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DMS-100 Family

Equal Access

Translations Guide

BCS36 and up Standard 04.01 December 1993

northern telecom

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Publication history

December 1993

BCS36 Standard 04.01

- added feature AN0174 - Carrrier Code Expansion for LEAS
- added the following correction to packages NTX186AB - Equal Access End Office and NTX386AB - Access Tandem Switch:
  - BX04240: Calling Party Number Delivery to Feature Group C

July 1993

BCS35 Preliminary 03.03

- updated to reflect new document reference titles and NTP numbers
- updated to reflect new versions of features and packages
- restructured to follow Northern Telecom standards

Note: Because this document has been completely restructured for BCS35, there are no revision bars in this document.

March 1993

BCS35 Standard 03.02

- added the following corrections to package NTX186AB - Equal Access End Office:
  - TAB 920102: blocking 10XXX+1+ hotel calls
  - UX200089: 10XXX intra-LATA calls go to vacant code
  - UX300011: international calls from rotary phone go to reorder
  - BK07449: removal of restart requirements for office parameters
  - BR35827: default for field ORIGCARR in table OCCINFO is N not Y
- added the following corrections to package NTX386AB - Access Tandem Switch:
  - UX300011: international calls from rotary phone go to reorder
  - BR35827: default for field ORIGCARR in table OCCINFO is N not Y

- added the following corrections to package NTX843AB - Cellular Interconnect:
  - UX201111: cell to SS7 failing with DFIL126 log
  - UX200089: 10XXX intra-LATA calls go to vacant code
- added the following correction to package NTXE23AA - Cellular Interconnect - End Office:
  - UX200089: 10XXX intra-LATA calls go to vacant code
- added the following correction to package NTX710AB - LATA Equal Access System
  - UX200089: 10XXX intra-LATA calls go to vacant code

September 1992

BCS35 Preliminary 03.01

- editorial comments

July 1992

BCS34 Standard 02.01

- added the following feature to package NTX186AA - Equal Access End Office:
  - NC0335 - FGD Carrier Identification Code Expansion
- added the following feature to package NTX386AA - Access Tandem Switch:
  - NC0335 - FGD Carrier Identification Code Expansion
- added the following correction to package NTX735AA - Flexible ANI
  - BK00981: if IEC does not want FANI, regular ANI is sent instead of "00"
- added the following corrections to package NTX710AA - LATA Equal Access System
  - BR29430: replace SWERR with DFIL log DFIL149 to indicate improper LEAS datafill
  - BR29680: increase the maximum allowed entries in table PICNAME from 64 to 256

October 1991

BCS33 Standard 01.01

- initial release of this document

  Note: Information in this document is a Restructure of the "Equal Access" section in the *Core Translation Manual,* NTP 297-1001-362, Version/Issue 02.01.

Revision bars in the table of contents identify the sections where technical information has been changed. Revision bars in the outside margin of a page indicate text that has been added or revised.

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About this document

This document describes the the datafill required to implement Equal Access. It includes required datafill, feature package prerequisites and limitations; where applicable, it includes service orders, activation instructions for the end user, and example TRAVER output. It is intended for translations administration personnel. Before using this document, read *Equal Access Product Guide*, 297-2101-011, to become familiar with Equal Access.

When to use this document

Northern Telecom (NT) software releases are referred to as batch change supplements (BCS) and are identified by a number, for example, BCS29. This document is written for DMS Family offices that have BCS36 and up.

More than one version of this document may exist. The version and issue are indicated throughout the document, for example, 01.01. The first two digits increase by one each time the document content is changed to support new BCS-related developments. For example, the first release of a document is 01.01, and the next release of the document in a subsequent BCS is 02.01. The second two digits increase by one each time a document is revised and rereleased for the same BCS.

To determine which version of this document applies to the BCS in your office, check the release information in *Guide to Northern Telecom Publications*, 297-1001-001.

How to identify the software in your office

The *Office Feature Record (D190)* identifies the current BCS level and the NT feature packages in your switch. You can list a specific feature package or patch on the MAP (maintenance and administration position) terminal by typing

>PATCHER;INFORM LIST identifier

and pressing the Enter key.

where

identifier is the number of the feature package or patch ID

You can identify your current BCS level and print a list of all the feature packages and patches in your switch by performing the following steps. First, direct the terminal response to the desired printer by typing

>SEND printer_id
and pressing the Enter key.

where
printer_id is the number of the printer where you want to print the data

Then, print the desired information by typing

>PATCHER;INFORM LIST; LEAVE
and pressing the Enter key.

Finally, redirect the display back to the terminal by typing

>SEND PREVIOUS
and pressing the Enter key.

How Equal Access documentation is organized

This document is part of Equal Access documentation that supports the NT line of Equal Access products. Equal Access documentation is a subset of the DMS-100 Family library.

The DMS-100 Family library is structured in numbered layers, and each layer is associated with an NT product. To understand Equal Access products, you need documents from the following layers:

- DMS-100 Family basic documents in the 297-1001 layer
- Equal Access documents in the 297-2101 layer

Equal Access documents and other documents that contain related information are listed in "Finding Equal Access information" in *Equal Access Product Guide*, 297-2101-011.

References in this document

The following table lists the documents that are referenced in *Equal Access Translations Guide*.

Related documents	
Number	**Title**
297-1001-001	*Guide to Northern Telecom Publications*
297-1001-119	*Automatic Message Accounting - Northern Telecom Format*

-continued-

Related documents (continued)

Number	Title
297-1001-129	*Input/Output System Reference Manual*
297-1001-451	*Common Customer Data Schema*
297-1001-454	*Customer Data Schema Input Forms*
297-1001-455	*The Office Parameters Reference Manual*
297-1001-509	*Command Reference Manual*
297-1001-814	*Operational Measurements Reference Manual*
297-1001-830	*Bellcore Format Automatic Message Accounting Reference Guide*
297-1001-840	*Log Report Reference Manual*
297-2001-451	*Meridian Digital Centrex Customer Data Schema*
297-2101-011	*Equal Access Product Guide*
297-2101-110	*Equal Access Planning and Engineering Guide*
297-2101-300	*Equal Access Administration Guide*
297-2101-352	*Equal Access Translations Guide*
297-2101-451	*Local Customer Data Schema*
297-2101-500	*Equal Access Maintenance Guide*
297-2101-808	*SERVORD Service Order and Query System Reference Manual*
297-2201-451	*Toll Customer Data Schema*
297-2271-451	*TOPS Customer Data Schema*
297-2401-310	*Integrated Services Digital Network Service Orders for ISDN Terminals Reference Manual*

End

Important translations information

The following precautionary messages caution the user against actions that could result in errors in system translations. These messages apply to all translations documents.

WARNING
Service interruption or equipment damage
Table datafill examples contained in this document are examples only and are not meant to be copied. Do not enter them verbatim into your switch since they may not be compatible with the translations of your office.

CAUTION
Possible loss of AMA
Do not perform any translations manipulation during high traffic times. Doing so can result in the loss of AMA.

Understanding Equal Access translations

Before datafilling Equal Access packages, it is necessary to have a basic understanding of Equal Access concepts and terminology. This chapter describes in general terms the translation function with respect to Equal Access.

Describing Equal Access

Equal Access is a group of software features that allow an operating company to offer subscribers a choice of carriers every time they make a long distance call. Subscribers choose their long distance carriers either by dialing a carrier access code to reach a specific carrier or by presubscription.

Several plans have been introduced to help the operating companies and interexchange carriers convert gradually to a full implementation of Equal Access. There are six basic access plans:

- feature group A
- feature group B
- feature group C
- feature group D (FGD) interim
- FGD transitional
- FGD Equal Access

The FGD Equal Access plan implements the Modification of Final Judgement requirements by providing end offices with access to interexchange and international carriers.

Describing translations

Translations is the process where the system accesses information stored in data tables. To implement Equal Access, certain tables must be datafilled in a specific sequence.

Translations database

To route a call, the switch must access the translations database.

The translations database is stored in the DMS core. It contains numerous data tables. Each table has a specific purpose and contains a certain type of data. When processing a call, the DMS switch can access many tables to collect the data needed to complete a call.

Every table has a name. For example, the table containing the data for trunk groups is named table TRKGRP. Table names are written using capital letters.

A table consists of horizontal rows and verticals columns of data. Each row contains one record of data and is called a tuple. Each column is called a field.

Translations audience

This guide is intended for administration personnel such as supervisors, translations personnel, and people needing specific knowledge of the Equal Access translations.

Terms used in translations

Terms used in translations are described in the following sections.

Data

Data is contained in fields. Each field or subfield has a specific value for that field. For example, a field called SECONDS can accept integer values from 0 through 60. A field called DAY can accept values of SUNDAY, MONDAY, TUESDAY.

Datafill

Datafill is the process of entering data into a table. Datafill used as a noun is a synonym for data.

Field

A field is one column of a table. Each field has a name that describes the content of the field. For example, a field that contains directory numbers can be named field DN.

Key field

A key field is found in each table. Tables can have more than one key field. These fields uniquely identify any tuple in the table. Knowing the key fields of a table is important when using the table editor.

Range

The range of a field is the set of all possible data values that can be entered in the field. For example, a field called NUMBER can have the range of 1 through 20. RANGE is also a command that can be entered at the switch to determine the range of the table or field.

Subfield

A subfield is a division of a field. For example, the field named line equipment number (LEN) consists of five subfields: SITE, FRAME, UNIT, DRAWER, and CIRCUIT.

Table editor

The table editor is the user interface to the translations database. It allows the user to view tables, add or delete tuples, and change data in tuples.

Tuple

A tuple is one row of data in a table.

Vector

A vector is a field that can contain more than one entry. Each entry is separated by a plus (+) sign; a dollar ($) sign indicates the end of the vector. For example, the OPTCARD field in table LTCINV can contain up to 10 optional cards; each entry is separated by a plus sign and the vector ends with the dollar sign.

Preparing to datafill Equal Access

This chapter explains how to use the translations guide.

How to use this document

The feature packages provisioned to implement Equal Access vary according to the office application. For example, an end office must be provisioned with the NTX186AB - Equal Access End Office feature package to become an Equal Access end office (EAEO). To provide Equal Access capabilities to a tandem office, the NTX386AB - Access Tandem feature package must be provisioned. These packages are the basic ones for Equal Access. Other feature packages may be required for services such as Traffic Operator Position System and wide area telephone service.

This document is organized by feature package. The feature packages are grouped into three chapters:

- chapter 3, ‘‘Datafilling an end office,” describes the feature packages that apply to end offices only
- chapter 4, ‘‘Datafilling an access tandem office,” describes the feature packages that apply to access tandem offices only
- chapter 5, ‘‘Datafilling an end office or an access tandem,” describes the feature packages that apply to both end offices and access tandems

The following table lists the feature packages described in this document.

Equal Access software package	
Package number	**Package name**
NTX386AA	Access Tandem Switch
NTX186AB	Equal Access End Office
NTXA24AA	Equal Access Enhanced Carrier Toll Denied
NTXE13AC	CCS7 ISUP Inter-LATA Connection EAEO
NTX083AA	Feature Group A

-continued-

Equal Access software package (continued)	
Package number	**Package name**
NTX209AB	FGB AMA End Office (ATT Format)
NTX268AA	FGB AMA End Office (NT Format)
NTX711AB	Equal Access End Office Enhancements
NTXE23AA	Cellular Interconnect - End Office
NTXA16AA	Enhanced WATS Operation (POTS)
NTXF58AA	POTS - Intra-LATA PIC in EAEO
NTXF69AA	MDC - Intra-LATA PIC in EAEO
NTX888AA	Equal Access Operator Services Signaling
NTX803AA	Equal Access Alternate Switching Point
NTX735AA	Flexible ANI
NTX989AA	Carrier Access Code Blocking for IEC/INC
NTX710AA	LATA Equal Access System
NTXE14AB	CCS7 ISUP Inter-LATA Connection Access Tandem
NTX829AA	Intra-LATA PIC for LEAS
NTX211AB	FGB AMA Tandem - ATT Format
NTX843AB	Cellular Interconnect
End	

The following packages are required for an EAEO.

Feature package prerequisites	
Package number	**Package name**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX042AA	Local Automatic Message Accounting
NTX072AA	International Direct Distance Dialing
NTX159AA	Bellcore LAMA Format
NTX901AA	Local Features I

The following packages are required for an Equal Access tandem.

Feature package prerequisites	
Package number	**Package name**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX044AA	Central Automatic Message Accounting
NTX098AA	Bellcore CAMA Format
NTX290AA	Tandeming/Supervision and Treatment
NTX801AA	Toll Features I

Determining the system datafill sequence

Each feature package requires the datafill of different tables, although there are similarities between some of the packages. Therefore, refer to the individual packages in this document for appropriate datafill sequence.

Datafilling an end office

This chapter describes Equal Access packages that are available for end offices and explains how to datafill them. Table 3-1 lists the software packages described in this chapter.

Table 3-1
Equal Access end office software

Package number	Package name
NTX186AB	Equal Access End Office
NTXA24AA	Equal Access Enhanced Carrier Toll Denied
NTXE13AC	CCS7 ISUP Inter-LATA Connection EAEO
NTX083AA	Feature Group A
NTX209AB	FGB AMA End Office (ATT Format)
NTX268AA	FGB AMA End Office (NT Format)
NTX711AB	Equal Access End Office Enhancements
NTXE23AA	Cellular Interconnect - End Office
NTXA16AA	Enhanced WATS Operation (POTS)
NTXF58AA	POTS - Intra-LATA PIC in EAEO
NTXF69AA	MDC - Intra-LATA PIC in EAEO
NTX888AA	Equal Access Operator Services Signaling
NTX803AA	Equal Access Alternate Switching Point
NTX735AA	Flexible ANI

NTX186AB - Equal Access End Office

Package name

Equal Access End Office

Package number

NTX186AB

Feature numbers

The NTX186AB feature package consists of the following features:

NTX186AB feature numbers and names

Feature number	Feature name
AF1778	FGB on ATC Trunks
AN0172	Carrier Code Expansion for ISDN
BC1124	EAEO - Translation and Carrier Screening
BC1125	EAEO - Trunk to AT and IEC
BC1126	EAEO - Originating and Terminating Billing
BC1129	EAEO - Treatments
BC1130	EAEO - New Logs
BC1131	EAEO - Abbreviated Dialing
BC1364	Feature Group C and D Compatibility
BC1367	Overlap Carrier Selection
BC1368	Equal Access on Meridian Digital Centrex Datapath
BC1379	Equal Access Expanded Toll Denial
BC1380	Equal Access Central Control Real Time Improvement
BC1389	Equal Access 00 Minus Dialing Routed via Primary Inter-LATA Carrier
BC1390	Corridor Call Routing and Billing
BC1395	OMs - PIC and Non-PIC Calls per IEC/INC
BC1681	EAEO - Inter-LATA Carrier/International Carrier Event Status Enhancement
BC1709	Circle Digit Equal Access Compatibility
BC1723	EA Optional Service Access Codes
BC1791	EAEO P2 (PX) Trunk Compatibility

-continued-

NTX186AB - Equal Access End Office (continued)

NTX186AB feature numbers and names (continued)	
Feature number	**Feature name**
NC0335	FGD Carrier Identification Code Expansion
NC0428	FGD Carrier Identification Code Expansion--Phase 2
End	

BCS applicability

BCS35 and up

Feature package prerequisites

This package requires the following feature packages:

Feature package prerequisites	
Feature package	**Feature package name**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX042AA	Local Automatic Message Accounting
NTX072AA	International Direct Distance Dialing
NTX159AA	Bellcore LAMA Format
NTX901AA	Local Features I

Description

The NTX186AB - Equal Access End Office feature package allows DMS-100 switches (end offices) to originate, route, and bill calls to interexchange carriers (IEC) and international carriers (INC) in accordance with the Equal Access plan (EAP). Equal Access calls are supported in the Plain Ordinary Telephone Service (POTS) and the Meridian Digital Centrex (MDC) environments.

Theory of operation

The following capabilities, provided by the NTX186AB - Equal Access End Office package, are described in this section:

- translations and carrier screening in the POTS environment
- translations and carrier screening in the MDC environment
- originating and terminating billing
- treatments

- signaling
- dialing
- features
- carrier identification code (CIC) expansion

Translations and carrier screening in the POTS environment

The NTX186AB - Equal Access End Office feature package implements the translations and carrier screening for Equal Access calls in the POTS environment. To perform the necessary digit translation and carrier screening, the switch must be able to

- identify incoming Equal Access traffic
- determine the type of Equal Access traffic (interstate or intrastate, interexchange or local exchange, domestic or international) and the switching arrangement used (interim, Equal Access, transitional, feature group C (FGC), or none)
- add the Equal Access prefix for calls routed to the subscriber primary inter-LATA carrier (PIC)
- select the IEC or INC based on the Equal Access prefix present (EAP or interim plan)
- determine whether the carrier can handle the call
- select an outgoing trunk based on the call type, carrier requirements, and trunk availability
- create the digit stream outpulsed to the next office or carrier based on the call type and carrier requirements
- handle Equal Access operator assisted (OA) calls

See chapter 4 of *Equal Access Product Guide*, 297-2101-011, for a description of the outpulsing for Equal Access calls.

Translations and carrier screening in the MDC environment

The NTX186AB - Equal Access End Office feature package implements Equal Access for MDC stations and incoming trunks. The MDC stations that support Equal Access include

- attendant console
- data unit
- P-phone set
- standard MDC 500/2500 set

These stations reside in a dedicated private branch exchange (PBX) or are part of a centrex configuration. Two Equal Access translation and routing methods can be applied in the environment, depending on the method of

NTX186AB - Equal Access End Office (continued)

operation: the PBX and the combined centrex/Equal Access end office (EAEO) methods.

PBX mode of operation

PBX subscriber groups reside in one of the following:

- stand-alone PBX with real physical trunks connecting it to the EAEO
- centrex system with virtual facility groups (VFG) connecting it to the EAEO

Equal Access traffic originating from either type of group cannot access the EAEO directly. The traffic must first be routed over a real trunk or a VFG. Each outgoing Equal Access call to an IEC or INC is treated as two separate calls in the MDC.

The following steps describe the first call, from the calling party through the MDC:

- The calling party dials the called number.
- The digits enter the PBX where they are translated and screened.
- The PBX selects an outgoing trunk to the connected EAEO.

The following steps describe the second call, from the PBX through the EAEO to the carrier:

- The PBX outpulses the dialed digits to the EAEO. If the PBX is datafilled for complete translation and the EAP prefix is not in the dialed digits (that is, the calling party wants the call routed to the station PIC or the PBX default carrier), the appropriate EAP prefix is determined by the system software and outpulsed with the dialed digits.
- The digits enter the EAEO where they are translated and screened.
- The EAEO selects an outgoing trunk to the IEC or INC.
- The EAEO outpulses the appropriate digits to the carrier. The call is routed to the called party.

Combined centrex and EAEO mode of operation

The Equal Access traffic originating from a combined centrex and EAEO mode of operation accesses the EAEO directly. The following steps describe the interaction between the centrex and EAEO POTS environments:

- The calling party dials the called number.
- The digits enter the centrex part of the EAEO where they are translated and screened.
- The EAEO POTS environment is accessed directly with the line attribute index assigned in MDC translation table IBNXLA.

- The digits enter the EAEO POTS environment for called number verification and carrier screening.
- The EAEO selects an outgoing trunk to the IEC or INC.
- The EAEO outpulses the appropriate digits to the carrier. The call is routed to the called party.

Note: There are no intervening trunks (real or VFG) between the centrex and the EAEO.

Assigning PICs for MDC subscribers

An MDC subscriber group can have a PIC assigned in either the MDC or the EAEO POTS environment. The PIC is assigned in the EAEO if the EAP prefix is not in the incoming digit stream. If the PBX is connected to the EAEO by a real trunk group, table LENFEAT is used for PIC assignment. If the PBX is connected to the EAEO by a VFG, table VIRTGRPS is used.

The MDC subscriber can choose either one or both of the following MDC PIC options, which are assigned within the MDC environment before EAEO POTS translation:

- line PIC (LPIC), where the specified line has an assigned PIC
- group PIC (GPIC), where the specified line group has an assigned PIC

If the subscriber chooses an LPIC for a line that has a GPIC assigned, the LPIC overrides the GPIC. The LPIC and GPIC options reside in the preliminary and subscriber group translators, respectively. If the dialed digits are not in the preliminary translator, the subscriber group translator is searched.

Originating and terminating billing

This feature package implements originating and terminating billing for Equal Access calls. Originating access records are created for all outgoing Equal Access calls routed either directly to an IEC or INC, or indirectly through an access tandem (AT). Terminating access records are created for all completed Equal Access calls routed directly to the EAEO from an IEC or INC. All the billing records produced are in the standard automatic message accounting (AMA) format. Originating and terminating billing is described in the billing section on page 3-31.

Treatments

This feature package implements the new treatments needed when Equal Access calls fail. A treatment is a software generated reaction to a call failure condition. While some Equal Access failure conditions can use the existing treatments described in table 3-2, new treatments are needed for the

NTX186AB - Equal Access End Office (continued)

features implemented by this feature package. The treatments are described in table 3-3.

