON

transaction capabilities application part monitor

TCAPNM

Calling Name Delivery for Meridian Digital Centrex (MDC)

TCAP package

AIN service switching point (SSP) messages are passed between the SSP and the service control point (SCP) in transaction capabilities application part (TCAP) components (messages) in TCAP packages. The following TCAP package types are used by the AIN SSP: (1) query (Query with Permission To Release) initiates a transaction; (2) response package terminates a transaction; (3) conversation (Conversation with Permission to Release) maintains a transaction; (4) unidirectional package sends “message not associated with a transaction”; (5) abort package terminates a transaction abnormally.

TCP/IP

transmission control protocol/internet protocol

TDISC

IP disconnect timer

TDV

Toll Diversion

teen service

A feature that allows multiple directory numbers (DN) to be assigned to each single-party flat-rate line without the expense of additional line equipment. Different ringing patterns are used for each DN.

telco

telephone company

TERMATT

Termination Attempt trigger

TPE

trigger processing environment

terminal identifier (TID)

In DMS software, the TID uniquely identifies any entity on which a call can be originated or terminated. The TID is an identifier for message sources or destinations.

terminating basic call model (TBCM)

The type of basic call model (BCM) that represents call-processing logic related to the terminating call portion of a basic call. *See also* basic call model (BCM), call model, and originating basic call model (OBCM).

Terminating Billing Option—Hunt Groups (TRMBOPT)

An option that allows an automatic message accounting (AMA) record to be generated for each call that terminates on a member of a hunt group that has TRMBOPT assigned.

TID

terminal identifier

TN

termination notification

TNS

Transit Network Selection

TPE

trigger processing environment

TRA

Term Resource Available trigger

translation type (TT)

Directs a message to the appropriate global title translation (GTT) function, and in some cases provides the context for which the global title (GT) digits are to be interpreted.

translation verification (TRAVER)

A diagnostic tool that allows the operating company to access and simulate a telephone call in software and to display the tables and tuples used to establish the lines, trunks, or positions to which a call is routed.

transmission control protocol/internet protocol (TCP/IP)

A standard operating and interface protocol for local area networks (LAN) that can use devices from multiple vendors. It was first developed by the United States Defense Department for federal government LANs.

TRAVER

See translation verification (TRAVER).

trigger

A trigger defines the conditions that must be met for the service switching point (SSP) to send a query to the service control point (SCP), or adjunct. One or more types of triggers can occur at each trigger detection point (TDP).

trigger criteria

Trigger criteria defines the conditions used to determine whether a particular call will trigger. A trigger can contain criteria of one or more trigger criteria types. In order for a call to trigger, all trigger criteria must be met. There are three AIN criteria types: (1) Call Type, which specifies what kind of call may trigger; (2) Digits Dialed, which defines specific digits that cause triggering; and (3) Escape Code, which bypasses triggering.

For example, at the Information Analyzed point in a call, there may be a Customized Dialing Plan trigger whose criteria include Call Type and Digits Dialed. The operating company defines the values of Call Type and Digits Dialed.

triggering

The process whereby a call indicates that it requires advanced intelligent network (AIN) service(s).

trigger subscription

Triggers can be subscribed by the following: individual (line or trunk group), group (customer group), office, and directory number (DN).

trigger tables

Trigger tables store information about the advanced intelligent network (AIN) application, triggers, trigger detection points, trigger criteria, transport protocol, and service control point (SCP), or adjunct, routing.

TRMBOPT

Terminating Billing Option—Hunt Groups

Trunk Answer From Any Station (TAFAS)

An option that allows answering of incoming attendant-seeking calls from any station if all attendant positions are unattended. TAFAS dials an answer code in response to a common audible ringing device such as a bell or a buzzer.

TSP

Terminal Service Profile

TSTRC

STR-connection timer

tuple

A horizontal row in a data table.

TWW

two-way wide area telephone service (WATS)

U entries

U3WC

Usage Sensitive Three-way Calling

UASE

utility active service element

UCDLG

uniform call distribution (UCD) login key for UCD lines

UCDNSA

uniform call distribution (UCD) night service activate

UCDNSD

uniform call distribution (UCD) night service deactivate

UIF

user interface framework

unified processor (UP)

A processor that replaces the master processor (MP), the signaling processor (SP), and the memory cards associated with these processors. This replacement upgrades the remote switching center (RSC) to an ISDN remote switching center (RSCI).

Universal Access to Call Forwarding (CFXU)

A feature that provides universal access to call forwarding for telephones with a line class code of RES, RES-1FR, or RES-1MR.

Universal Voice Messaging (UVM)

A voice messaging service that is offered universally to residential and small business end-users through simplified dialing. The service is intended to be universal for several types of originating and terminating residential and business customers within an operating company's network.

UP

unified processor

UR

update request for trigger activation and deactivation

USA

user service agent

Usage Sensitive Three-way Calling (U3WC)

A feature that provides the Three-way Calling (3WC) feature on a pay-per-use basis. The U3WC user is charged each time the 3WC feature is requested instead of being charged a flat rate that is independent of the number of 3WC activations.

USD

utility services directory

user interface

The series of commands and responses used by operating company personnel to communicate with the DMS-100 Family switches. Communication takes place through the MAP terminal and other input/output devices (IOD). Formerly known as man-machine interface (MMI) or human-machine interface (HMI).

user service agent (USA)

A user service agent is an object that is encapsulated by an active service element's (ASE) service agent. It provides a focal point for managing user-side signaling and connection functions.

UTR

universal tone receiver

UTS

Suppressed Ringing for Telemetry

UVM

Universal Voice Messaging

UWATS

universal wide area telephone service

V entries**VAD**

voice-activated dialing

VANC

voice-activated network control

VAPN

virtual access to private networks

VDN

virtual directory number

VDU

video display unit

VFGLA

virtual facility group look ahead

VMS

Voice Message System

VNS

Virtual Network Services

voice-activated dialing (VAD)

A service that allows a user to dial a call using voice only. VAD is an AIN 0.2 service driver and it may include the following capabilities: (1) speaker-dependent recognition of a name, which may be associated with any string of digits, including a vertical service code or a directory number; (2) speaker-independent recognition of digits. *See also* voice-activated network control (VANC).

voice-activated network control (VANC)

A service that allows a user to control the vertical features of a call by speaking a service name, which the network detects using speaker-independent recognition. There are two categories of VANC: initial VANC and extended VANC. *See also* initial voice-activated network control (VANC), extended voice-activated network control (VANC), and voice-activated dialing (VAD).

VSC

vertical service code

W entries**WAN**

wide area network

wide area network (WAN)

A large-scale, high-speed communications network used primarily for interconnecting local area networks (LAN) located in different cities or nations. *See also* local area network (LAN).

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DMS-100 Family

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