Table 3-2
Failure conditions - existing treatments

Failure condition	Treat-ment	Disposition
EAEO does not get AT wink after two attempts.	STOC	Signal time-out announcement
EAEO does not get IEC/INC wink after two attempts.	STOC	Signal time-out announcement
All trunks busy from EAEO to AT or IEC/INC.	GNCT	All circuits busy announcement

Table 3-3
Failure conditions - new treatments

Failure condition	Treat-ment	Disposition
Inter-LATA restriction (INTER = N (no) in table OCCINFO for carrier)	CACE	Carrier access code (CAC) in error announcement
Intra-LATA restriction (INTRA = N in table OCCINFO for carrier)	NACD	Do not dial 10XXX announcement
Interstate restriction (INTERS = N in table OCCINFO for carrier)	CACE	CAC in error announcement
Intrastate restriction (INTRAS = N in table OCCINFO for carrier)	CACE	CAC in error announcement
International restriction (INTNTL = N in table OCCINFO for carrier)	CACE	CAC in error announcement
AD1 dialed (AD = N in table OCCINFO for carrier)	CACE	CAC in error announcement

-continued-

Table 3-3
Failure conditions - new treatments (continued)

Failure condition	Treat-ment	Disposition
10XXXQSAC dialed	CACE	CAC in error announcement
Unassigned or modified CAC or ACCESS = NONE in table OCCINFO for carrier	CACE	CAC in error announcement
No Equal Access prefix dialed, line does not have a PIC, and OFCENG Default Carrier is set to a treatment	DACD	Dial CAC announcement
EAP prefix dialed, should be interim, ACCESS = EAP in OCCINFO for carrier	D950	Dial 950 announcement
Interim prefix dialed, should be EAP, ACCESS = EAP in OCCINFO for carrier	N950	Do not dial 950 announcement
EAP prefix dialed, carrier is not PIC, and subscriber is not given CHOICE to select carrier	NACD	Do not dial 10XXX announcement
BCS17: Either IELRES = Y (yes) in OCCINFO or OPTLIST = TDN in LENLINES ***Note*:** The IELRES field in table OCCINFO is deleted in BCS21.	ILRS	Dialing restriction announcement
BCS18 and subsequent releases: line is denied access to carrier (carrier toll denied)	ILRS	Dialing restriction announcement
Invalid inter-LATA corridor call	IVCC	Invalid corridor call

End

The DMS-100 switch uses the digital recorded announcement machine (DRAM) to deliver announcements to subscribers. This machine is flexible and allows the operating company to record customized announcements. Table 3-4 lists service announcements for some of the treatments provided by this package.

NTX186AB - Equal Access End Office (continued)

Table 3-4
Service announcements associated with treatments

Treatment	Service announcement
D950	We're sorry, the carrier access code you dialed must be preceded by the digits 950. Please hang up and dial your call again.
N950	We're sorry, it is not necessary to dial the digits 950 before dialing your carrier access code. Please hang up and dial your call again.
ILRS	We're sorry, your call cannot be completed as dialed. Please read your instruction card or call your operator for assistance. Please hang up and dial your call again.
NACD	We're sorry, it is not necessary to dial a carrier access code for the number you have dialed. Please hang up and dial your call again.
CACE	We're sorry, the number you have dialed cannot be reached with the carrier access code you dialed. Please check the code and dial again or call your carrier for assistance.
DACD	We're sorry, it is necessary to dial a carrier access code for the number you have dialed. Please hang up and dial your call again.

Signaling supported by NTX186AB

NTX186AB - Equal Access End Office uses feature group D (FGD) dialing plan and signaling. However, it also supports feature group B (FGB) and FGC signaling.

FGB on access to carrier trunks

Without this feature package, FGB signaling is supported only on outgoing CAMA (OC) trunks to FGB carriers and on access to carrier (ATC) trunks to FGB carriers in Traffic Operator Position System (TOPS) offices. Also, the DMS switch has to wait 4 to 8 seconds for off-hook on all outgoing trunks to FGB carriers.

This feature package implements FGB signaling on all ATC trunks by changing table TRKGRP. Field SIGTYPE now accepts FGB as a valid signaling type, whether or not TOPS is datafilled in the end office.

The DMS switch now waits for an off-hook from the FGB carrier for 5 seconds after outpulsing the called digits. If an off-hook is not received, then an attempt is made on a second carrier trunk. If the second trunk fails, the call is taken down. After each call attempt, log TRK121 is generated to record the failure of each trunk.

Timing is supported for the following FGB calls:

- line to ATC trunk
- SuperCAMA (SC) trunk to ATC trunk
- intertoll (IT) trunk to ATC trunk
- attendant console to ATC trunk
- three-way calling to ATC trunk
- P2/PX trunk to ATC trunk

FGC signaling on ATC, IT, and operator trunks

The NTX186AB feature package allows the DMS-100 switch to access an FGC carrier using FGC signaling. This signaling is used on ATC, IT, and operator trunks. Note that the FGD dialing plan and billing method are retained.

Dialing supported by Equal Access

In addition to the standard Equal Access dialing procedures described in *Equal Access Product Guide*, 297-2101-011, the NTX186AB feature package supports the following types of dialing.

Abbreviated dialing

This feature implements new types of abbreviated dialing for Equal Access calls. They are described in chapter 4, ‘‘Equal Access dialing procedures and signaling,” of *Equal Access Product Guide*, 297-2101-011.

00- dialing

With the NTX186AB - Equal Access End Office feature package, an operating company can provide subscribers with the capability to dial 00- to access their PIC operator services, without having to dial 10XXX+00- or 10XXX+0-.

This feature package also allows an operating company to determine the class of service of the line originating a 00- call (for example, coin line or single-party line). The operating company can then route 00- calls using different routes, depending on the line type of the calling party.

This feature is available in the POTS and MDC environments. If an MDC subscriber does not have a PIC, a group PIC is used instead. If a POTS subscriber does not have a PIC or if a group PIC has not been specified for an MDC subscriber, the call is routed to the default carrier or to an announcement machine.

To implement 00- dialing, set to 00 the FROMDIGS and TODIGS fields in the first and second pretranslators in subtable STDPRTCT.STDPRT. The

NTX186AB - Equal Access End Office (continued)

NOPREDIG fields in both pretranslators should be set to 1, so one zero can be outpulsed.

Operating companies can decide not to provide the 00- dialing option. They should then make sure the FROMDIGS and TODIGS fields in the first pretranslator are not set to 00. However, the FROMDIGS and TODIGS fields of the second pretranslator must always be set to 00 to allow 10XXX+0- dialing.

The 00- dialing feature supports both FGC and FGD signaling. Note that FGC calls should be routed to an IEC operator service, not to the AT, because the switch does not know which carrier(s) will handle these calls.

The route that a 00-, 10XXX+0-, or 10XXX+00- call takes out of table OFRT is specified in the EXTRTEID field of the second pretranslator. The route defined in the second pretranslator overrides the one defined in the EXTRTEID field of the first pretranslator.

Table 3-5 shows the signaling information outpulsed for calls made with the 00-, 10XXX+00-, and 10XXX+0- dialing sequences. Table 3-6 lists the codes used in table 3-5.

Table 3-5
Signaling information outpulsed for 00- calls

Call type	Signaling information	Automatic number identification (ANI)
FGC calls	KP + 0 + ST	
FGD calls over direct trunks to a carrier	KP + II + ANI + ST + KP + 0 + ST	Yes
	KP + ST + KP + 0 + ST	No
FGD calls to an AT	KP + 0ZZXXX + ST KP + II + ANI + ST + KP + 0 + ST	Yes
	KP + 0ZZXXX + ST KP + ST + KP + 0 + ST	No

Table 3-6
Equal Access outpulsing definitions

Digits Sent	Definition
0ZZ	The AT receives the domestic identification digits from the EAEO for local or interexchange Equal Access calls only. The digits indicate the call type for both direct dialed (DD) and OA calls (for example, 080).
ANI	The ANI digits are outpulsed by the EAEO to the AT as part of the ANI spill for all Equal Access calls to carriers identified in table OCCINFO as requiring ANI spill. The ANI spill consists of the information digit(s) and the calling number.
II	The AT receives the information digits from the EAEO for all Equal Access calls.
KP	A key-pulse indicates the start of the digit stream.
ST	A start pulse indicates the end of a digit stream.
XXX	The AT receives the CAC digits from the EAEO for all Equal Access calls. The CAC is either dialed by the subscriber or added by the EAEO to the called number for presubscription (for example, 222).

Calls supported by Equal Access

In addition to the standard Equal Access calls, the NTX186AB feature package supports the following types of dialing.

Corridor calls

A corridor call is an interexchange call that is routed through a local exchange carrier (operating company) instead of an IEC.

A corridor call can be routed through the operating company if the subscriber dials the 10XXX digits of the operating company or if the subscriber defined the company as a PIC. Each call is screened to determine that it is an interexchange call within the corridor. If the call is an interexchange call but is outside the corridor, the call is routed to invalid corridor call (IVCC) treatment. Local exchange calls complete normally using the operating company's facilities.

The following corridor calls are supported:

- 00 -
- 0 + 7 digits
- 0 + 10 digits
- 1 + 7 digits

- 1 + 10 digits
- 10XXX + 0
- 10XXX + 00
- 10XXX + 0 + 7 digits
- 10XXX + 0 + 10 digits
- 10XXX + 1 + 7 digits
- 10XXX + 1 + 10 digits

The operating company is defined as an OTC carrier access type (a company that can handle corridor calls) by entering OTC in the ACCESS field of table OCCINFO. It then specifies the EATYPE as CORRIDOR in table LATAXLA for each LATACODE defined as a corridor call. Corridor calls are billed as local exchange calls.

Privilege calls

Privilege calls are interexchange calls dialed without a 10XXX prefix or PIC and completed by the operating company. These calls are translated as non-Equal Access, local exchange calls. The following interexchange call types can be privilege calls:

- 0 + 7 digits
- 0 + 10 digits
- 1 + 7 digits
- 1 + 10 digits

The operating company defines privilege calls by specifying the EATYPE as PRIVILEGE in table LATAXLA for each LATACODE that the operating company decides to be a privilege call. Calls datafilled as PRIVILEGE and dialed with a 10XXX prefix are routed as Equal Access interexchange calls using the dialed IEC. There is no entry in table OCCINFO associated with a privilege call. Privilege calls are billed as local exchange calls.

Non-Equal Access calls

Non-Equal Access calls are local exchange calls completed by the operating company and dialed without a 10XXX prefix. The following local exchange call types can be non-Equal Access calls:

- 7 digits
- 10 digits
- 0 + 7 digits
- 0 + 10 digits
- 1 + 7 digits
- 1 + 10 digits

The operating company defines non-Equal Access calls by specifying the EATYPE as NON_EA in table LATAXLA for each LATACODE that the operating company decides to be a non-Equal Access call. Calls datafilled as NON-EA and dialed with a 10XXX prefix are routed to no dial access code (NACD) treatment. There is no entry in table OCCINFO associated with a non-Equal Access call. Non-Equal Access calls are billed as local exchange calls.

Calls using service access codes

The NTX186AB - Equal Access End Office feature package allows the operating company to specify service access codes (SAC). A SAC is a code that replaces a numbering plan area (NPA) in the dialing sequence. Subscribers use SACs to access a particular service provided by an IEC, INC, or operating company.

Valid SACs are of the form N0/1X,

where

- N is a number from 2 to 9
- 0/1 is either 0 or 1
- X is a number from 0 to 9

The codes are datafilled by entering a valid N0/1X code in table EASAC. Note that N11 codes are within the N0/1X range but are invalid SACs. Tuples cannot be changed in table EASAC; they can only be added or deleted.

The only valid SAC call type is

- 1 + N0/1X + NXX + XXXX

If a subscriber dials a SAC using a 10XXX prefix, the call is routed to carrier access code error (CACE) treatment.

> ***Note:*** Prior to this feature package, SAC 800 and 900 were hard-coded into the DMS switch. They should now be datafilled in table EASAC.

Features supported by Equal Access

The NTX186AB - Equal Access End Office implements the following features:

- overlap carrier selection (OCS)
- carrier toll denied (CTD)
- circle digit (CD)

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These features are described in the following sections.

Overlap carrier selection

Because of the complicated and lengthy signaling used for Equal Access calls, the EAEO must be able to complete the majority of this signaling before the subscriber has finished dialing. The OCS feature provides the EAEO with the ability to seize an outgoing trunk to the carrier or the AT, send selection digits to the carrier, and send the ANI digits before the subscriber has finished dialing.

The DMS switch needs the following information to determine the office route to an EAP carrier:

- CAC, either dialed by the subscriber or added by the system software
- call type prefix (0, 1, 01, or 011)
- country code for international calls outside World Zone 1
- area code for international calls inside World Zone 1
- area code and central office code for domestic calls

The OCS feature applies only to FGD EAP carriers, because the DMS-100 switch requires all the digits to select a route and provide the proper outpulse sequence for FGB and FGC carriers.

For domestic calls, OCS begins when all but four digits have been dialed. The office route to the carrier and the digits to be outpulsed for the first stage of outpulsing are determined at this point in the dialing sequence. If the call is routed to an AT, the DMS switch seizes an outgoing trunk and outpulses the call identification, the carrier identification, and the ANI digits. If the call is being routed over direct trunks to the carrier, the DMS switch seizes an outgoing trunk and outpulses the ANI digits. In both cases, the called number is outpulsed after all the digits are dialed.

For international calls, OCS begins after the country code is dialed. The office route to the carrier and the outpulse digits for the first stage of outpulsing are determined at this point in the dialing sequence. The DMS switch seizes an outgoing trunk and outpulses the call identification, the carrier identification, country or region identification, and ANI digits. The called number is outpulsed once all the digits are dialed.

Carriers have the option to choose OCS on all calls, no calls, or certain calls. Field OVERLAP in table OCCINFO controls this selection.

> ***Note:*** When using OCS with an IEC, EAEOs with BCS 19 software loads must ensure that office parameter EA_OVERLAP_CARRIER_SELECTION is set to Y.

Carrier toll denied

With the CTD feature, a subscriber may be denied toll access to up to three carriers. When a subscriber attempts to place a call to a carrier and is denied access, the call is either completed or blocked and sent to an inter-LATA restricted (ILRS) treatment (described in table 3-3). The decision to block a call to a carrier defined as toll denied depends on the characteristics of the call. For example, OA and inward wide area telephone service (INWATS) calls are not blocked.

The CTD feature is added to or deleted from the system software by using the Service Order System (SERVORD) or by modifying table LENFEAT. Table LENFEAT is modified to include the CTD feature by adding the name(s) of the carrier(s) to which a subscriber is denied access.

A call from a line with the CTD feature to a carrier that is not in table LENFEAT is not affected in any way. The information digits do not identify the line as toll denied. Also, local exchange calls are not affected by the CTD feature. Both interexchange and local exchange calls may be allowed to go through or be sent to an ILRS treatment using the special toll denied information digits.

If a call from a line with the CTD feature to a carrier in table LENFEAT is allowed to go through, the information digits indicate that the line is toll denied. These information digits take priority over all others unless the originating line cannot be identified in the DMS switch. This situation occurs when there is an ANI failure or when an ANI test is not performed on a call (for example, on some multiparty lines).

Circle digit

The existing CD feature allows 8- and 10-party line subscribers to make a DD toll call. This capability is provided by assigning a CD, zero to nine, to each member of the party line. Each party is required to dial the CD when making a DD call. The following call types are supported:

- 1 + CD + 7 digits
- 1 + CD + 10 digits
- 0 + CD + 7 digits
- 0 + CD + 10 digits

The office parameter single party DD digit (SPDD_DIGIT) in table OFCENG assigns a CD to single party, two-party, and four-party lines for consistency in the office numbering plan.

With the existing CD feature, 8- and 10-party line subscribers cannot make DD toll calls using an EAP prefix. Also, if SPDD_DIGIT is set to a value other than 0, subscribers with 1FR (single party, flat rate), 2FR (two-party,

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flat rate), or 4FR (four-party, flat rate) line class codes cannot use an EAP prefix.

This feature package introduces the office parameter EA_WITH_CD in table OFCENG, which allows CD subscribers to dial 10XXX+ DD calls.

Originally, the CD was the second number dialed. With the NTX186AB - Equal Access End Office package, if zero is the second digit, a 10XXX call is assumed and the CD is the seventh number dialed.

This feature package supports the following call types:

- 1 + CD + 7 digits
- 1 + CD + 10 digits
- 0 + CD + 7 digits
- 0 + CD + 10 digits
- 10XXX + 1 + CD + 7 digits
- 10XXX + 1 + CD + 10 digits
- 10XXX + 0 + CD + 7 digits
- 10XXX + 0 + CD + 10 digits
- 10XXX + 0 + CD
- 10XXX + 0 + CD + #

Office parameter EA_WITH_CD is initially set to N in all offices.

Carrier identification code expansion

Currently, each carrier is identified by a three-digit code, called the CIC. Because CICs in the series 10X, 15X, and 16X are not used, only up to 970 CICs can be assigned to an FGD carrier.

To prepare for the expected exhaustion of available CICs, the NTX186AB feature package expands the number of assignable CICs to 10 000. The format of CAC, which is the dialing sequence used to access the carrier, is expanded from 10XXX to 101XXXX, where XXX and XXXX are the CICs. This feature package supports the CIC expansion for POTS and MDC environments. It also supports ISDN subscribers which follow standard Equal Access translations.

The transition from three- to four-digit CICs is implemented in three phases. They are described in table 3-7.

Table 3-7
Conversion phases to implement four-digit CICs

Conversion period		Valid CACs	Invalid CACs	Number of CICs available
Current		10XXX	1010X 1015X 1016X	970
Permissive	(part 1)	10XXX 1010XXX	1010X 1015X 1016X	970
	(part 2)	10XXX 1010XXX 1015XXX 1016XXX	1010X 1015X 1016X	2970
Final		101XXXX	10XXX	10 000

During the first part of the permissive period, the end office can process CACs of the form 10XXX and 1010XXX. The three-digit CIC assigned to each carrier is expanded to four digits by adding a leading zero. In this period, CACs of the form 1010X, 1015X, 1016X, 1015XXX, and 1016XXX are unassigned. If the subscriber dials an unassigned code, the call is sent to treatment.

In the second part of the permissive period, CACs if the form 1015XXX and 1016XXX are assigned. Also, CACs of the form 1010X, 1015X, and 1016X are still unassigned to help the end office distinguish between three- and four-digit CICs. When 10, 15, or 16 appears as digits 3 and 4 in the CAC, the end office assumes that a four-digit CIC has been dialed. Any other sequence is assumed to be a three-digit CIC.

In the final period, only four-digit CICs are accepted by the end office. Any call with a three-digit CIC is sent to treatment. Note that these changes are transparent to subscribers who use their PICs to complete interexchange calls.

Implementing four-digit CICs in an EAEO

The three transition periods are controlled by office parameter EAEO_FOUR_DIGIT_CIC_STATUS and by table CICSIZE4. The office parameter can take the following three values:

- THREEDIG: This state corresponds to the current period in table 3-7 and indicates that only three-digit CICs are used.
- PERMISSIVE: This state corresponds to the permissive period in table 3-7 and indicates that both three- and four-digit CICs are used.

- FOURDIG: This state corresponds to the final period in table 3-7 and indicates that only four-digit CICs are used.

Table CICSIZE4 contains the trunk groups which use four-digit CICs. Trunk groups that do not appear in this table are assumed to use three-digit CICs. When an interexchange call is made through an AT, the converted EAEO transmits four-digit CICs to the AT if the trunk group selected is datafilled in table CICSIZE4. If the EAEO receives a three-digit CIC from the subscriber, it appends a leading zero before outpulsing to the AT. If the EAEO receives a four-digit CIC not datafilled in table CICSIZE4 and the leading digit is not zero, the EAEO produces log DFIL147.

For calls routed to an INC, the converted EAEO transmits either three- or four-digit CICs, whether or not the trunk group is datafilled in table CICSIZE4.

When full four-digit CIC conversion is achieved, all trunks at the EAEO carry four-digit CICs. Table CICSIZE4 then becomes useless and does not need to be consulted during translation. Office parameter EA_TAB_CICSIZE4_OBSOLETE is then set to Y to specify that table CICSIZE4 is no longer required.

Implementing four-digit CICs in a CCS7 EAEO

EAEO calls can be routed to the IEC either directly over CCS7 ATC trunks or indirectly through an AT over CCS7 IT trunks. The call is established by sending an outgoing initial address message (IAM) to the IEC. To support four-digit CICs over CCS7 trunk groups, the optional transit network selection (TNS) parameter, which contains the CIC, must be changed. This parameter is included in the IAM for national and international calls routed to the AT and for international calls routed directly to the IEC. With this feature package, the TNS parameter can contain a three- or four-digit CIC.

When office parameter EA_TAB_CICSIZE4_OBSOLETE is set to N, a four-digit CIC is included in the TNS parameter if the CCS7 IT or ATC trunk group is datafilled in table CICSIZE4. If the subscriber dials a three-digit CIC and the CCS7 trunk group is datafilled in table CICSIZE4, the end office appends a leading zero to the CIC dialed and includes the CIC in the TNS parameter. If the trunk group is not datafilled in table CICSIZE4, a three-digit CIC is included in the TNS parameter.

If the subscriber dials a four-digit CIC not included in table CICSIZE4, the leading digit of the CIC is removed to form a three-digit CIC included in the TNS parameter. When office parameter EA_TAB_CICSIZE4_OBSOLETE is set to Y, the TNS parameter always includes a four-digit CIC.

Network changes

The network changes for the CIC expansion are implemented in a specific order. Some of these changes are done per switch, while some changes are done per trunk group or per service control point (SCP) and signaling transfer point (STP) link. For example, an end office may be converted to accept four-digit CICs but an AT may have only a few trunk groups that accept four-digit CICs.

The changes introduced by this feature package affect end offices only. However, other elements in the network, such as ATs and SCPs, will have to be updated. The following procedure lists the network changes that have to be implemented.

Network changes to implement Equal Access

Step	Action
1	Convert the SCP database and the service management system to store both three- and four-digit CICs and to respond with either three- or four-digit CICs.
2	Convert ATs to accept four-digit CICs on trunk groups from upgraded EAEOs but still accept three-digit CICs from non-upgraded ones.
3	Convert EAEOs to accept three- and four-digit CICs during a permissive period and then accept only four-digit CICs when that period ends.
4	Convert EAEOs to transmit four-digit CICs on upgraded trunk groups to the AT.
5	For international calls only, convert IEC switches to accept four-digit CICs from upgraded trunk groups.

This feature package covers steps 3 and 4. Step 2 is described in chapter 4 of this document. Steps 1 and 5 are shown to provide the operating company with a complete picture of the changes required.

An overview of a network undergoing conversion is shown in figure 3-1. In LATA 1, none of the EAEOs or trunk groups have been converted to four-digit CICs. In LATA 2, one office has been converted. A converted office is an office that accepts permissive or full four-digit CICs or an office that has some trunk groups or STP/SCP links that carry four-digit CICs.

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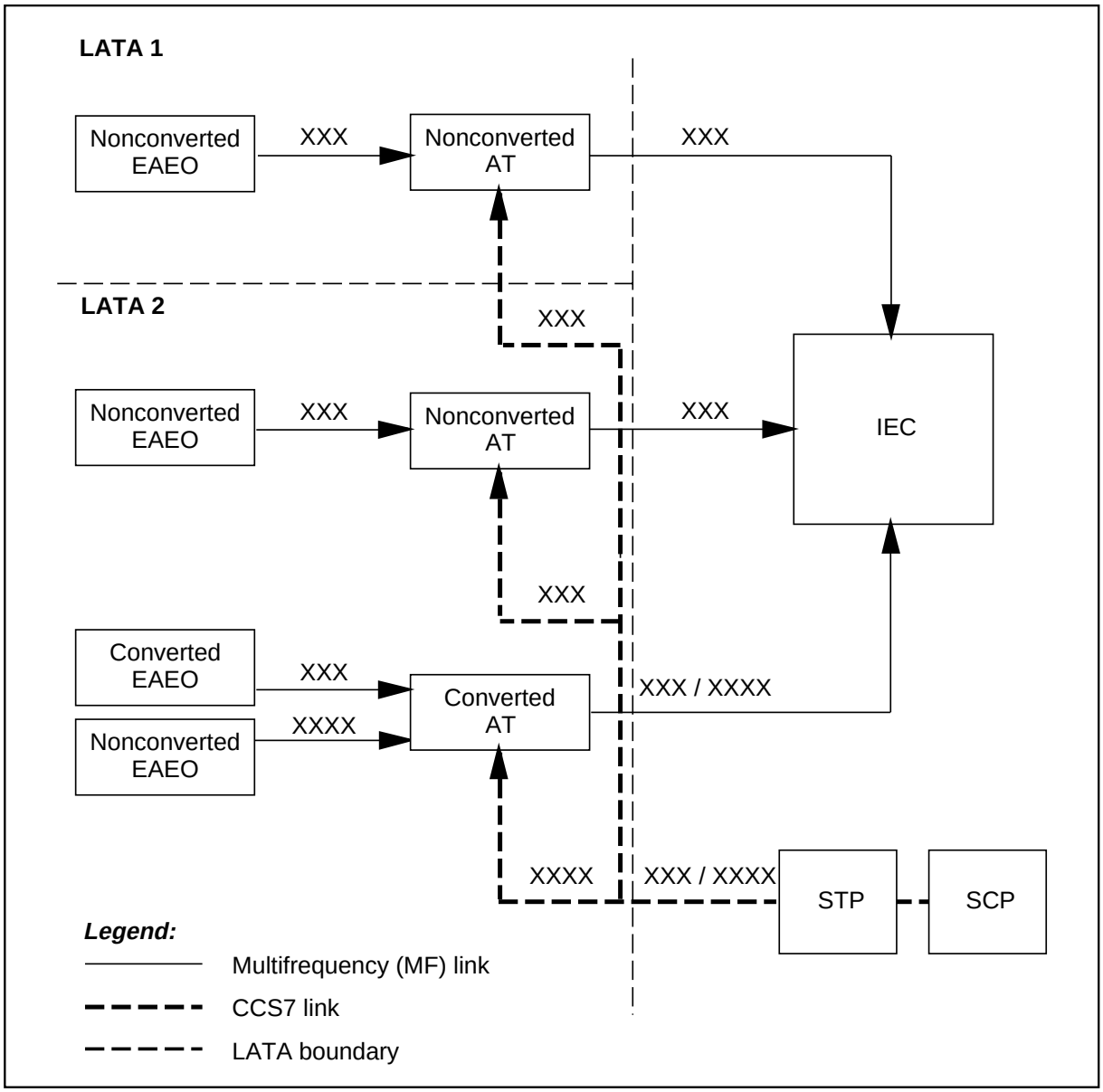
Figure 3-1
Network undergoing conversion



Impact of the CIC expansion

The size of the digit register is limited to 24. Expanding the number of digits in the CIC means that the CAC uses 7 digits (101XXXX) instead of 5 (10XXX). Because of this increase, the number of MDC prefix digits that may be used for an international call is reduced from three to two. The following example shows the new format of MDC international calls:

YY-101XXXX-011-44-1234567890

where
YY are the MDC prefix digits

Implementing the permissive dialing phase

The following table lists the actions required to implement the permissive dialing phase of the CIC expansion.

Implementing the permissive dialing phase

Step	Action
1	Add tuples to the standard pretranslator for the seven-digit CACs to be translated.
2	Set office parameter EAEO_FOUR_DIGIT_CIC_STATUS to PERMISSIVE.
3	Reload central control data in all the extended peripheral modules (such as line modules and line concentrating modules) serving line control devices. This operation will change digit collection in the peripherals.
4	Add the trunk name to table CICSIZE4 for the trunk groups that carry four-digit CICs.

Implementing the final dialing phase

The following table lists the actions required to implement the final dialing phase of the CIC expansion.

Implementing the final dialing phase

Step	Action
1	Make sure all four-digit CICs are datafilled in table OCCINFO.
2	Change the standard pretranslator in table STDPRTCT to translate seven-digit CACs.
3	Set office parameter EAEO_FOUR_DIGIT_CIC_STATUS to FOURDIG.
4	Reload central control data in all the extended peripheral modules (such as line modules and line concentrating module) serving line control devices. This operation will change digit collection in the peripherals.
5	Revise table CICSIZE4 to add the trunk groups which carry four-digit CICs. If all trunks have been converted to carry four-digit CICs, set office parameter EA_TAB_CICSIZE4_OBSOLETE to Y. In this case, you do not need to datafill table CICSIZE4.

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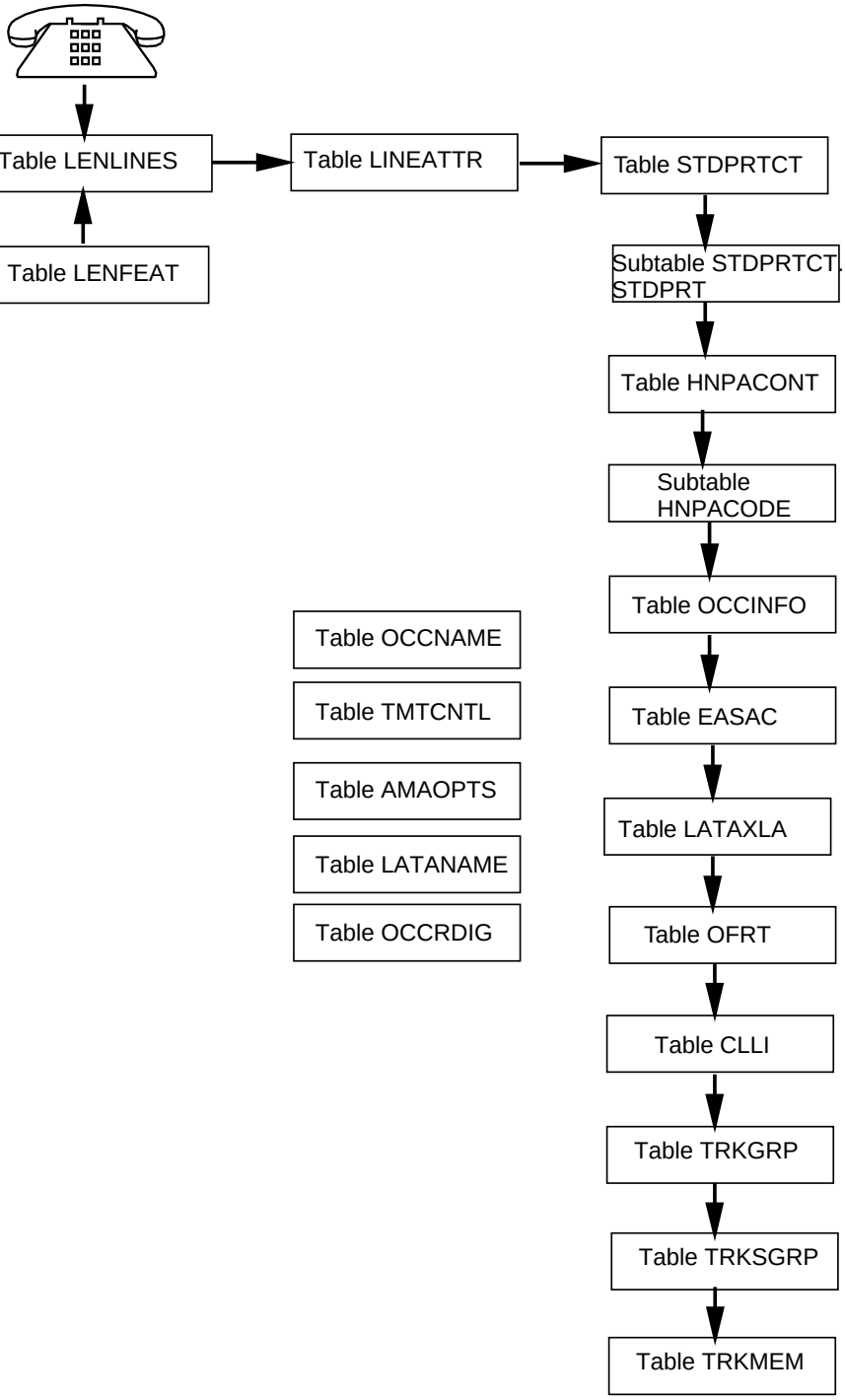
Translations table flow

The NTX186AB - Equal Access End Office translation process is shown in the flowchart that follows.

NTX186AB - Equal Access End Office (continued)

Table flow for NTX186AB - Equal Access End Office



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Package limitations and restrictions

The limitations and restrictions described in the following sections apply to the NTX186AB - Equal Access End Office feature package. They are listed by subject.

800+ feature (Canada)

Equal Access is not compatible with the Canadian 800+ feature. The 800+ feature differs from the traditional 800 feature. Routing translation for 800+ calls is done in the network database outside the switch. The network database stores all the 800 numbers to simplify administration. Without the 800+ feature, an 800 number has to be entered in the translation tables of all DMS toll switches serving this number.

> ***Note:*** The 800+ service is different from the enhanced 800 (E800) service.

Dynamically Controlled Routing (Canada)

Dynamically Controlled Routing (DCR) reserves idle trunks in trunk groups to provide routes for overflowing traffic. The trunks are separated by one or two links from an originating toll switch. DCR can route traffic from an end office to another end office to optimize the use of the DMS switch and trunks. DCR should not be used with Equal Access because it interferes with Equal Access billing and network hierarchy. Equal Access calls can only be routed from an end office to an AT or directly to the IEC/INC. They cannot be routed from an end office to another end office.

Toll Call Management Services (Canada)

Toll Call Management Services (CMS) is equivalent to CLASS in the United States. It is a set of services that capitalize on the fact that information can be transmitted to the subscriber on both the calling and called line numbers. Toll CMS is primarily targeted at single-line users, such as small business and residential, giving subscribers more control over their calls. Toll CMS should not be used with Equal Access because its functionality is provided over a toll network, thus interacting directly with Equal Access.

Abbreviated dialing

The following limitations apply to abbreviated dialing:

- Abbreviated dialing does not allow more than one speed calling code to be translated.
- Abbreviated dialing cannot provide access to FGC carriers when AD1 (10XXX+#) is dialed.

FGB signaling on ATC trunks

The following limitations apply to FGB signaling on ATC trunks:

- The outpulsing of ANI digits is not supported for FGB calls on ATC trunks with the exception of TOPS-to-ATC FGB calls.
- In a three-way call, when party A (the controlling party) flashes with party B on hold, dials 950+WXXX, and flashes immediately after dialing, there is no reselection of a second trunk if the first trunk fails. That leg of the call is taken down, treatment is given, and a TRK121 log generated.

Overlap carrier selection

The following limitations apply to the OCS feature:

- Equal Access translation does not allow more than six digits in the recursive translation. Since OCS starts outpulsing when all but four digits have been collected, there is a maximum number of digits that can be datafilled in all Equal Access pretranslators. This maximum is 1+6 digits for a 1+10 digit call, and 1+3 digits for a 1+7 digit call. The call will not complete properly if this maximum is exceeded.
- An international call from a rotary phone can time-out and go to reorder. This situation occurs for Equal Access MF to ISDN user part (ISUP) interworking calls when OCS is enabled in the EAEO. This problem can be prevented by disabling OCS in the EAEO.
- The OCS feature is not supported on P2 and PX trunks.

Carrier toll denied

The CTD feature has the following limitations:

- It applies only to lines in table LENLINES.
- It is incompatible with the toll denied (TDN) feature in table LENLINES and cannot be applied to the same line.
- It is incompatible with the toll diversion (TDV) feature.

Circle digit

The following limitations apply to the CD feature:

- This feature does not support any international call types or the following operator call types:
  - 10XXX + 00-
  - 00-
- This feature does not support OCS for the following call types:
  - 0 + CD + 7 digits
  - 1 + CD + 7 digits

- 10XXX + 0 + CD + 7 digits
- 10XXX + 1 + CD + 7 digits

- When EA_WITH_CD is set to Y, the CD0 option cannot be assigned to 8- and 10-party lines. If SERVORD is used, the following message appears on the screen and the change to the line is disallowed:

  CD0 INCOMPATIBLE WITH EA_WITH_CD

- If an attempt is made to change the value of SPDD_DIGIT to 10 when EA_WITH_CD is set to Y, the following message appears at the MAP (maintenance and administration position) terminal and the parameter remains unchanged:

  THIS VALUE INCOMPATIBLE WITH EA_WITH_CD

Corridor calls

The following calls are invalid corridor calls:

- 01 + country code + national number
- 10XXX + 01 + country code + national number
- 011 + country code + national number
- 10XXX + 011 + country code + national number
- 10XXX + #
- 950-10XXX

The fields INTNTL and AD1 in table OCCINFO must be set to N to indicate that the preceding call types are denied for a local exchange carrier.

Privilege calls

The following call types are not datafilled in table LATAXLA and are not considered privilege call types:

- 0-
- 00-
- 10XXX + 0-
- 10XXX + 00-
- 10XXX + #
- 01 + country code + national number
- 10XXX + 01 + country code + national number
- 011 + country code + national number
- 10XXX + 011 + country code + national number
- 950-10XXX

Calls datafilled as privilege but dialed with a 10XXX prefix are routed as Equal Access interexchange calls using the dialed IEC.

A call datafilled as privilege but dialed with the 10XXX prefix of the operating company is routed as a non-Equal Access, local exchange call in offices that have both corridor and privilege call types.

Non-Equal Access calls

Only local exchange calls can be datafilled as non-Equal Access. The following call types are not datafilled in table LATAXLA and are not considered non-Equal Access call types:

- 0-
- 00-
- 10XXX + 0-
- 10XXX + 00-
- 10XXX + #
- 01 + country code + national number
- 10XXX + 01 + country code + national number
- 011 + country code + national number
- 10XXX + 011 + country code + national number
- 950-10XXX

EAEO IEC/INC event status enhancement

The following limitations apply to the IEC/INC event status enhancement provided by this feature package:

- FGB is not considered in the implementation of the IEC/INC call event status.
- The possibility exists that call event status 07 will be recorded when call event status 01 or 03 should be recorded. This situation can happen if the calling party goes on-hook after the ANI digits are outpulsed but before the acknowledgment wink is received, or before there is a time-out while the EAEO waits for the acknowledgment wink.
- For 10XXX + # and 950-10XXX calls, call event 07 masks call event 01.
- Call event status 13 is not supported on international calls using three-wink signaling.
- Call event status 02 may mask call event 03 for four-wink international calls.

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Feature interactions

The NTX186AB - Equal Access End Office package interacts with other features. These interactions are listed below.

FGB signaling on ATC trunks

When the ANI option in table TRKGRP is set to N for the ATC trunk, a trouble code of CARRIER_OFFHK_time-out appears in the TRK121 log. If ANI is set to Y, a trouble code of ANI_TIME_OUT appears in the TRK121 log.

Equal Access in the MDC environment

For 950 calls, the Equal Access selector in table STDPRT and the NET selector in table IBNXLA are incompatible. Use the FGB selector in table STDPRT or the ROUTE selector in table IBNXLA.

The MDC features that are internal to the MDC environment (for example, Direct Inward Dial) and MDC features that are on the terminating side of POTS calls (for example, Call Waiting) do not interact with the NTX186AB - Equal Access End Office feature package. However, this package interacts with the following MDC features:

- Three-Way Calling
- Speed Calling 1
- Speed Calling 2
- Network Speed Calling
- Six-Party Conference
- Call Forwarding
- Call Transfer
- Custom Calling
- Direct Inward System Access
- Automatic Route Selection

Overlap Carrier Selection feature

When the OCS and Line to DP Trunk Overlap outpulsing features are both used in the same office (EA_OCS_AND_DP_OVLP_NEEDED = Y), the real time increases for processing 7- and 10-digit calls that do not use either form of overlap outpulsing.

Also, even though both of these outpulsing features can be used in the same office, table LMOVCODE can be used only for one type of outpulsing.

Initially, the line module and line trunk controller peripherals used the LMOVCODE table to determine which NXX codes should be completed when Line to DP Trunk Overlap outpulsing is used. Now, the line

peripherals can also use LMOVCODE to determine which NXX codes do not require OCS outpulsing. The OC must decide for which type of outpulsing the LMOVCODE table will be used.

00- dialing

Subscribers with lines that have the CTD feature can still make 00- calls to their PIC. The information digits outpulsed for the call are 08.

Activation/deactivation by the end user

Activation/deactivation is not applicable for this feature package.

Billing

Billing for NTX186AB - Equal Access End Office is described in the following sections.

Originating billing

The DMS switch uses two call codes to produce originating access records for Equal Access calls:

- call code 110, inter-LATA station paid, for calls to an IEC and INC
- call code 114, inter-LATA wide area telephone service (WATS) billing number, for WATS Equal Access calls

Structure codes are associated with each call code. A structure code is determined, among other characteristics, by the length of the call. A call is a normal duration call when it is disconnected *before* the second midnight after it was initiated. A call is a long duration call when it is disconnected *after* the second midnight after it was initiated.

Terminating billing

Terminating access records are created for all completed Equal Access calls routed directly to the EAEO from an IEC or INC on ATC trunk groups with SIGTYPE set to EAPLAN, BELLI, or BELLII in table TRKGRP. Terminating records are also created for unanswered calls, calls sent to a treatment, and calls blocked by network management under the following conditions:

- Table AMAOPTS has the OPTION field set to UNANSTOLL and the AMASEL field set to ON.
- Table AMAOPTS has the UNANS_LOCAL field set to ON.
- Table ATTCODES has the required call codes.

The DMS switch uses call code 119 (terminating access record) and the associated structure codes to produce terminating access records for Equal Access calls. The length of the call (normal or long duration) and the

datafill in field TERMREC of table OCCINFO determine the structure code to be used.

Terminating billing is optional. Option OCCTERM in table AMAOPTS must be set to ON to create terminating access records.

For more information about Equal Access originating and terminating billing codes, see *Bellcore Format Automatic Message Accounting Reference Guide*, 297-1001-830.

> ***Note:*** The standard Equal Access billing records are supported for Equal Access calls originating from and terminating to a P2/PX trunk group. Call Code 110 billing records are generated for 00-, 10XXX+00-, and 10XXX+0- calls. The Called Number fields in the records generated for these types of calls are set to all zeros.

FGD CIC expansion

The IEC/INC prefix field of the standard interexchange AMA record is modified to accomodate four-digit CICs by defining characters 1 to 4 as the IEC/INC identification. Previously, the first character was defined as padding (0). The billing records that include the IEC/INC prefix are the following:

- 110 inter-LATA station paid
- 111 inter-LATA WATS station detail
- 113 inter-LATA WATS automatic flexible reroute to WATS
- 114 inter-LATA WATS billing number
- 115 inter-LATA WATS automatic flexible reroute to DDD
- 117 inter-LATA Datapath
- 119 terminating access record
- 120 originating LATA overflow counts
- 121 Datapath terminating access record

Following is an example AMA record for an originating FGD call from a POTS line. The IEC/INC PREFIX field contains the four-digit code.

```
HEX ID:AA  STRUCTURE CODE:00625C  CALL CODE:110C
SENSOR TYPE:036C  SENSOR ID:0000000C  REC OFFICE TYPE:036C
REC OFFICE ID:0000000C  DATE:00604C  TIMING IND:00000C
STUDY IND:0000000C  ANSWER:0C  SERVICE OBSERVED:0C
OPER ACTION:0C  SERVICE FEATURE:000C  ORIG NPA:613C
ORIG NUMBER:6211233C  OVERSEAS IND:1C  TERM NPA:00613C
TERM NUMBER:8881234C  ANSWER TIME:1423651C
ELAPSED TIME:000000015C  IEC/INC PREFIX:12341C  CC
DATE:00504C
CC TIME:1345623C  ELAPSED CC:000000023C IEC/INC
EVENT STATUS:010C TRUNK GROUP NUMBER:00230C
ROUTING INDICATOR:0C DIALING INDICATOR:7C  ANI INDICATOR:1C
```

Event status field

The IEC/INC call event status field of the standard format inter-LATA AMA record consists of the following four binary coded decimal (BCD) characters in the form 0XXC,

where

- 0 is padding
- XX is a record of the last event that occurred in the call process prior to disconnect
- C is the sign character

Before this feature package was implemented, the call events supported by the DMS-100 Family switch were 01, 03, 05, 06, 08, 09, 10, and 11. For more information about these call events, see *Automatic Message Accounting - Northern Telecom Format*, 297-1001-119. This feature package adds the following events:

- 02 abandon or time-out before dialing is complete (originating LATA)
- 04 time-out waiting for acknowledgment wink (originating LATA)
- 07 acknowledgment wink received (originating LATA)
- 12 operator signaling; time-out waiting for off-hook from IEC/INC after receipt of called number (originating LATA)
- 13 off-hook rather than second start dial wink from INC (originating LATA)

NTX186AB - Equal Access End Office (continued)

Originating overflow counts

The DMS switch generates call code 120 (originating LATA overflow counts) for calls that cannot be completed because no outgoing trunk is available. Records are produced periodically, according to needs of the operating company. Overflow counts are kept for each IEC and INC. An overflow count is increased whenever the system software encounters pseudo-common language location identifier (CLLI) named EAPEG in a route list, such as in table OFRT. Call code 120 contains information for up to four IECs and INCs.

The EAPEG tuple always follows direct routes to the carrier. Similarly, the EAPEG tuple never follows indirect routes to the carrier. The following is an example tuple with an EAPEG entry:

```
201  (S D ATCTOINC) (S D EAPEG) $
```

A COLD RESTART must be performed after the EAPEG tuple is datafilled in the CLLI table.

Billing for FGB on ATC Trunks

The FGB selector in table STDPRTCT must be used for FGB calls over ATC trunks to produce call code 134 in the AMA record.

Station Message Detail Recording

NTX186AB - Equal Access End Office does not affect Station Message Detail Recording (SMDR).

Datafilling office parameters

The following table shows the office parameters used by NTX186AB - Equal Access End Office. For more information about office parameters, see *The Office Parameters Reference Manual*, 297-1001-455.

NTX186AB - Equal Access End Office (continued)

Office parameters used by NTX186AB - Equal Access End Office

Table name **Parameter**	**Explanation and action**
OFCENG DEFAULT_CARRIER_OR_TREAT	This parameter is required for an EAEO and specifies the carrier name or treatment which is used when a subscriber dials a toll call without having a PIC or dialing a 10XXX prefix. If the call is to be routed to a carrier, enter C and then the carrier name. If the call is to be routed to a treatment, enter T and then the treatment name.
OFCENG EA_OCS_AND_DP_OVLP_NEEDED	This parameter is required for an EAEO and specifies whether both the OCS and Dial Pulse Trunk Outpulsing features can exist in the same switching unit. When this parameter is set to Y, both features can be used in an office. If this parameter is set to N and office parameter EA_OVERLAP_CARRIER_SELECTION is set to Y, then line-to-DP trunk overlap outpulsing will not be available. If only OCS is needed in a switching unit, then the real time impact can be greatly reduced on non-OCS calls. If the parameter is left at the default value of Y, then both forms will work but there will be no real time savings. As of BCS35, the restart requirement is removed when you make changes.

-continued-

NTX186AB - Equal Access End Office (continued)

Office parameters used by NTX186AB - Equal Access End Office (continued)

Table name **Parameter**	**Explanation and action**
OFCENG EA_OCS_DIGCOL_METHOD	This parameter is required in an EAEO with the OCS feature. It determines the method of digit collection. The four different methods of digit collection are: ▪ NOAMBI (no ambiguous codes) ▪ PFXALL (ambiguous codes) All 10-digit numbers must be dialed with a prefix and 7-digit numbers must not be dialed with a prefix. ▪ PFXAMB (ambiguous codes) The prefix method is used for resolving ambiguities. ▪ TIMING Prefix cannot be relied on to give any information; OCS will not apply to ambiguous calls using this method. As of BCS35, the restart requirement is removed when you make changes.
OFCENG EA_OVERLAP_CARRIER_SELECTION	This parameter is required in an EAEO with the OCS feature. It determines what type of digit collection is to be performed by the line module. If the line module is to perform digit collection for Equal Access OCS, enter Y. Enter N to specify normal digit collection is done. As of BCS35, the restart requirement is removed when you make changes.
OFCENG EA_TAB_CICSIZE4_OBSOLETE	This office parameter specifies whether table CICSIZE4 is required. Set this parameter to N during the permissive phase of the CIC expansion. During this phase, table CICSIZE4 contains trunk groups with 4-digit CICs. When all CICs are converted to 4 digits, set this parameter to Y. Table CICSIZE4 is not used when this parameter is set to Y.

-continued-

NTX186AB - Equal Access End Office (continued)

Office parameters used by NTX186AB - Equal Access End Office (continued)

Table name **Parameter**	**Explanation and action**
OFCENG EA_WITH_CD	This parameter specifies whether the EAEO has the CD feature. The EA_WITH_CD parameter set to N implies the following: ▪ Option CD 0 (CD0) can be assigned to 8- and 10-party lines in table LENLINES. ▪ Lines that have an associated CD cannot dial a 10XXX prefix. (If a 10XXX prefix is dialed, the call is routed to an OC-defined treatment.) ▪ A PIC can be assigned to a line that has a CD. ▪ Office parameter SPDD_DIGIT in table OFCENG can be set to a value from 0 to 10. Office parameter EA_WITH_CD set to Y implies the following: ▪ Option CD0 cannot be added to 8- and 10-party lines. (Note that 10-party lines are limited to 9 members.) ▪ Lines that have an associated CD can make DD toll calls using a 10XXX prefix. ▪ A PIC can be assigned to a line that has a CD. ▪ Office parameter SPDD_DIGIT in table OFCENG cannot be set to 10. (A value of 10 assigns 1FR, 2FR, and 4FR subscribers a CD of 0. With SPDD_DIGIT set to 0, 1FR, 2FR, and 4FR subscribers are not required to dial a CD.)

-continued-

NTX186AB - Equal Access End Office (continued)

Office parameters used by NTX186AB - Equal Access End Office (continued)

Table name **Parameter**	**Explanation and action**
OFCENG EAEO_FOUR_DIGIT_CIC_STATUS	This parameter indicates the transitional phases of the CIC expansion. Values are: ▪ THREEDIG (initial state) Only 3-digit CICs (CACs of the form 10XXX) are valid. ▪ PERMISSIVE (transitional phase) Both 3- and 4-digit CICs (CACs of the form 10XXX, 1010XXX, 1015XXX, and 1016XXX) are valid. ▪ FOURDIG (final phase) Only 4-digit CICs are valid. As of BCS35, the restart requirement is removed when you make changes.
OFCENG NUMCPWAKE	This parameter is required in all switching units and specifies the maximum number of call process wakeups in the system. For FGB signaling on ATC trunks, this parameter should be increased to ensure that 5-second timing is done on every originating FGB call.
OFCOPT EA_LATANAME_IN_SERVORD	This parameter is used to determine whether or not the LATA name is prompted for by SERVORD when new lines are added. This parameter should always be set to Y.
OFCSTD EAEO_REC_1ST_PRE_WK_TIME	This parameter specifies the time (1 to 255), in 160-ms intervals, of the first pre-wink delay associated with outpulsing from an EAEO. The default is 100 (16 s).
OFCSTD EAEO_REC_2ND_PRE_WK_TIME	This parameter specifies the time (1 to 255), in 160-ms intervals, of the second pre-wink delay associated with outpulsing from an EAEO. The default is 175 (28 s).
	End

NTX186AB - Equal Access End Office (continued)

Datafill sequence

The following tables require datafill to implement the NTX186AB - Equal Access End Office feature package. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for NTX186AB - Equal Access End Office

Table	Form	NTP	Purpose of table
OCCNAME	2356A-B	297-1001-451	Table OCCNAME (other common carrier name) lists the connected carriers and establishes the spelling standard for other tables requiring the carrier name.
LATANAME	2358A-B	297-1001-451	Table LATANAME (LATA name) lists the names of the LATAs served by the DMS switch.
TRKGRP (ATC)	2156AI	297-1001-451	Table TRKGRP (ATC) (AT to carrier trunk group) contains information about each ATC trunk group in the EAEO.
TRKGRP (OP)	2156H	297-1001-451	Table TRKGRP (OP) (outgoing and two way from local or toll to TOPS/TSPS trunk group) contains information about each OP trunk group.
TRKGRP (P2)	2156P	297-1001-451	Table TRKGRP (P2) (trunk group) contains information about each P2 trunk group.
TRKGRP (PX)	2156AE	297-1001-451	Table TRKGRP (PX) (trunk group) contains information about each PX trunk group.
OFRT	2431A-C	297-1001-451	Table OFRT (office route) contains route lists that are pointed to from tables other than the home NPA code subtable (HNPACONT.HNPACODE) or the foreign NPA code subtable (FNPACONT.FNPACODE).
OCCINFO	2355A-B	297-1001-451	Table OCCINFO (other common carrier information) defines the attributes for the carriers serving a DMS switch and screens calls for carrier compatibility.

- continued -

NTX186AB - Equal Access End Office (continued)

Datafill tables required for NTX186AB - Equal Access End Office (continued)

Table	Form	NTP	Purpose of table
LINEATTR	2208A-B	297-2101-451	Table LINEATTR (line attribute) defines the line attribute indexes that are applicable to an office. Line attributes are actually assigned to regular lines in table LENLINES, and to MDC lines and attendant consoles in table IBNXLA.
LATAXLA	2359A-B	297-1001-451	Table LATAXLA (Equal Access LATA translation) defines the attributes of domestic calls (inter-LATA or intra-LATA, interstate or intrastate).
OCCRDIG	2357A-B	297-1001-451	Table OCCRDIG (other common carrier regional digit) provides the regional code for outpulsing to the AT or INC for calls to an NPA within World Zone 1, but outside the continental United States.
STDPRTCT	2465	297-1001-451	Table STDPRTCT (standard pretranslator control) lists the name of each standard pretranslator subtable defined by the operating company.
STDPRTCT. STDPRT	2467A-B	297-1001-451	Subtable STDPRTCT.STDPRT (standard pretranslator) is the first table to be indexed by the received leading digits when the originating line attribute (from table LINEATTR) or trunk (from table TRKGRP) specifies a pretranslator name.
LENFEAT	2210A-B	297-2101-451	Table LENFEAT (line feature) lists the features assigned to a specific line in table LENLINES.
AMAOPTS	2333A-B	297-1001-451	Table AMAOPTS (AMA options) controls the activation and scheduling of the recording options for local, tool, and high-revenue calls.
VIRTGRPS	2245A-B	297-2001-451	Table VIRTGRPS (virtual facility groups) assigns options to VFGs.
IBNXLA	2228A-C	297-2001-451	Table IBNXLA stores the data required for the translation of calls from an MDC station.

- continued -

Datafill tables required for NTX186AB - Equal Access End Office (continued)			
Table	**Form**	**NTP**	**Purpose of table**
TMTCNTL	2440A-B	297-1001-451	Table TMTCNTL (treatment codes) provides route lists for a preset list of treatments.
CXGRP	2160A-B	297-2101-451	Table CXGRP (customer group options) is required in local or combined local/toll switching units to define the options associated with a PX digital trunk group.
EASAC	2102	297-1001-451	Table EASAC (Equal Access service access codes) allows the operating company to specify the N0X and N1X codes that are to be treated as SACs.
CICSIZE4		297-1001-451	Table CICSIZE4 (carrier identification codes with 4 digits) identifies trunk groups with 4-digit CICs. This table is used only during CIC expansion transitional phase.
End			

Datafilling table OCCNAME

Table OCCNAME lists the carriers serving the EAEO. It also establishes the spelling standard for other tables requiring the carrier name (OCCINFO, TRKGRP, and STDPRTCT.STDPRT). The following procedure shows the datafill for table OCCNAME. See *Common Customer Data Schema*, 297-1001-451, for a detailed description of the table.

Datafilling table OCCNAME		
Field	**Subfield**	**Explanation and action**
OCCNAME		*Other common carrier name* Enter the carrier name or a 1- to 16-character alphanumeric abbreviation of the carrier name.

Datafill example for table OCCNAME

The following example shows sample datafill for table OCCNAME. In this example, four carriers serve the EAEO.

NTX186AB - Equal Access End Office (continued)

Datafill example for table OCCNAME

Example of a MAP display:

```
OCCNAME
-------

C111
C222
C333
C444
```

Datafilling table LATANAME

Table LATANAME lists the name, defined by the operating company, of the LATAs served by the EAEO. Up to 31 LATAs can be entered. A null LATA (NILLATA) is added internally as the first LATA in the list. This tuple does not appear in the table printout. The following procedure shows the datafill for table LATANAME. See *Common Customer Data Schema*, 297-1001-451, for a detailed description of the table.

Datafilling table LATANAME

Field	Subfield	Explanation and action
LATANAME		*LATA name* Enter the 1- to 16-character alphanumeric name of the LATAs used in this office.
LATANUM		*LATA number* Enter the LATA number (000 to 999) for the LATANAME.

Datafill example for table LATANAME

The following example shows sample datafill for table LATANAME. In this example, four LATAs are used in the EAEO.

Datafill example for table LATANAME

Example of a MAP display:

```
LATANAME      LATANUM
--------      -------

L123          123
L456          456
LATA1         789
LATA2         759
```

Datafilling table TRKGRP (ATC)

Table TRKGRP (ATC) contains data associated with each ATC trunk group existing in the EAEO. An ATC trunk can be incoming, outgoing, or

two-way. The following procedure shows the datafill for table TRKGRP (ATC). This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a detailed description of the table.

Datafilling table TRKGRP (ATC)

Field	Subfield	Explanation and action
	CARRNM	*Carrier name* Enter a carrier name as defined in table OCCINFO.
	SIGTYPE	*ANI signaling type* Enter the signaling type (BELLI, BELLII, EAPLAN, FGB) for this trunk group.

Datafill example for table TRKGRP (ATC)

The following example shows sample datafill for table TRKGRP (ATC). Trunk ISUP2WC111 is a two-way ATC trunk. Signaling used on this trunk is FGD EAP. Carrier name field (CARRNM) is set to C111 and SIGTYPE is set to EAPLAN.

Datafill example for table TRKGRP (ATC)

Example of a MAP display:

```
   GRPKEY
                                                          GRPINFO
-------------------------------------------------------------------

ISUP2WC111
 ATC 0 NPDGP NCRT 2W TM MIDL NPRT NSCR 619 C111 Y EAPLAN Y N
COMB N $
```

Datafilling table TRKGRP (OP)

Table TRKGRP (OP) contains data associated with each OP trunk group existing in the EAEO. The following procedure shows the datafill for table TRKGRP (OP). Only those fields that apply to Equal Access are listed below. See *Common Customer Data Schema*, 297-1001-451, for a detailed description of the other fields.

NTX186AB - Equal Access End Office (continued)

Datafilling table TRKGRP (OP)		
Field	**Subfield**	**Explanation and action**
EADATA		*Equal Access data* This field is composed of subfields EA, EAOSS, and RTEVIAAT.
	EA	*Equal Access selector* Enter Y when Equal Access signaling (double ANI digits) is required. Otherwise, enter N.
	EAOSS	*Exchange access operator services signaling* Enter Y if EAOSS is to be used on the trunk. Otherwise, enter N. This field is displayed only when EA = Y.
	RTEVIAAT	*Route via access tandem* Enter Y if the trunk is between an EAEO and a TOPS AT. Otherwise, enter N. This field is displayed only when EA = Y.

Datafill example for table TRKGRP (OP)

The following example shows sample datafill for table TRKGRP (OP). Trunk LNTOPS2 is located between an EAEO and a TOPS AT (RTEVIAAT = Y). It requires Equal Access signaling. The last three entries show the EA, EAOSS, and RTEVIAAT fields.

Datafill example for table TRKGRP (OP)

Example of a MAP display:

```
 GRPKEY
                                                        GRPINFO
-------------------------------------------------------------------
LNTOPS2
  OP 11 TLD NCRT NIL MIDL COMB MIX REV TERMHOLD N OG Y Y Y $
```

Datafilling table TRKGRP (P2)

Table TRKGRP (P2) contains data associated with each P2 trunk group existing in the EAEO. The following procedure shows the datafill for table TRKGRP (P2). This procedure contains only those fields that apply to this package. See *Common Customer Data Schema,* 297-1001-451, for a description of the other fields.

NTX186AB - Equal Access End Office (continued)

Datafilling table TRKGRP (P2)

Field	Subfield	Explanation and action
	EA	*Equal Access* Enter Y for EAEO. If Y is entered, the PIC, CHOICE, and LATANM fields must also be datafilled. Enter N (the default value) for a non-EAEO. If this field is set to N and the end office is an EAEO, all outgoing calls are treated as non-Equal Access calls. Call routing is based on standard translations (HNPACODE), and non-Equal Access billing is used.
	PIC	*Primary inter-LATA carrier* If field EA = Y, enter an IEC or INC name, as defined in table OCCNAME. If EA = N, leave this field blank.
	CHOICE	*Choice* If EA = Y, enter Y if 10XXX dialing is allowed. Otherwise, enter N. If EA = N, leave this field blank.
	LATANM	*LATA name* If EA = Y, enter a LATA name specified in table LATANAME. If EA = N, leave this field blank.

Datafill example for table TRKGRP (P2)

The following example shows sample datafill for table TRKGRP (P2). In this example, EA is set to Y, PIC is set to C111, CHOICE is set to Y, and LATANM is set to L123.

Datafill example for table TRKGRP (P2)

Example of a MAP display:

```
 GRPKEY
                                                       GRPINFO
________________________________________________________________
   FRED
     P2 0 ELO NCRT NIL MIDL 10 Y POT1 NSCR 407 NLCL TOPS CTOP 4
      NLCA N N N N N N N MR1 Y C111 Y L123 N $
```

Datafilling table TRKGRP (PX)

The following procedure shows the datafill for table TRKGRP (PX). This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

NTX186AB - Equal Access End Office (continued)

Datafilling table TRKGRP (PX)

Field	Subfield	Explanation and action
	EA	*Equal Access* Enter Y for EAEO. If Y is entered, the PIC, CHOICE, and LATANM fields must also be datafilled. Enter N (the default value) for a non-EAEO. If this field is set to N and the end office is an EAEO, all outgoing calls are treated as non-Equal Access calls. Call routing is based on standard translations (HNPACODE), and non-Equal Access billing is used.
	PIC	*Primary inter-LATA carrier* If field EA = Y, enter an IEC or INC name, as defined in table OCCNAME. If EA = N, leave this field blank.
	CHOICE	*Choice* If EA = Y, enter Y if 10XXX dialing is allowed. Otherwise, enter N. If EA = N, leave this field blank.
	LATANM	*LATA name* If EA = Y, enter a LATA name specified in table LATANAME. If EA = N, leave this field blank.

Datafill example for table TRKGRP (PX)

The following example shows sample datafill for table TRKGRP (PX). In this example, EA is set to Y, PIC is set to C111, CHOICE is set to Y, and LATANM is set to L123.

Datafill example for table TRKGRP (PX)

Example of a MAP display:

```
GRPKEY
                                                    GRPINFO
-------------------------------------------------------------

RCC1PX
   PX 0 ELO NCRT 2W NIL MIDL N POT1 NSCR 619 LCL NONE NONE NLCA
   N N 32 NIL 5409999 DIALTN N Y C111 Y L123 N $
```

Datafilling table OFRT

Table OFRT contains route lists that are pointed to from tables other than the home NPA code subtable (HNPACONT.HNPACODE) or the foreign NPA code subtable (FNPACONT.FNPACODE).

NTX186AB - Equal Access End Office (continued)

The following procedure shows the datafill for table OFRT. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table OFRT

Field	Subfield	Explanation and action
RTESEL		*Route selector* Enter CND to specify a condition before routing. If the condition is met then the instructions of this route element are executed. Otherwise they are skipped and translation will look for instructions in the next route element. Conditions relating to Equal Access are listed below.
RTELIST		*Route list* This field consists of the subfields described below.
	CNDSEL	*Condition selector* Enter EA as the type of condition to be tested.
	EA_CND_RTE	*Condition sub-selector* Enter one of the following values: CAC for an Equal Access call where 10XXX is dialed INTNL for an Equal Access international call PIC for other Equal Access calls

Datafill example for table OFRT

The following example shows sample datafill for table OFRT.

Datafill example for table OFRT

Example of a MAP display:

```
 RTE                                         RTELIST
 ________________________________________________________
        1                       CND  EA  CAC  SK  3   $
```

Datafilling table OCCINFO

Table OCCINFO defines the attributes for carriers serving the end office and screens calls for carrier compatibility. For example, table OCCINFO allows international traffic to be sent only to carriers capable of handling such traffic.

The following procedure shows the datafill for table OCCINFO. This procedure contains only those fields that apply to this package. See

NTX186AB - Equal Access End Office (continued)

Common Customer Data Schema, 297-1001-451, for a description of the other fields.

Datafilling table OCCINFO Field	Subfield	Explanation and action
CARRNAME		*Carrier name* Enter the carrier name or a 1- to 16-character alphanumeric abbreviation of the carrier name as defined in table OCCNAME. This table must have a tuple with the carrier name NILC to handle subscribers who want a null PIC.
CARRNUM		*Carrier number* Enter the CIC (0000 to 9999). The CIC is equal to the XXXX digits in the Equal Access prefixes (101XXXX or 950YXXXX). ***Note 1:*** Only 256 entries per office are accepted. ***Note 2:*** Although N is included in the range of values, it is not a valid entry for this field.
ACCESS		*Access arrangement* Enter one of the following access types accepted by the carrier to handle a call: NONE no access INTERIM interim dialing over FGD signaling EAP EAP dialing over FGD signaling OTC FGC dialing over FGC signaling (local billing) TRANS both interim and EAP dialing over FGD signaling FGC FGC dialing over FGC signaling (FGD billing) ***Note 1:*** In order for the EACARR operational measurement (OM) group to record OM data, this field must be set to EAP, INTERIM, TRANS, or FGC. If the ACCESS field is set to NONE, none of the EACARR registers will be pegged. ***Note 2:*** This field must be set to NONE for the NILC tuple.
ORIGCARR		*Original carrier* This field specifies the carrier as original or duplicate when more than one carrier is entered with the same carrier number (field CARRNUM). Only one carrier of a group of carriers with the same CARRNUM can be the original carrier. Enter Y if the carrier is the original carrier. Otherwise, enter N. Default is N.

-continued-

NTX186AB - Equal Access End Office (continued)

Datafilling table OCCINFO (continued)

Field	Subfield	Explanation and action
INTER		*Inter-LATA* Enter Y if the carrier can handle inter-LATA traffic. Otherwise, enter N.
INTNTL		*International* Enter Y if the carrier can handle international traffic. Otherwise, enter N.
INTRA		*Intra-LATA* Enter Y if the carrier can handle intra-LATA traffic. Otherwise, enter N.
ANI		*Automatic number identification* Enter Y if the carrier wants ANI digits sent with the called number. Otherwise, enter N.
FANI		*Flexible ANI* Enter Y if the carrier can receive flexible ANI information digits instead of standard ANI information digits. Otherwise, enter N.
ONISCRN		*Operator number identification screening* Enter Y if ONI traffic requires screening by an operator or CAMA position before outpulsing to the carrier. Otherwise, enter N.
AD1		*Abbreviated dialing number one* Enter Y if the carrier can be accessed using abbreviated dialing. Otherwise, enter N.
OVERLAP		*Overlap* Enter Y if the carrier wants to receive digits from the AT or the EAEO using overlap outpulsing. Otherwise, enter N.
INTERS		*Inter-state* Enter Y if the carrier can handle traffic between states. Otherwise, enter N.
INTRAS		*Intra-state* Enter Y if the carrier can handle traffic within the same state. Otherwise, enter N.

-continued-

NTX186AB - Equal Access End Office (continued)

Datafilling table OCCINFO (continued)

Field	Subfield	Explanation and action
TERMREC		*Terminating access record* Enter the length (LONG or SHORT) of the terminating access record produced for the carrier. Default value is SHORT. ***Note:*** Access records are produced only when the OCCTERM option in table AMAOPTS is set to ON.
OCCSEPNO		*Other common carrier separation number* Enter the separation number (0 to 127) for the carrier in the Traffic Separations Measurement System.
OPSIG		*Operator signaling* Enter the type of operator signaling provided by the carrier. Enter FGRPC for FGD carriers that require FGC operator signaling. Enter NONE for all other FGD carriers. This entry is ignored for FGC carriers.
PICIND		*Presubscription indication* Enter Y if the carrier has chosen to receive the presubscription indicator; otherwise enter N. This field must be datafilled for every entry in table OCCINFO.
NOA950		*Nature of address indicator* Enter Y to show that the nature of address indicator in the calling party number parameter is set to 1111110. This binary values means that the call is a network specific, 950+ call from public station or hotel/motel line or non-EAEO. Enter N to show that the nature of address indicator in the calling party number parameter is set to the usual value. ***Note:*** The default value of N will cause no change in the existing operation of the switch.
INCCPN		*Include calling party number* Enter N to indicate that the calling party number parameter is to be removed from any IAM sent to this carrier. Otherwise, enter Y, the default value.

-continued-

Datafilling table OCCINFO (continued)

Field	Subfield	Explanation and action
CTDOA		*Carrier toll deny operator assisted* Enter Y to block OA calls to this carrier when the subscriber has the CTD line option applied for this carrier. Otherwise, enter N, the default value.
INTRAOPR		*Intra-LATA operator* Enter Y if the carrier is capable of handling 0- intra-LATA operator calls. Otherwise, enter N, the default value.

End

Datafill example for table OCCINFO

The following example shows sample datafill for table OCCINFO. In this example, two carriers are serving the EAEO, C111 and C222.

Datafill example for table OCCINFO

Example of a MAP display:

```
CARRNAME CARRNUM ACCESS ORIGCARR INTER INTNTL INTRA ANI FANI
ONISCRN AD1 OVERLAP INTERS INTRAS TERMREC OCCSEPNO OPSIG PICIND
NOA950 INCCPN DTMFIND OPSERV CACBLOCK CTDOA CMCMON SCRNWATS
CRMCRA ATPINCL INTRAOPR
```

```
 C111    0111   EAP     Y      Y      Y     N   Y    N
N     Y      Y     Y      Y    LONG       0    FGRPC    Y
 N      N     N       N       N      N      N       N
  Y    N        N
 C222    0222   EAP     Y      Y      N     Y   N    N
N    N       Y     Y      N    SHORT      0    FGRPC    N
 N    N       N       N       N      N      N       N
  Y    N        N
```

Datafilling table LINEATTR

Table LINEATTR defines the line attribute indexes that are applicable to an office. Line attributes are assigned to regular lines in table LENLINES and to MDC stations and attendant consoles in table IBNXLA. The following procedure shows the datafill for table LINEATTR. This procedure contains only those fields that apply to this package. See *Local Customer Data Schema*, 297-2101-451, for a detailed description of the table.

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Datafilling table LINEATTR

Field	Subfield	Explanation and action
LATANM		*LATA name* Enter the name of the LATA associated with this line attribute.

Datafill example for table LINEATTR

The following example shows sample datafill for table LINEATTR. In this example, the LATA associated with line attribute 208 is LATA1.

Datafill example for table LINEATTR

Example of a MAP display:

```
 LNATTIDX LCC CHGCLSS COST SCRNCL LTG STS PRTNM LCANAME ZEROMPOS
 TRAFSNO
 MRSA SFC LATANM  MDI    IXNAME DGCLNAME FANIDIGS
             RESINF                                    OPTIONS
-------------------------------------------------------------------
 208      1FR NONE    NT   NSCR   0   619 POT1   LPOT      N
   10
NIL NILSFC LATA1   0       NIL      NIL     00
                  N
```

Datafilling table LATAXLA

The following procedure shows the datafill for table LATAXLA. This table defines the attributes of domestic calls (inter-LATA or intra-LATA, interstate or intrastate). These attributes are then compared with those of the carriers in the OCCINFO table to determine which carriers should handle the calls. See *Common Customer Data Schema*, 297-1001-451, for a detailed description of the table.

Datafilling table LATAXLA

Field	Subfield	Explanation and action
LATACODE		*LATA code* This key field consists of subfields LATANM and DIGITS.
	LATANM	*Calling LATA name* Enter the LATA name as defined in table LATANAME.

-continued-

NTX186AB - Equal Access End Office (continued)

Datafilling table LATAXLA (continued)

Field	Subfield	Explanation and action
	DIGITS	*Dialed digits* This field contains the 1 to 18 digits that can be dialed to access the LATA. Enter only those digits for which one of the following sets of attributes applies: intra-LATA, interstate inter-LATA, interstate inter-LATA, intrastate The DMS switch assumes that any code not defined in the DIGITS field has the intra-LATA, intrastate attributes (default entry). The DIGITS field allows the DMS switch to distinguish between NPA and ambiguous codes while determining the call attributes for carrier screening.
LATA		*LATA call attribute* Enter INTER or INTRA to define a code as inter-LATA or intra-LATA.
STATE		*STATE call attribute* Enter INTER or INTRA to define a code as interstate or intrastate.
EATYPE		*Equal Access type call* Enter the appropriate Equal Access call type to identify the call as standard (STD), CORRIDOR, PRIVILEGE, or NON_EA. Only inter-LATA calls can be identified as CORRIDOR or PRIVILEGE. Only intra-LATA calls can be identified as NON_EA.

End

Datafill example for table LATAXLA

The following example shows sample datafill for table LATAXLA.

Datafill example for table LATAXLA

Example of a MAP display:

```
                  LATACODE  LATA  STATE      EATYPE
____________________________________________________
      L123         203    INTER  INTER          STD
      LATA1        212220 INTRA  INTER          STD
      LATA2        221220 INTRA  INTER       NON_EA
```

NTX186AB - Equal Access End Office (continued)

Datafilling table OCCRDIG

Table OCCRDIG provides the regional code for outpulsing to the AT or INC for calls to an NPA within World Zone 1, but outside the continental United States. The regional code is a single digit prefixed by 01. The code is written in the generic form 01R and it follows the CAC during the first stage of outpulsing.

The following procedure shows the datafill for table OCCRDIG. See *Common Customer Data Schema,* 297-1001-451, for a detailed description of the table.

Datafilling table OCCRDIG

Field	Subfield	Explanation and action
OCCRSNPA		*Other common carrier R digit serving NPA* Enter a valid NPA within World Zone 1, but outside the continental United States. The NPA must be datafilled in table HNPACONT.
OCCRDIG		*Other Common Carrier R Digit* Enter the digit of the region where the NPA defined in OCCRSNPA is located. The valid digits are the following: 0 reserved NPA 3 Canada 5 Mexico 7 Alaska 8 Hawaii 9 Caribbean The default value is 1.
OUTCNUS		*Outside continental U.S.* Specify whether the region defined in OCCRDIG is outside the continental U.S. by entering N or Y. Enter N if the NPA defined in OCCRSNPA is reserved (700, 800, or 900) and is not within a specific region. Enter Y if the NPA defined in OCCRSNPA is not reserved and is within a specific region outside the continental U.S.

Datafill example for table OCCRDIG

The following example shows sample datafill for table OCCRDIG. In this table, NPA 403 is defined as located in Canada, thus outside continental U.S.

Datafill example for table OCCRDIG

Example of a MAP display:

```
OCCRSNPA OCCRDIG OUTCNUS

   403       3       Y
```

Datafilling table STDPRTCT

Table STDPRTCT lists the name of each standard pretranslator subtable defined by the operating company. The following procedure shows the datafill for table STDPRTCT. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table STDPRTCT

Field	Subfield	Explanation and action
EXTPRTNM		*External standard pretranslator subtable name* Enter the name defined by the operating company to represent the standard pretranslator subtable. Note that standard pretranslator name C7PT is automatically used by ISUP trunks on test calls in offices with ISUP capability.

Datafill example for table STDPRTCT

The following example shows sample datafill for table STDPRTCT. In this example, information is provided for six pretranslator subtables.

Datafill example for table STDPRTCT

Example of a MAP display:

```
EXTPRTNM  STDPRT  AMAPRT

    EAFR (    1) (    0)
    EAOS (    1) (    0)
    POT1 (    1) (    1)
    INC1 (    1) (    0)
    OWT1 (    1) (    0)
    EACN (    1) (    0)
```

Datafilling subtable STDPRTCT.STDPRT

Subtable STDPRTCT.STDPRT is the first table to be indexed by the received leading digits when the originating line attribute (from table LINEATTR) or trunk (from table TRKGRP) specifies a pretranslator name.

The following procedure shows the datafill for subtable STDPRTCT.STDPRT. This procedure contains only those fields that apply

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to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling subtable STDPRTCT.STDPRT

Field	Subfield	Explanation and action
FROMDIGS		*From digits* Enter the digit(s) to be translated. If the entry is a block of consecutive numbers, enter the first number in the block.
TODIGS		*To digits* If FROMDIGS is a block of consecutive numbers, enter the last number in the block. Otherwise this field equals FROMDIGS.
PRETRTE		*Pretranslation route* For Equal Access calls, this field is composed of subfields PRERTSEL, TYPCALL, NOPREDIG, XLA_INFO, CARRNAME, and RTEAREA.
	PRERTSEL	*Pretranslator route selector* Enter EA, the pretranslator route selector for Equal Access calls.
	TYPCALL	*Type of call* Enter the type of call: DD, NP (no prefix), or OA. ***Note:*** TYPCALL must be set to DD to enable call billing.
	NOPREDIG	*Number of prefix digits* Enter the number of prefix digits (0 to 7).
	XLA_INFO	*Equal Access translation information* This field is composed of subfield XLATYPE.
	XLATYPE	*Equal Access translation type* Enter one of the following values: N when no further digit translation or screening is required. A route must then be specified in field RTEAREA. P when further pretranslation is required. A pretranslator subtable name must be entered in field PRTNM. T when no further pretranslation is required. Translation then proceeds as determined by field TRANSYS.

-continued-

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Datafilling subtable STDPRTCT.STDPRT (continued)

Field	Subfield	Explanation and action
	PRTNM	*Pretranslator subtable name* Enter the name of the pretranslator subtable that translation routes to for pretranslation of the remaining digits. This field is displayed when XLATYPE = P.
	TRANSYS	*Translation system* Enter one of the following values: NA when translation is to proceed to North American digit translations and screening. IN when translation is to proceed to international translations. NO when no further translation or screening is required. This field is displayed when XLATYPE = T.
	CARRNAME	*Carrier name* Enter the name of the carrier, as defined in table OCCNAME, to which the call is offered.
	RTEAREA	*Route area* This field is composed of subfield RTEPRSNT.
	RTEPRSNT	*Route present* Enter Y to datafill fields EXTRTEID, TABID, KEY, MINDIGSR, MAXDIGSR, and OCS. Otherwise, enter N.
	EXTRTEID	*External route ID* This field is composed of subfields TABID and KEY.
	TABID	*Table identifier* Enter an office route table name (OFRT, OFR2, OFR3, OFR4).
	KEY	*Index* Enter the office route index (0 to 1023) that the translation is routed to.
	MINDIGSR	*Minimum digits received* Enter the minimum number of digits (1 to 18) to be collected before routing the call.

-continued-

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Datafilling subtable STDPRTCT.STDPRT (continued)		
Field	**Subfield**	**Explanation and action**
	MAXDIGSR	*Maximum digits received* Enter the maximum number of digits (1 to 24) to be collected before routing the call.
OCS		*Overlap carrier selection* If this field is set to Y and the carrier has field OVERLAP set to Y in table OCCINFO, then the call uses OCS. Otherwise, OCS is not used.
		End

Datafill example for subtable STDPRTCT.STDPRT

The following example shows sample datafill for subtable STDPRTCT.STDPRT. In the first tuple, fields PRERTSEL (EA) and XLATYPE (P) indicate that a call with leading digits 10120 is to be routed to carrier CARR1 through table OFRT 100 unless otherwise specified in the second stage pretranslator OCC1. Field NOPREDIG sets the prefix fence at 5, which means that the second stage pretranslator translates the digits following 10120.

In the second tuple, a call with leading digits 10999 is to be routed to carrier CARR2 through second pretranslator OCC2.

In the third tuple, a call with leading digits FROM 9501120 is to be routed to carrier CARR1 through table OFRT 102. Field TRANSYS indicates that translation to validate the dialed digits is not required.

Datafill example for subtable STDPRTCT.STDPRT

Example of a MAP display:

```
 FROMDIGS          TODIGS
                                                    PRETRTE
-------------------------------------------------------------
 10120             10120
EA DD 5 P OCC1     CARR1    Y      OFRT  100  6 24    N
 10999             10999
EA DD 5 P OCC2     CARR2    N
 9501120          9501120
EA DD 7 T NO       CARR1    Y      OFRT  102  7  7    N
```

Datafilling table LENFEAT

Table LENFEAT lists the features that are assigned to a specific line in table LENLINES. The NTX186AB - Equal Access End Office feature package

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implements the CTD and PIC options for Equal Access lines. These options are assigned in table LENFEAT.

The following procedure shows the datafill for table LENFEAT. This procedure contains only those fields that apply to this package. See *Local Customer Data Schema*, 297-2101-451, for a description of the other fields.

Datafilling table LENFEAT

Field	Subfield	Explanation and action
DF		*Feature* Enter CTD or PIC, the feature assigned to the line.
DATA		*Data* This field consists of the subfields DF and CARRIERS if CTD is entered in field DF. This field consists of the subfields DF, CARRIER, and CHOICE if PIC is entered in field DF.
	DF	*Feature* Enter CTD or PIC, the feature assigned to the line.
	CARRIERS	*Carrier toll denial list* Enter the names of up to three carriers, as defined in table OCCNAME, that have denied access to the line. Separate each carrier by a space and end the list with the dollar sign.
	CARRIER	*Carrier name* Enter the name of the carrier, as defined in table OCCINFO. If a null PIC is required, enter NILC.
	CHOICE	*Choice* If suscribers are able to choose their own carrier, enter Y. If a suscriber must use the assigned carrier, enter N.

End

Datafill example for table LENFEAT

The following example shows sample datafill for table LENFEAT. In this example, the line HOST 00 0 00 26 is denied access to carriers CARR1 and CARR2.

Datafill example for table LENFEAT

Example of a MAP display:

```
              LEN PTY       DF                                DATA
 ___________________________________________________________________
  HOST 00 0 00 26   S      CTD                CTD   CARR1   CARR2 $
```

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Datafilling table AMAOPTS

Table AMAOPTS controls the activation and scheduling of the recording options for local, toll, and high-revenue calls. It contains one tuple for every option. A schedule, associated with every option, defines whether an option is active, active only at certain times, or not active.

Options ENFIA_B_C, OCCTERM, and OCCOVFL are related to Equal Access billing records. The following procedure shows the datafill for these options in table AMAOPTS. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table AMAOPTS

Field	Subfield	Explanation and action
OPTION		*Option* Enter an alphanumeric option code. The options relevant to Equal Access are described in the following subfields.
	ENFIA_B_C	This option controls the recording of ENFIA B and ENFIA C calls (for example, 950-10XX), thereby allowing calls on all FGB trunk groups to be recorded.
	OCCTERM	This option controls the recording of terminating Equal Access calls (call code 119).
	OCCOVFL	This option controls the recording of Equal Access overflow calls (call code 120).
SCHEDULE		*Schedule* This field consists of the following subfields: AMASEL, ONDATE, OFFDATE, SCHED, ONTIME, and OFFTIME.

-continued-

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Datafilling table AMAOPTS (continued)

Field	Subfield	Explanation and action
	AMASEL	*AMA selector* Enter one of the following values: ON Activate the option immediately. OFF Deactivate the option immediately. DEFAULT Use the default schedule for the option. PERIODIC Activate the option at the specified date and time, and perform the periodic activity every so many hours or minutes. Complete subfields ONDATE and ONTIME to specify the date and time for activation, and complete field SCHED for the time intervals to perform the activity. TIMED Activate the option between the specified dates and times. For the ENFIA_B_C option, the valid AMA selectors are ON, OFF, TIMED, and DEFAULT. Default is ON. For the OCCTERM option, the valid AMA selectors are ON, OFF, TIMED, and DEFAULT. Default is ON. For the OCCOVFL option, the valid AMA selectors are ON, OFF, TIMED, PERIODIC, and DEFAULT. Default is PERIODIC.
	ONDATE	*Activation on date* If AMASEL = PERIODIC or TIMED, enter the year, the month, and the day on which the activation of the option is set to ON. The format is YYMMDD. Otherwise, there is no prompt for this field.
	SCHED	*Periodic schedule* If AMASEL = PERIODIC, complete the two subfields TU and TV. Otherwise, there is no prompt for this subfield.
	TV	*Time value* Enter a value from 0 to 255.
	TU	*Time unit* Enter AEONS, HRS, HUNDREDMS, MINS, SECS, or TENMS.
	ONTIME	*Activation on time* If AMASEL = PERIODIC or TIMED, enter the hour and minute the option will be activated. The format is HHMM. Otherwise, there is no prompt for this field.

-continued-

NTX186AB - Equal Access End Office (continued)

Datafilling table AMAOPTS (continued)

Field	Subfield	Explanation and action
	OFFDATE	*Activation off date* If AMASEL = TIMED, enter the year, the month, and the day on which the activation of the option is set to OFF. The format is YYMMDD. Otherwise, there is no prompt for this field.
	OFFTIME	*Activation off time* If AMASEL = TIMED, enter the hour and minute the option will be deactivated. The format is HHMM. Otherwise, there is no prompt for this field.

End

Datafill example for table AMAOPTS

The following example shows sample datafill for table AMAOPTS. In this example, option OCCTERM is enabled.

Datafill example for table AMAOPTS

Example of a MAP display:

```
   OPTION               SCHEDULE
------------------------------------------
    OCCTERM                 ON
```

Datafilling table VIRTGRPS

Table VIRTGRPS assigns options to VFGs. The options relevant to Equal Access are EA and LPIC. The EA option provides Equal Access capability to MDC stations and incoming trunks. The LPIC option provides an Equal Access carrier for local exchange calls. It is only valid if the EA option is assigned.

The following procedure shows the datafill for table VIRTGRPS. This procedure contains only those fields that apply to this package. See the *Meridian Digital Centrex Customer Data Schema*, 297-2001-451, for a description of the other fields.

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Datafilling table VIRTGRPS

Field	Subfield	Explanation and action
OPTIONS		*Options* Enter the list of options and associated subfields which are assigned to the VFG. Each option and its subfield must be separated by a space. Enter EA and subfields PIC and CHOICE to assign the EA option. Enter LPIC and subfield IPIC to assign the intra-LATA PIC option.
	PIC	*Primary inter-LATA carrier* Enter the name assigned to the PIC in table OCCNAME. If a PIC is not required, enter NONE.
	CHOICE	*Choice* Enter Y if the subscriber is allowed to dial an EAP prefix to choose a carrier manually. Otherwise, enter N.
	IPIC	*Intra-LATA carrier name* Enter the name of the Intra-LATA carrier for this VFG as defined in table OCCNAME.

Datafill example for table VIRTGRPS

The following example shows sample datafill for table VIRTGRPS. In this example, VFG EA12 has a size of 8. It translates the call using POTS translation tables. It has a billing number of 0131113, uses line attribute 4, and has call detail recording.

If the subscriber has not dialed the EAP prefix of a carrier, the call is routed through the subscriber PIC, which is CRGP1. The subscriber is allowed to choose a carrier manually because subfield CHOICE is set to Y.

Datafill example for table VIRTGRPS

Example of a MAP display:

```
   KEY                                              DATA
                                                            OPTIONS
 ________________________________________________________________________
EA12      SIZE 8         POTS      0131113    4    Y    EA    CGRP1 Y
                                                                     $
```

Datafilling table IBNXLA

Table IBNXLA stores the data required for the translation of calls from an MDC station. The options relevant to Equal Access are EA and LPIC. The EA option provides the Equal Access feature. The LPIC option provides an Equal Access carrier for local exchange calls. The following procedure

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shows the datafill for table IBNXLA. This procedure contains only those fields that apply to this package. See *Local Customer Data Schema*, 297-2101-451, for a description of the other fields.

Note: For a call on an MDC line to be considered an Equal Access call, a VFG must be used or a PIC must be assigned to the line through the use of the general network (GEN) selector with the Equal Access option. This information is defined in the table IBNXLA.

Datafilling table IBNXLA

Field	Subfield	Explanation and action
RESULT		This field contains numerous subfields. For this feature, only subfield OPTION is affected.
	OPTION	*Option* Enter the list of options and associated subfields which are assigned to the translator. Each option and its subfield must be separated by a space. Enter EA and subfields PIC, CHOICE, and INVEAFLX to assign the EA option. Enter LPIC and subfield IPIC to assign the intra-LATA PIC option.
	PIC	*Preferred inter-LATA carrier* Enter the name assigned to the PIC in table OCCNAME. If a PIC is not required, enter NONE.
	CHOICE	*Choice* Enter Y if the subscriber is allowed to dial an EAP prefix to choose a carrier manually. Otherwise, enter N.
	INVEAFLX	*Invalid flexible intercept number* Enter the invalid flexible intercept number. If the call cannot be made through the carrier specified in field PIC, the call is sent to this treatment.
	IPIC	*Intra-LATA carrier name* Enter the name of the intra-LATA carrier for this VFG as defined in table OCCNAME.
End		

Datafill example for table IBNXLA

The following example shows sample datafill for table IBNXLA. In this example, translator CXT1 has options EA and LPIC assigned.

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Datafill example for table IBNXLA

Example of a MAP display:

```
 KEY
                                                   RESULT
_____________________________________________________________
CXT1  9  NET  N Y Y 1 Y  NDGT  N  Y  GEN  LATTR 0
EA  CARRA  Y  0  LPIC  CARRB  $
```

Datafilling table TMTCNTL

Table TMTCNTL defines the tones, announcements, or states sent to the originator of a call when a treatment code is encountered during translation. To support the new treatments provided for Equal Access, the EAEO must datafill them in table TMTCNTL.

Note that the DRAM should contain recorded announcements corresponding to these treatments. These announcements must be datafilled in table OFRT.

The following procedure shows the datafill for table TMTCNTL. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table TMTCNTL

Field	**Subfield**	**Explanation and action**
EXTTMTNM		Enter OFFTREAT.
TREATMT		*Treatment* Enter the treatment name. The new treatments related to Equal Access are CACE, D950, N950, ILRS, NACD, DACD, and IVCC.
LOG		*Log* Enter Y to print a trunk or line message 138 when translation is routed to a treatment. Otherwise, enter N.
FSTRTE		*First route* This field consists of subfields FSTRTSEL, TABID, and KEY.
	FSTRTSEL	*First route selector* Enter T, the first route selector.

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Datafilling table TMTCNTL (continued)		
Field	**Subfield**	**Explanation and action**
	TABID	*Table name* Enter the office route table name.
	KEY	*Key* Enter the index (1 to 1023) into the office route table which defines the route list for the treatment.

Datafill example for table TMTCNTL

The following example shows sample datafill for table TMTCNTL. In this example, treatments CACE, D950, and ILRS are defined.

Datafill example for table TMTCNTL

Example of a MAP display:

```
TREAT   LOG    FSTRTSEL    TABID            KEY
-------------------------------------------------
CACE     Y        T        OFRT              7
D950     Y        T        OFRT              8
ILRS     Y        T        OFRT              10
```

Datafilling table CXGRP

Table CXGRP is required in local or combined local/toll switching units to define the options associated with PX trunks. The options related to Equal Access are CTD and LPIC.

The following procedure shows the datafill for table CXGRP. This procedure contains only those fields that apply to this package. See *Local Customer Data Schema*, 297-2101-451, for a description of the other fields.

Datafilling table CXGRP

Field	Subfield	Explanation and action
CTD		*Carrier toll denied* Enter Y and the system prompts you for carriers. Input the list of carriers to which toll access is denied. Otherwise, enter N.
CARRIERS		*Carriers* If the CTD field is set to Y, enter up to 3 IEC names as specified in table OCCNAME. Enter a dollar sign after the last name.
PXOPTION		*Customer group options* Enter LPIC to assign a local PIC to the customer group.
CARRIER		*Carrier name* If PXOPTION = LPIC, enter the local PIC name as defined in table OCCNAME.

Datafill example for table CXGRP

The following example shows sample datafill for table CXGRP. In this example, option LPIC is assigned to customer group 32.

Datafill example for table CXGRP

Example of a MAP display:

```
 CUSTKEY
                SPB
                                                      CTD
                                                    EWATS
                                                  PXOPTION
-------------------------------------------------------------
32
            N
                                                        N
                                                        N
                                  (LPIC CARRA) (TDV)    $
```

NTX186AB - Equal Access End Office (continued)

Datafilling table EASAC

Table EASAC lists the N0/1X codes that are to be treated as SACs. The table has one field, SAC. Every code that is to be a SAC must be entered in table EASAC. Codes can be added to or deleted from table EASAC, but no tuple can be changed.

The following procedure shows the datafill for table EASAC. This procedure only contains information that applies to this package. See *Common Customer Data Schema*, 297-1001-451, for additional information.

Datafilling table EASAC

Field	Subfield	Explanation and action
SAC		*Service access code* Enter each N0/1X code that is to be treated as a SAC. All N11 codes (such as 411, 611, and 911) are not allowed.

Datafill example for table EASAC

The following example shows sample datafill for table EASAC.

Datafill example for table EASAC

Example of a MAP display:

```
SAC
---
800
```

NTX186AB - Equal Access End Office (end)

Datafilling table CICSIZE4

Table CICSIZE4 contains the trunk groups which use four-digit CICs. Trunk groups that do not appear in this table are assumed to use three-digit CICs. The following procedure shows the datafill for table CICSIZE4. See *Common Customer Data Schema*, 297-1001-451, for additional information.

Datafilling table CICSIZE4

Field	Subfield	Explanation and action
TRUNKGRP		Enter the trunk groups that use a 4-digit CIC. This table is datafilled only during the permissive phase, when office parameter EA_TAB_CICSIZE4_OBSOLETE is set to N. When this parameter is set to Y, table CACSIZE4 is not used.

Datafill example for table CICSIZE4

The following example shows sample datafill for table CICSIZE4.

Datafill example for table CICSIZE4

Example of a MAP display:

```
TRUNKGRP
--------------------------------
TGRPX
TGRPY
TGRPZ
```

Translation verification tools

Translation verification tools are not available for this feature package.

Service orders

Service orders are not applicable for this feature package.

NTXA24AA - Equal Access Enhanced Carrier Toll Denied

Package name

Equal Access Enhanced Carrier Toll Denied

Package number

NTXA24AA

Feature number

The NTXA24AA feature package consists of the following feature:

NTXA24AA feature number and name

Feature number	Feature name
AF1098	Equal Access Enhanced Carrier Toll Denied

BCS applicability

BCS26 and up

Feature package prerequisites

This package requires the following feature packages:

Feature package prerequisites

Feature package	Feature package name
NTX186AA or NTX186AB	Equal Access End Office (if an end office)
NTX710AA	LATA Equal Access System (if an access tandem)

Description

The NTXA24AA - Equal Access Enhanced Carrier Toll Denied feature package increases from 3 to 21 the maximum number of carriers that can be blocked for a subscriber line. Only DD and 1+NPA+555 calls are blocked. INWATS (800) and 1+555 calls are allowed to complete. This feature package also gives operating companies the option to block OA calls to a specific carrier. This feature package applies to both POTS and MDC environments.

NTXA24AA - Equal Access Enhanced Carrier Toll Denied (continued)

Theory of operation

Without the NTXA24AA - Equal Access Enhanced Carrier Toll Denied feature package, a subscriber line may be denied access to three carriers for DD and 1+NPA+555 calls with the CTD line option. These blocked calls are sent to ILRS treatment. INWATS (800), 1+555, and OA calls are allowed to complete.

This feature package modifies tables LENFEAT, CXGRP, IBNFEAT, KSETFEAT, and DNPIC to increase from 3 to 21 the maximum number of carriers that can be blocked. It also adds the carrier toll denied operator assisted (CTDOA) field to table OCCINFO. This field specifies whether to block OA calls to a particular carrier.

The SERVORD system allows the operating company to indirectly change tables LENFEAT, IBNFEAT, and KSETFEAT to add or delete the CTD option.

Package limitations and restrictions

The following limitations and restriction apply to the Equal Access Enhanced Carrier Toll Denied feature package:

- To deny access to all carriers, the line option PIC must be set to NILC (for nil carrier) and CHOICE set to N.
- The CTD line option is incompatible with the line options toll denied (TDN) and toll diversion (TDV). The SERVORD system does not allow these options on the same line.
- Local exchange and corridor calls are not affected by the CTD option.
- All CTD calls to an FGC carrier are sent to ILRS treatment.

Feature interactions

There are no feature interactions associated with this feature package.

Activation/deactivation by the end user

Activation/deactivation is not applicable for this feature package.

Billing

This package does not affect billing.

Datafilling office parameters

This package does not affect office parameters.

NTXA24AA - Equal Access Enhanced Carrier Toll Denied (continued)

Datafill sequence

The following tables require datafill to implement the Equal Access Enhanced Carrier Toll Denied package. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for NTXA24AA - Equal Access Enhanced Carrier Toll Denied

Table	Form	NTP	Purpose of table
OCCINFO	2355A-B	297-1001-451	Table OCCINFO (other common carrier information) defines the attributes for the carriers serving a DMS switch and screens calls for carrier compatibility.
LENFEAT	2210A-B	297-2101-451	Table LENFEAT (line feature) lists the features assigned to a specific line in table LENLINES.
CXGRP	2160A-B	297-2101-451	Table CXGRP (customer group options) is required in local or combined local/toll switching units to define the options associated with a PX digital trunk group.
IBNFEAT	2217A-B	297-2001-451	Table IBNFEAT (IBN line feature) assigns options to individual MDC stations.
KSETFEAT	2272A-B	297-2001-451	Table KSETFEAT (business set and data-unit feature) assigns options to Meridian business sets (MBS).
DNPIC	2893	297-2271-451	Table DNPIC (directory number primary interexchange carrier) lists the directory numbers (DN) of PICs.

NTXA24AA - Equal Access Enhanced Carrier Toll Denied (continued)

Datafilling table OCCINFO

Table OCCINFO defines the attributes for the carriers serving a DMS switch and screens calls for carrier compatibility. Field CTDOA has been added to this table to indicate whether to block OA calls to a carrier when the subscriber has the CTD line option applied to this carrier.

The following procedure shows the datafill for table OCCINFO. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table OCCINFO

Field	Subfield	Explanation and action
CTDOA		*Carrier toll denied operator assisted* Enter Y to block OA calls to a carrier when the subscriber has the CTD line option applied to this carrier. Otherwise, enter N. The default value for the CTDOA field is N. The CTDOA field must be datafilled for every entry in table OCCINFO.

Datafill example for table OCCINFO

The following example shows sample datafill for table OCCINFO. In this example, OA calls to carrier C111 are blocked.

Datafill example for table OCCINFO

Example of a MAP display:

```
CARRNAME CARRNUM ACCESS ORIGCARR INTER INTNTL INTRA ANI FANI
ONISCRN AD1 OVERLAP INTERS INTRAS TERMREC OCCSEPNO OPSIG PICIND
NOA950 INCCPN DTMFIND OPSERV CACBLOCK CTDOA CMCMON SCRNWATS
CRMCRA ATPINCL INTRAOPR
-------------------------------------------------------------------
 C111    0111   EAP     Y      Y      Y     N   Y    N
N     Y      Y     Y      Y    LONG       0    FGRPC    Y
 N      N     N       N       N      Y      N      N
  Y    N        N
 C222    0222   EAP     Y      Y      N     Y   N    N
N    N       Y     Y      N    SHORT      0    FGRPC    N
 N    N       N       N       N      N      N      N
  Y    N        N
```

NTXA24AA - Equal Access Enhanced Carrier Toll Denied (continued)

Datafilling table LENFEAT

Table LENFEAT lists the features that are assigned to a specific line in table LENLINES. Subfield CARRIERS, which lists the carriers blocked for a specific subscriber line, can now contain up to 21 entries.

The following procedure shows the datafill for table LENFEAT. This procedure contains only those fields that apply to this package. See *Local Customer Data Schema*, 297-2101-451, for a description of the other fields.

Datafilling table LENFEAT

Field	Subfield	Explanation and action
DF		*Feature* Enter CTD, the feature assigned to the line.
DATA		*Data* This field consists of the subfields DF and CARRIERS.
	DF	*Feature* Enter CTD, the feature assigned to the line.
	CARRIERS	*Carrier toll denied list* Enter the names of up to 21 carriers, as defined in table OCCNAME, that have denied access to the line. Separate each carrier by a space and end the list with the dollar sign.

Datafill example for table LENFEAT

The following example shows sample datafill for table LENFEAT. In this example, the line HOST 00 0 00 26 is denied access to carriers CARR1 and CARR2.

Datafill example for table LENFEAT

Example of a MAP display:

```
             LEN PTY       DF                              DATA
 HOST 00 0 00 26   S       CTD                CTD   CARR1  CARR2 $
```

NTXA24AA - Equal Access Enhanced Carrier Toll Denied (continued)

Datafilling table CXGRP

Table CXGRP defines the options associated with a PX digital trunk group. The NTXA24AA - Equal Access Enhanced Carrier Toll Denied package separates the CTD option from the other customer group options. Field CTD is created to increase from 3 to 21 the maximum number of carriers that can be blocked.

The following procedure shows the datafill for table CXGRP. This procedure contains only those fields that apply to this package. See *Local Customer Data Schema*, 297-2101-451, for a description of the other fields.

Datafilling table CXGRP

Field	Subfield	Explanation and action
CTD		*Carrier toll denied* Enter Y to be prompted for the field CARRIERS and indicate the carriers to which toll access is denied. Otherwise, enter N.
CARRIERS		*Carriers* If the CTD field is set to Y, enter the names of up to 21 carriers, as defined in table OCCNAME, that have denied access to the line. Separate each carrier by a space and end the list with the dollar sign.

Datafill example for table CXGRP

The following example shows sample datafill for table CXGRP.

Datafill example for table CXGRP

Example of a MAP display:

```
CUSTKEY   SPB   CTD              CARRIERS   PXOPTION
-------------------------------------------------------
   32      N     Y          CARR1 CARR2  $     ATC  $
```

NTXA24AA - Equal Access Enhanced Carrier Toll Denied (continued)

Datafilling table IBNFEAT

Table IBNFEAT lists options assigned to individual MDC stations. Subfield CARRIERS, which lists the carriers blocked for a specific subscriber line, can now contain up to 21 entries.

The following procedure shows the datafill for table IBNFEAT. This procedure contains only those fields that apply to this package. See *Meridian Digital Centrex Customer Data Schema*, 297-2001-451, for a description of the other fields.

Datafilling table IBNFEAT

Field	Subfield	Explanation and action
DF		*Feature* Enter CTD, the feature assigned to the line.
FEATURE		*Feature* Enter CTD, the feature assigned to the line.
DATA		*Data* This field contains subfield CARRIERS.
	CARRIERS	*Carrier toll denied list* Enter the names of up to 21 carriers, as defined in table OCCNAME, that have denied access to the line. Separate each carrier by a space and end the list with the dollar sign.

Datafill example for table IBNFEAT

The following example shows sample datafill for table IBNFEAT.

Datafill example for table IBNFEAT

Example of a MAP display:

```
           LEN      DF                                  DATA
HOST 00 0 11 05     CTD     CTD                 CARR1 CARR2 $
```

NTXA24AA - Equal Access Enhanced Carrier Toll Denied (continued)

Datafilling table KSETFEAT

Table KSETFEAT lists options assigned to an MBS. Subfield CARRIERS, which lists the carriers blocked for a specific subscriber line, can now contain up to 21 entries.

The following procedure shows the datafill for table KSETFEAT. This procedure contains only those fields that apply to this package. See *Meridian Customer Data Schema*, 297-2001-451, for a description of the other fields.

Datafilling table KSETFEAT

Field	Subfield	Explanation and action
FEATKEY		*KSET feature key* This field consists of subfields LEN, KEY, and FEAT.
	LEN	*Line equipment number* Enter the LEN assigned to the line.
	KEY	*Physical key* Enter the number of the physical key set to which the DN associated with the CTD feature is assigned.
	FEAT	*Feature* Enter CTD, the feature assigned to the line.
FEATURE		*Feature* Enter CTD, the feature assigned to the line.
KVAR		*Key variable area* For this feature, this field contains subfield CARRIERS.
	CARRIERS	*Carrier toll denied list* Enter the names of up to 21 carriers, as defined in table OCCNAME, that have denied access to the line. Separate each carrier by a space and end the list with the dollar sign.

Datafill example for table KSETFEAT

The following example shows sample datafill for table KSETFEAT.

Datafill example for table KSETFEAT

Example of a MAP display:

```
                        FEATKEY                           KVAR
HOST 00 0 00 26   5     CTD          CTD         CARR1 CARR2 $
```

NTXA24AA - Equal Access Enhanced Carrier Toll Denied (continued)

Datafilling table DNPIC

Table DNPIC lists the directory numbers associated with PICs. Subfield CARRIERS, which lists the carriers blocked for a specific subscriber line, can now contain up to 21 entries.

The following procedure shows the datafill for table DNPIC. This procedure contains only those fields that apply to this package. See *TOPS Customer Data Schema*, 297-2271-451, for a description of the other fields.

Datafilling table DNPIC

Field	Subfield	Explanation and action
CTD		*Carrier toll denied* The CTD field consists of subfields CTDSEL and CARRIERS.
	CTDSEL	*Carrier toll denied selection* Enter Y if one or more carriers have denied service to this subscriber. Otherwise enter N. If feature package NTX710 (LEAS) is not present, CTDSEL must be N.
	CARRIERS	*Carrier toll denied list* If CTDSEL = Y, enter up to 21 carriers that have denied service to this subscriber. Separate each carrier by a space and end the list with the dollar sign.

Datafill example for table DNPIC

The following example shows sample datafill for table DNPIC.

Datafill example for table DNPIC

Example of a MAP display:

```
          DNKEY   DNPIC     CHOICE                                  CTD
-------------------------------------------------------------------------
613 841 11 11    CARR1      Y                        Y CARR2   CARR3   $
```

Translation verification tools

The translation verification tools section is not applicable for this package.

Service orders

This feature package modifies SERVORD commands to enable the CTD line option to handle 21 carriers. These commands apply to POTS and MDC lines. Using SERVORD to add or delete the CTD line option is an indirect way of changing tables LENFEAT, IBNFEAT, and KSETFEAT. For more information about service orders, see *SERVORD Service Order and Query System Reference Manual*, 297-2101-808, and *Integrated Services*

NTXA24AA - Equal Access Enhanced Carrier Toll Denied (continued)

Digital Network Service Orders for ISDN Terminals Reference Manual, 297-2401-310. The following table lists prompt definitions.

Service order prompts for option CTD

Prompt	Valid input	Explanation
DN_OR_ LEN	Valid DN or LEN	Enter the seven-digit DN or the LEN.
OPTION	LPIC	Enter CTD to assign the option.
CARRIER	Carrier name as datafilled in table OCCNAME	Enter up to 21 carriers that have denied service to this subscriber.

Example service orders

The following example adds the CTD option to a POTS line for 5 carriers.

Example of service orders

*Input in **Prompt** mode*

```
>ADO
  SONUMBER:    NOW 86 1 2 PM
>$
  DN_OR_LEN:
>6211234
  OPTION:
>CTD
  CARRIERS:
>CARR1
  CARRIERS:
>CARR2
  CARRIERS:
>CARR3
  CARRIERS:
>CARR4
  CARRIERS:
>CARR5
  CARRIERS:
>$
  OPTION:
>$
```

-continued-

NTXA24AA - Equal Access Enhanced Carrier Toll Denied (end)

Example of service orders (continued)
*Input in **No-prompt** mode*
>ADO $ 6211234 CTD CARR1 CARR2 CARR3 CARR4 CARR5 $ $
End

NTXE13AC - CCS7 ISUP Inter-LATA Connection EAEO

Package name

CCS7 ISUP Inter-LATA Connection EAEO

Package number

NTXE13AC

Feature numbers

The NTXE13AC feature package consists of the following features:

NTXE13AC feature numbers and names

Feature number	Feature name
AG1253	ISUP End Office FGD Signaling
AG1539	ISUP Operation, Administration, and Maintenance Enhancements
AG1639	ISUP FGD Signaling - End Office to Carrier
AF2105	FGB Interworking with CCS7

BCS applicability

BCS30 and up

Feature package prerequisites

This package requires the following feature packages:

Feature package prerequisites

Feature package	Feature package name
NTX000AA	Bilge
NTX001AA	Common Basic
NTXE66AA	CCS7 ISUP Option Control
NTX186AA or NTX186AB	Equal Access End Office
NTX901AA	Local Features I
NTX041AB	CCS7 MTP/SCCP
NTX167AB	CCS7 Trunk Signaling

NTXE13AC - CCS7 ISUP Inter-LATA Connection EAEO (continued)

Description

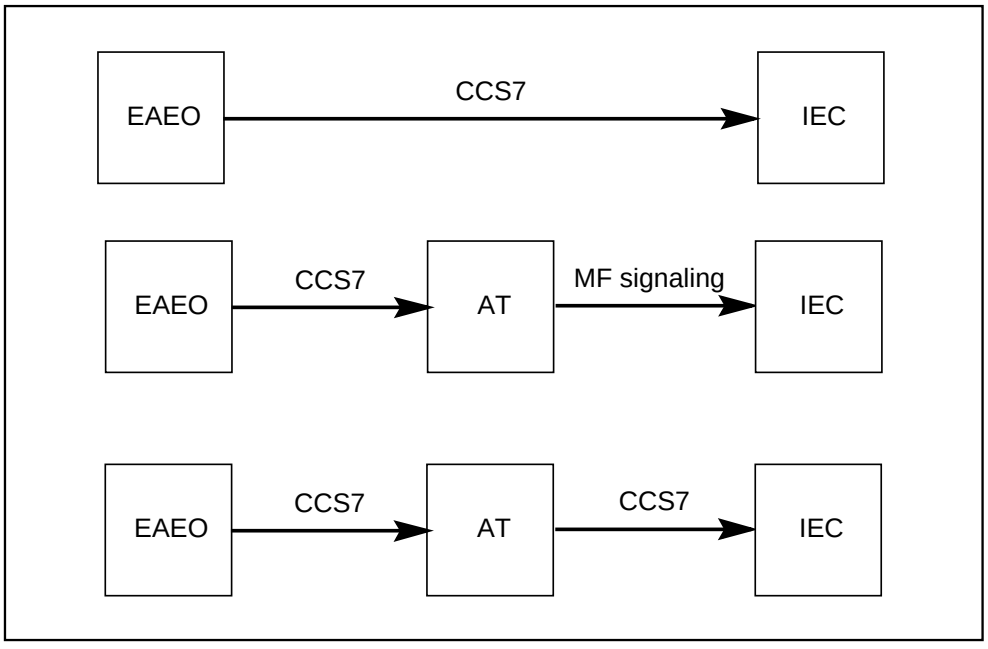
Feature package NTX186AB - Equal Access End Office implemented Equal Access connections using MF signaling, also known as inband signaling. This feature package implements EAEO connections to an AT and to an IEC using common channel signaling 7 (CCS7). This feature package also provides the capability to interwork CCS7 with FGB and FGC signaling.

Theory of operation

The three FGD CCS7 configurations supported by this feature package are shown in figure 3-2. This figure shows how the EAEO connects to the IEC either directly or via an AT. In the direct access configuration, the trunks between the EAEO and the IEC use CCS7. In the indirect configurations, the trunks between the EAEO and the AT use CCS7, while the trunks between the AT and the IEC use either MF or CCS7.

The dialing procedures and signaling protocols associated with this feature package are described in chapter 4 of *Equal Access Product Guide*, 297-2101-011.

Figure 3-2
FGD CCS7 configurations

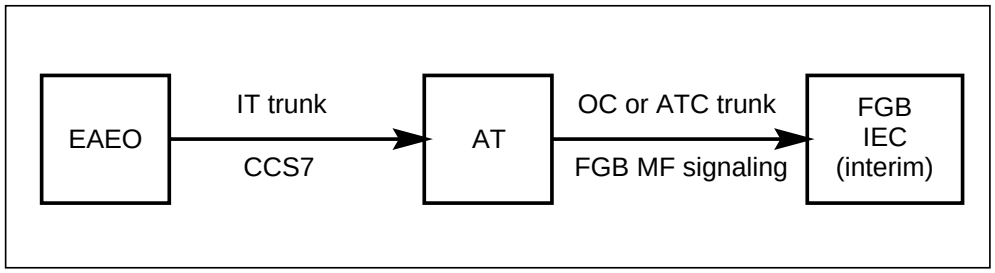


FGB interworking with CCS7

This feature package provides the capability to interwork CCS7 with FGB signaling for the 950-XXXX dialing plan. An EAEO can then complete a 950-XXXX call origination over a CCS7 IT trunk to the AT, where the call

completes to an interim IEC using FGB MF signaling. This feature is an enhancement to the CCS7-to-MF internetwork interworking capabilities presently supported by the DMS switch. Figure 3-3 shows this configuration.

Figure 3-3
FGB interworking with CCS7 configuration

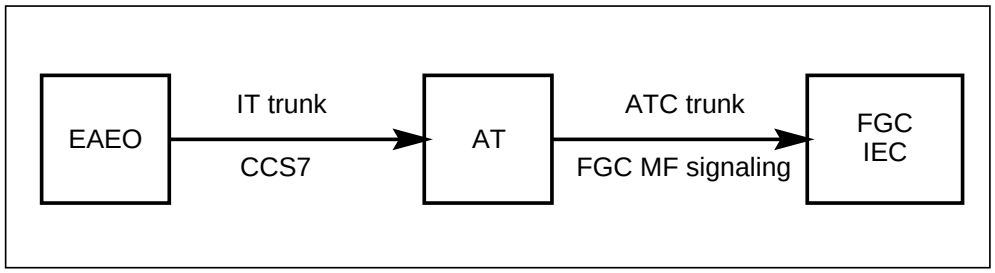


The translations datafill required to terminate a 950-XXXX call to an AT over a CCS7 IT trunk are the same as those required to terminate a similar call over an MF IT trunk.

FGC interworking with CCS7

This feature package provides the capability to interwork CCS7 with FGC signaling. An EAEO can then complete a call origination over a CCS7 IT trunk to the AT, where the call completes to an FGC IEC. Figure 3-4 shows this configuration.

Figure 3-4
FGC interworking with CCS7 configuration



The translations datafill required to terminate an FGC call to an AT over a CCS7 IT trunk are the same as those required to terminate a similar call over an MF IT trunk.

Note: As of BCS36, FGC calls sent over CCS7 IT trunks include the calling party number (CPN) parameter if field INCCPN in table OCCINFO is set to Y for the FGC carrier.

NTXE13AC - CCS7 ISUP Inter-LATA Connection EAEO (continued)

Package limitations and restrictions

The following limitations and restrictions apply to FGD CCS7:

- This package implements a subset of FGD CCS7 as specified in Bellcore publication TR-TSY-000394 (issue 2, May 1988). It does not implement the signaling specified by this Bellcore publication between the AT and the IEC if MF signaling is used between the EAEO and the AT.
- Equal Access calls from operators are not supported. To support operator originations, some Equal Access trunks must use MF signaling.
- Dual seizure of a trunk during an Equal Access call is resolved by the method outlined in Bellcore publication TR-TSY-000317 (issue 1, August 1987). The additional method described in Bellcore publication TR-TSY-000394, where one end office can control all or none of the circuits within a single trunk group, is not supported.
- If the called party address of the IAM fails screening at the terminating LATA, a release message is sent back to the EAEO. Connecting the originator to a tone or announcement from the terminating LATA is not supported.
- A configuration that includes an Emergency Alternate Switching Point (EASP) between the EAEO and the AT is not supported.
- If the CCS7 trunk between the AT and the IEC fails continuity, the connection is reattempted on another trunk. If that trunk is an MF trunk, the carrier connect time at the EAEO will be wrong; it will contain the time of arrival of the exit message (EXM) of the failed connection.

The following limitation applies to FGB interworking with CCS7:

- The FGB originating billing record (call code 134) produced for the FGB CCS7-to-MF interworking call is not supported in the Northern Telecom format billing.

The following limitations applies to FGC interworking with CCS7:

- International FGC CCS7-to-MF and MF-to-CCS7 interworking calls are not supported. There are currently no specifications for these calls in Bellcore publication TR-TSY-000394.

Feature interactions

This feature packages interacts with the feature described in the following paragraph.

ISUP AT FGD Signaling (AG1254)

The EAEO-to-IEC call configuration interacts with E800 services as outlined in feature AG1254. The only difference is that an EXM message (indicating initiation of the database query) is not generated.

NTXE13AC - CCS7 ISUP Inter-LATA Connection EAEO (continued)

Activation/deactivation by the end user

Activation/deactivation is not applicable for this package.

Billing

This feature package implements the required originating and terminating billing for Equal Access calls using CCS7. Billing for FGD calls is implemented as it has been implemented for FGD calls over trunks using MF signaling.

FGD originating billing

Originating access records are created for all outgoing Equal Access calls routed either directly to an IEC or indirectly through an AT. If the IEC provides OUTWATS service, an inter-LATA WATS access record (call code 114) is created. Otherwise, an inter-LATA station paid record (call code 110) is used.

The carrier connect time for an indirect connection (CCS7 between the EAEO and the AT, and MF signaling between the AT and the IEC) is determined at the EAEO by the receipt of the address complete message. The carrier connect time for a direct connection (CCS7 between the EAEO and the IEC) is defined as the time that the IAM is sent to the IEC.

FGD terminating billing

Terminating access records (call code 119) are created for all completed Equal Access calls routed directly to the EAEO from an IEC or INC. A second billing record, the terminating INWATS record (call code 008), may be produced at a terminating EAEO if the terminating line is marked for INWATS. This record is produced even if the call is routed indirectly from the IEC, through an AT first; however, it will be produced at the AT office. It is possible to turn on or off the terminating access recording by setting entry OCCTERM in table AMAOPTS; the default value is N.

Description of FGD AMA record

This feature package does not modify the AMA record; it is primarily concerned with the trunk group number field contained in structure codes 625 and 627.

The AMA trunk group number field is separated into three parts. The first character contains the coding of the route selected to the IEC, and characters two to five contain the actual trunk group number. The last character is the sign. The values of the first character are as follows:

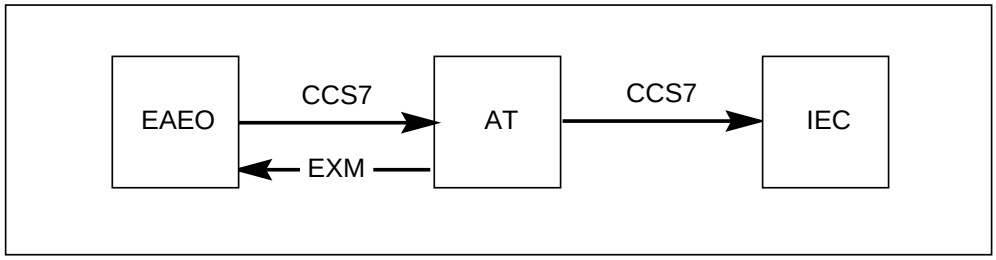
- 0 default
- 1 Non CCS7 direct trunk group number
- 2 Non CCS7 common trunk group number (trunk group number is used to route from EAEO to AT)

- 3 CCS7 direct trunk group number
- 4 CCS7 AT trunk group number (trunk group number is used to route from AT to IEC)
- 5 CCS7 end office trunk group number (trunk group number is used to route from EAEO to AT with CCS7-to-MF interworking)

Values 1 and 2 used in the first character would not be used at a CCS7 EAEO and can be considered reserved. Values 0 to 3 are identical for both originating and terminating billing purposes. Values 4 and 5 are unique to originating billing.

For the call configuration described in figure 3-5 (full CCS7 interworking scenario), the trunk group number in the AMA record generated at the EAEO indicates the trunk group number of the outgoing trunk from the AT. The EXM, which is sent back from the AT to the EAEO (as specified by Bellcore publication TR-TSY-000394), supplies this trunk group number. Receipt of the EXM at the EAEO also indicates the carrier connect time and date.

Figure 3-5
EXM from AT to EAEO



For the other call configurations implemented by this feature, the trunk group number in the originating AMA records is determined in the existing manner; the common language location identifier (CLLI) of the outgoing trunk from the EAEO is used as an index in table CLLI to get the trunk group number.

FGB originating billing record

A 134 FGB originating billing record is required when a 950-XXXX call origination terminates to an FGB IEC. This billing record is produced for a 950-XXXX call origination that terminates to a CCS7 IT trunk when the FGB selector is used in subtable STDPRTCT.STDPRT.

NTXE13AC - CCS7 ISUP Inter-LATA Connection EAEO (continued)

The following structure codes (unchanged by this feature) are associated with the 134 FGB originating billing record:

- 00625 inter-LATA
- 00627 inter-LATA, long duration

The information recorded in each structure code when terminating to a CCS7 IT trunk is the same information recorded when terminating to an MF IT trunk, with the following exceptions:

- When the facility used between the EAEO and the AT is a CCS7 IT trunk, the carrier connect time in the 134 billing record is defined as the time the answer message is received at the EAEO.
- The trunk group number field of the 134 billing record is recorded as follows:

- character 1	coded as a 5 = CCS7 end office trunk group number
- characters 2 to 5	coded as the CCS7 IT trunk group number used to terminate the call from the EAEO to the AT

FGC originating billing record

A 110 Equal Access originating billing record is produced for an FGC origination that terminates to a CCS7 IT trunk when the EA selector is used in table STDPRTCT. The trunk group number field of the 110 FGC billing record is recorded like the 134 FGB billing record.

Datafilling office parameters

This package does not affect office parameters.

Datafill sequence

The following tables require datafill to implement the NTXE13AC package. The tables are listed in the order in which they are to be datafilled.

NTXE13AC - CCS7 ISUP Inter-LATA Connection EAEO (continued)

Datafill tables required for CCS7 ISUP Inter-LATA Connection EAEO

Table	Form	NTP	Purpose of table
OCCINFO	2355A-B	297-1001-451	Table OCCINFO (other common carrier information) defines the attributes for the carriers serving a DMS switch and screens calls for carrier compatibility.
STDPRTCT. STDPRT	2467A-B	297-1001-451	Each standard pretranslator (STDPRTCT.STDPRT) subtable sets up the translation for a specific call type. It is the first subtable to be indexed by the received leading digits if table LINEATTR or table TRKGRP specifies a standard pretranslator subtable name.
CKTDIGIT	2142A-B	297-1001-451	Table CKTDIGIT (circuit digit) allows the combination of the TNS and circuit code to be mapped into a particular 0ZZ, 1NX, or 1N'X circuit digit value.

Datafilling table OCCINFO

Table OCCINFO defines the attributes for carriers serving the end office and screens calls for carrier compatibility. For example, table OCCINFO allows international traffic to be sent only to carriers capable of handling such traffic.

The following procedure shows the datafill for table OCCINFO. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

NTXE13AC - CCS7 ISUP Inter-LATA Connection EAEO (continued)

Datafilling table OCCINFO Field	Subfield	Explanation and action
ACCESS		*Access arrangement* Enter one of the following access types accepted by the carrier to handle a call: ▪ TRANS or EAP for EAEO calls that complete directly to the IEC over trunks using CCS7 or for calls that complete over CCS7-supported circuits to the AT and from the AT to the IEC. ▪ FGC for CCS7-to-MF FGC IEC interworking calls. ▪ INTERIM for CCS7-to-MF FGB IEC interworking calls.
NOA950		*Nature of address indicator* Enter Y to show that the nature of address indicator in the calling party number parameter is set to 1111110. This binary values means that the call is a network specific, 950+ call from public station or hotel/motel line or non-EAEO. Enter N to show that the nature of address indicator in the calling party number parameter is set to the usual value. ***Note:*** The default value of N will cause no change in the existing operation of the switch.
INCCPN		*Include calling party number* Enter N to indicate that the calling party number parameter is to be removed from any IAM sent to this carrier. Otherwise enter Y, the default value.

NTXE13AC - CCS7 ISUP Inter-LATA Connection EAEO (continued)

Datafill example for table OCCINFO

The following example shows sample datafill for table OCCINFO. In this example, two carriers are serving the EAEO, C111 and C222.

Datafill example for table OCCINFO

Example of a MAP display:

```
CARRNAME CARRNUM ACCESS ORIGCARR INTER INTNTL INTRA ANI FANI
ONISCRN AD1 OVERLAP INTERS INTRAS TERMREC OCCSEPNO OPSIG PICIND
NOA950 INCCPN DTMFIND OPSERV CACBLOCK CTDOA CMCMON SCRNWATS
CRMCRA ATPINCL INTRAOPR
```

```
 C111    0111   EAP     Y      Y      Y     N   Y    N
N     Y       Y     Y       Y    LONG       0    FGRPC    Y
 N       N     N        N       N      N      N       N
  Y    N         N
 C222    0222   EAP     Y      Y      N     Y   N    N
N    N        Y     Y       N    SHORT      0    FGRPC    N
 N    N        N       N       N      N      N       N
  Y    N         N
```

Datafilling subtable STDPRTCT.STDPRT

Subtable STDPRTCT.STDPRT is the first table to be indexed by the received leading digits when the originating line attribute (from table LINEATTR) or trunk (from table TRKGRP) specifies a pretranslator name.

The following procedure shows the datafill for subtable STDPRTCT.STDPRT to implement FGB-to-CCS7 interworking. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema,* 297-1001-451, for a description of the other fields.

Datafilling subtable STDPRTCT.STDPRT for PRERTSEL = FGB

Field	Subfield	Explanation and action
FROMDIGS		*From digits* Enter the digit(s) to be translated. If the entry is a block of consecutive numbers, enter the first number in the block.
TODIGS		*To digits* If FROMDIGS is a block of consecutive numbers, enter the last number in the block. Otherwise, this field equals FROMDIGS.

-continued-

NTXE13AC - CCS7 ISUP Inter-LATA Connection EAEO (continued)

Datafilling subtable STDPRTCT.STDPRT for PRERTSEL = FGB (continued)

Field	Subfield	Explanation and action
PRETRTE		*Pretranslation route* For the FGB selector, this field is composed of subfields PRERTSEL, TYPCALL, NOPREDIG, CARRNAME, and RTEAREA, RTEPRSNT, EXTRTEID, TABID, KEY, MINIDIGSR, and MAXDIGSR.
	PRERTSEL	*Pretranslator route selector* Enter FGB to originate FGB calls.
	TYPCALL	*Type of call* Enter the type of call: direct dial (DD), no prefix (NP), or operator assisted (OA). ***Note:*** TYPCALL must be set to DD to enable call billing.
	NOPREDIG	*Number of prefix digits* Enter the number of prefix digits (0 to 7).
	CARRNAME	*Carrier name* Enter the name of the carrier, as defined in table OCCNAME, to which the call is offered.
	RTEAREA	*Route area* This field is composed of subfield RTEPRSNT.
	RTEPRSNT	*Route present* Enter Y to datafill subfields EXTRTEID, TABID, KEY, MINDIGSR and MAXDIGSR. Otherwise, enter N.
	EXTRTEID	*External route ID* This field is composed of subfields TABID and KEY.
	TABID	*Table identifier* Enter OFRT. This table contains the routes for FGB calls.
	KEY	*Index* Enter the office route index (0 to 1023) that the translation is routed to.

-continued-

NTXE13AC - CCS7 ISUP Inter-LATA Connection EAEO (continued)

Datafilling subtable STDPRTCT.STDPRT for PRERTSEL = FGB (continued)		
Field	**Subfield**	**Explanation and action**
	MINDIGSR	*Minimum digits received* Enter the minimum number of digits (1 to 15) to be collected before routing the call.
	MAXDIGSR	*Maximum digits received* Enter the maximum number of digits (1 to 24) to be collected before routing the call.
End		

The following procedure shows the datafill for subtable STDPRTCT.STDPRT to implement FGD-to-CCS7 interworking. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling subtable STDPRTCT.STDPRT for PRERTSEL = EA		
Field	**Subfield**	**Explanation and action**
FROMDIGS		*From digits* Enter the digit(s) to be translated. If the entry is a block of consecutive numbers, enter the first number in the block.
TODIGS		*To digits* If FROMDIGS is a block of consecutive numbers, enter the last number in the block. Otherwise this field equals FROMDIGS.
PRETRTE		*Pretranslation route* For Equal Access calls, this field is composed of subfields PRERTSEL, TYPCALL, NOPREDIG, XLA_INFO, CARRNAME, and RTEAREA.
	PRERTSEL	*Pretranslator route selector* Enter EA, the pretranslator route selector for Equal Access calls.
	TYPCALL	*Type of call* Enter the type of call: DD, NP, or OA. ***Note:*** TYPCALL must be set to DD to enable call billing.
-continued-		

NTXE13AC - CCS7 ISUP Inter-LATA Connection EAEO (continued)

Datafilling subtable STDPRTCT.STDPRT for PRERTSEL = EA (continued)

Field	Subfield	Explanation and action
	NOPREDIG	*Number of prefix digits* Enter the number of prefix digits (0 to 7).
	XLA_INFO	*Equal Access translation information* This field is composed of subfield XLATYPE.
	XLATYPE	*Equal Access translation type* Enter one of the following values: N when no further digit translation or screening is required. A route must then be specified in field RTEAREA. P when further pretranslation is required. A pretranslator subtable name must be entered in field PRTNM. T when no further pretranslation is required. Translation then proceeds as determined by field TRANSYS.
	PRTNM	*Pretranslator subtable name* Enter the name of the pretranslator subtable that translation routes to for pretranslation of the remaining digits. This field is displayed when XLATYPE = P.
	TRANSYS	*Translation system* Enter one of the following values: NA when translation is to proceed to North American digit translations and screening. IN when translation is to proceed to international translations. NO when no further translation or screening is required. This field is displayed when XLATYPE = T.
	CARRNAME	*Carrier name* Enter the name of the carrier, as defined in table OCCNAME, to which the call is offered.
	RTEAREA	*Route area* This field is composed of subfield RTEPRSNT.
	RTEPRSNT	*Route present* Enter Y to datafill fields EXTRTEID, TABID, KEY, MINDIGSR, MAXDIGSR, and OCS. Otherwise, enter N.
	EXTRTEID	*External route ID* This field is composed of subfields TABID and KEY.

-continued-

NTXE13AC - CCS7 ISUP Inter-LATA Connection EAEO (continued)

Datafilling subtable STDPRTCT.STDPRT for PRERTSEL = EA (continued)		
Field	**Subfield**	**Explanation and action**
	TABID	*Table identifier* Enter an office route table name (OFRT, OFR2, OFR3, OFR4).
	KEY	*Index* Enter the office route index (0 to 1023) that the translation is routed to.
	MINDIGSR	*Minimum digits received* Enter the minimum number of digits (1 to 18) to be collected before routing the call.
	MAXDIGSR	*Maximum digits received* Enter the maximum number of digits (1 to 24) to be collected before routing the call.
OCS		*Overlap carrier selection* If this field is set to Y and the carrier has field OVERLAP set to Y in table OCCINFO, then the call uses OCS. Otherwise, OCS is not used.
	End	

Datafill example for subtable STDPRTCT.STDPRT

The following example shows sample datafill for subtable STDPRTCT.STDPRT.

Datafill example for subtable STDPRTCT.STDPRT

Example of a MAP display:

```
      FROMDIGS        TODIGS
                                             PRETRTE
_____________________________________________________
       950WXXX         950WXXX
                 FGB DD 0    OFRT      100     7   7
```

Datafilling table CKTDIGIT

Table CKTDIGIT is required whenever there is a CCS7 trunk between an EAEO and an AT. In the EAEO, this table is used to map the 0ZZ or 1N/N’X digits into the circuit code field of the TNS parameter. This table is indexed by the carrier name and the circuit code fields, so for each carrier serving the AT, there should be a tuple per 0ZZ or 1N/N’X code passed to this carrier.

NTXE13AC - CCS7 ISUP Inter-LATA Connection EAEO (end)

The following procedure shows the datafill for table CKTDIGIT. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table CKTDIGIT		
Field	**Subfield**	**Explanation and action**
CARRIER_ NAMES		*Carrier names* Enter the name of the carrier serving the EAEO.
CKT_CODE		*Circuit code* Enter the circuit code mapped in the TNS parameter of the IAM sent to the AT.
CKTDIGITS		*Circuit digits* Enter the first three digits in the Equal Access signaling digit sequences 0ZZ XXX, 1N/N'X XXX CCC, or 1N/N'X XXX 01R transmitted on MF trunks. These digits are used to single out one of the outgoing circuits in the carrier group. This field is always composed of 3 digits. The first digit should be 0 or 1. The remaining two digits can be any value from 00 to 99.

Datafill example for table CKTDIGIT

The following example shows sample datafill for table CKTDIGIT.

Datafill example for table CKTDIGIT

Example of a MAP display:

CARRNAME	CKTCODE	CKTDIGITS
CARR1	1	138

Translation verification tools

Translation verification tools are not applicable for this package.

Service orders

Service orders are not applicable for this package.

NTX083AA - Feature Group A

Package name

Feature Group A

Package number

NTX083AA

Feature numbers

The NTX083AA feature package consists of the following features:

NTX083AA feature numbers and names

Feature number	Feature name
BR0520	Billing on Terminating Calls to a Line
BR0768	FGA Terminating Record

BCS applicability

BCS23 and up

Feature package prerequisites

This package requires the following feature packages:

Feature package prerequisites

Feature package	Feature package name
NTX000AA	Bilge
NTX001AA	Common Basic
NTX042AA	Local Automatic Message Accounting
NTX159AA	Bellcore LAMA Format
NTX901AA	Local Features I

Description

There are several arrangements, referred to as feature groups, by which IECs can choose to connect their facilities to operating company networks. The earliest and simplest of these arrangements is FGA, which provides line-side access from an end office to an IEC. To gain FGA access to the IEC, a subscriber dials a local seven-digit directory number that is assigned to that carrier.

The NTX083AA feature package allows the end office to generate AMA records when a subscriber originates a call to an FGA carrier or when an FGA carrier terminates a call to an end office.

NTX083AA - Feature Group A (continued)

For more information about FGA and other access arrangements, see *Equal Access Product Guide*, 297-2101-011.

Theory of operation

An FGA call can be viewed in two stages: the originating and the terminating portion of the call. The originating portion of an FGA call occurs between a subscriber and an FGA carrier. The terminating portion of an FGA call occurs between an FGA carrier and the called party.

There are three FGA call possibilities:

- A call can be both FGA originating (FGA lines between the originating end office and the IEC) and FGA terminating (FGA lines between the IEC and the terminating end office).
- A call can be only FGA originating, but use FGB, FGC, or FGD trunks between the IEC and the terminating end office.
- A call can use FGB, FGC, or FGD trunks between the originating end office and the IEC (the originating portion of the call), but be FGA terminating.

This feature package includes the following two features:

- FGA originating record
- FGA terminating record

FGA originating record

This feature enables the end office to generate an AMA record for an originating FGA call. This feature is compatible with both Northern Telecom (NT) and Bellcore AMA record formats.

The ability to produce an AMA record for an originating FGA call is accomplished through hunt groups. The FGA lines in the originating end office are set up as a hunt group.

The terminating billing option (TRMBOPT) is assigned in table HUNTGRP to the pilot directory number of the hunt group. When a call is made to a member of a hunt group with the TRMBOPT option, an AMA record (code 131) is generated.

FGA terminating record

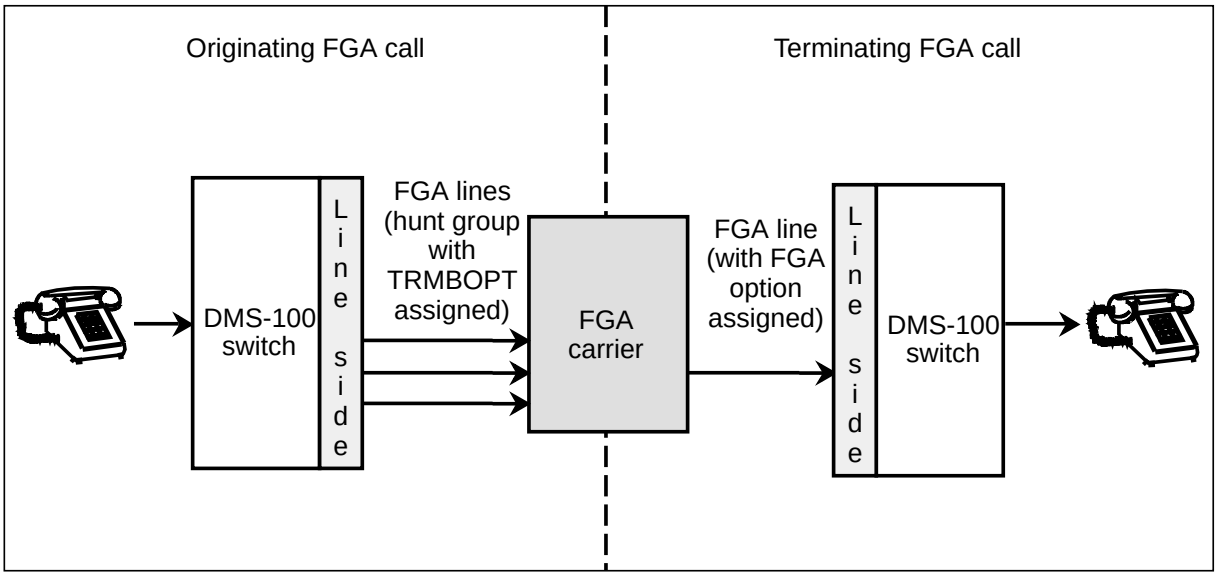
This feature enables the end office to generate an AMA record for a terminating FGA call. This feature is compatible only with Bellcore AMA record format and is implemented as a line option.

A terminating FGA line is defined by assigning the FGA option to this line in table LENLINES. This option is assigned in the terminating end office.

When a call is made from an FGA carrier to the terminating end office, an AMA record (code 132) is generated.

Figure 3-6 shows a simple originating and terminating FGA call.

Figure 3-6
Originating and terminating FGA call



Translations table flow

The NTX083AA - Feature Group A translation process is shown in the flowchart that follows.

Table LENLINES contains the hardware assignments of all working lines and any options assigned to them. It is indexed based on the line equipment number (LEN) of the calling party. It also provides the line attribute index used to access table LINEATTR.

Table LINEATTR determines the indexing into screening tables and initially defines the type of line generating the call. It also provides the pretranslator name used to access table STDPRTCT.

Table STDPRTCT sets the type of call being processed and performs other functions related to call routing and screening.

Subtable STDPRTCT.STDPRT is indexed based on the leading digits of the number dialed. If leading digits are found, call type is set, leading digits are stripped if appropriate, and routing is set to continue translations.

NTX083AA - Feature Group A (continued)

Table HNPACONT contains a list of all the valid home or serving numbering plan areas (SNPA) and serving translation schemes (STS). The SNPA for the FGA lines is stored in table LINEATTR and is associated with the line attribute assigned to the lines.

Subtable HNPACONT.HNPACODE lists the route, treatment or table to which translations must route for each three-digit SNPA or STS defined in table HNPACONT. A code type is assigned to each code defined in table HNPACONT. A code type of DN should be assigned to the FGA line. The DN selector is used with lines that terminate in the end office.

Table TOFCNAME defines all terminating offices in the switch. A terminating office is a unique combination of area code and office code.

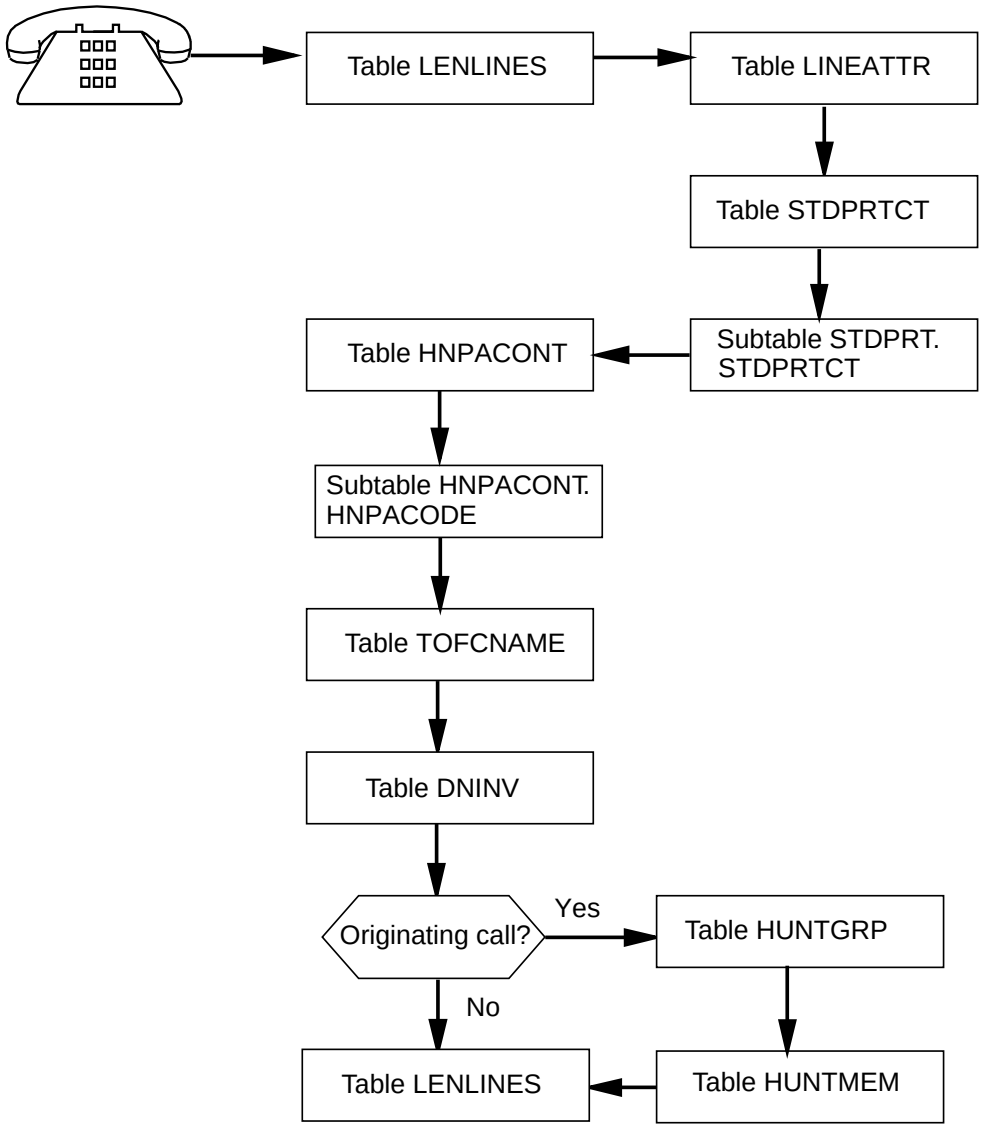
Table DNINV lists all the directory numbers in the switch and any relevant information such as to which LEN or hunt group each directory number is assigned.

Table HUNTGRP defines all the hunt groups that are associated with an office. The FGA carrier hunt group is defined in this table. It is used for originating FGA calls. For an originating FGA call to be billed properly, option TRMBOPT must be assigned to the pilot directory number of the FGA carrier hunt group.

Table HUNTMEM lists the members assigned to the hunt groups listed in table HUNTGRP. It is used for originating FGA calls.

NTX083AA - Feature Group A (continued)

Table flow for NTX083AA - Feature Group A



NTX083AA - Feature Group A (continued)

Description of translations progression (call origination)

The following table lists the datafill content used in the flowchart example. The first stage of the call (origination) is described.

Datafill example for NTX083AA (origination)	
Item	**Example data**
Calling number	(613) 622-1177
Called number	622-1176
Call code	131
Datafill table	**Example data**
LENLINES	HOST 00 0 00 2 S 0 6221177 DT 0 DGT
LINEATTR	0 1FR NONE NT FR01 0 613 PRT1 L613 Y TSPS N 10 NIL LATA2 0 NIL
STDPRTCT	PRT1 (1) (1)
STDPRTCT .STDPRT	50 60 N NP 0 NA
HNPACONT	613 128 1 (16) (1) (0) (0)
HNPACONT .HNPACODE	622 622 DN 613 622
TOFCNAME	613 622
DNINV	613 622 1176 H 0 01
HUNTGRP	0 613 6211176 DNH N N Y RCVD N N N N 10
HUNTMEM	0 1 N D 6211176 N

The previous translations flow is as follows:

- Line (613) 622-1177 dials 622-1176 to access an IEC.
- Table LENLINES is indexed based on the LEN (HOST 00 0 00 2) of the calling party.
- Table LINEATTR is indexed from table LENLINES with the line attribute index number (0).

- From table LINEATTR, the translations move to table STDPRTCT using the pretranslator name (PRT1) given in table LINEATTR.
- From table STDPRTCT, translations index into subtable STDPRTCT.STDPRT using the leading digits dialed (622). The tuple associated with this number sets the call type as no prefix (NP) or local, routes the call to table HNPACONT with an N and NA selector, and indicates that the number dialed did not include a prefix digit (0 or 1).

  Note: Subtable STDPRTCT.AMAPRT is checked, but the tuple (6221176) is not found and the table is ignored.
- From subtable STDPRTCT.STDPRT, translations index into table HNPACONT using the area code of the calling line (613).
- Subtable HNPACONT.HNPACODE is indexed from table HNPACONT using the leading digits dialed (622). The tuple associated with this number gives a DN selector which provides an area code for the number dialed and routes the call to table TOFCNAME.
- Table TOFCNAME is indexed using the area code and NXX provided by subtable HNPACONT.HNPACODE.
- From table TOFCNAME, table DNINV is indexed using the area code, NXX, and the last four digits of the number dialed. The tuple associated with the number dialed indicates that it is part of a hunt group.
- In table HUNTGRP, the appropriate tuple is indexed using the hunt group number provided in table DNINV. The tuple gives information about the hunt group. For this feature, field TRMBOPT is set to Y which generates an AMA call code of 131.
- Table HUNTMEM is also indexed using the hunt group number and the member number provided in table DNINV. The tuple associated with it gives information about the member.
- Translations continue to LENLINES and connect to the IEC. The carrier then returns the dial tone to the subscriber who enters appropriate codes and the long-distance number desired.

Description of translations progression (call termination)

The following table lists the datafill content used in the flowchart example. The second stage of the call (termination) is described.

Datafill example for NTX083AA (termination)	
Item	**Example data**
Calling number	(213) 771-1222
Called number	771-1145

-continued-

NTX083AA - Feature Group A (continued)

Datafill example for NTX083AA (termination) (continued)	
Call code	132
Datafill table	**Example data**
LENLINES	HOST 00 0 01 24 S 0 7711222 DT 0 DGT FGA
LINEATTR	0 1FR NONE NT NSCR 0 213 P771 L213 Y TSPS N 14 NIL LATA0 0 NIL
STDPRTCT	P771 (11) (0)
STDPRTCT .STDPRT	20 90 N NP 0 NA
HNPACONT	213 65 1 (18) (5) (0) (0)
HNPACONT .HNPACODE	771 771 DN 213 771
TOFCNAME	213 771
DNINV	213 771 1145 L 00 1 17 23
LENLINES	HOST 00 1 17 23 S 1 7711145 DT 0 DGT CWT
End	

The previous translations flow is as follows:

- The inter-LATA carrier line (213) 771-1222 dials 771-1145, the number of the called party.
- Table LENLINES is indexed based on the LEN (HOST 00 0 01 24) of the calling party.
- Table LINEATTR is indexed from table LENLINES with the line attribute index number (0).
- From table LINEATTR, the translations move to table STDPRTCT using the pretranslator name (P771) given in table LINEATTR.
- From table STDPRTCT, translations index into subtable STDPRTCT.STDPRT using the leading digits dialed (771). The tuple associated with this number sets the call type as no prefix (NP) or local, routes the call to table HNPACONT with an N and NA selector, and indicates that the number dialed did not include a prefix digit (0 or 1).

  Note: Subtable STDPRTCT.AMAPRT is checked, but the tuple (6221176) is not found and the table is ignored.
- From subtable STDPRTCT.STDPRT, translations index into table HNPACONT using the area code of the calling line (213).

- Subtable HNPACONT.HNPACODE is indexed from table HNPACONT using the leading digits dialed (771). The tuple associated with this NXX gives a DN selector which provides an area code for the number dialed and routes the call to table TOFCNAME.
- Table TOFCNAME is indexed using the area code and NXX provided by subtable HNPACONT.HNPACODE.
- From table TOFCNAME, table DNINV is indexed using the area code, NXX, and the last four digits of the number dialed. The tuple associated with the number dialed indicates that it is not part of a hunt group.
- Translations continue to LENLINES and connect to the line dialed.

Package limitations and restrictions

The following limitations and restrictions apply to the FGA originating record feature:

- The following feature options are incompatible with option TRMBOPT:
  - denied termination (DTM)
  - MDC call forwarding (CFX)
  - POTS call forwarding (CFW)
- This feature is not compatible with trunks of any type, including private branch exchange (PBX) trunks.
- This feature is optional on a hunt group basis. Even though an office has purchased package NTX083AA, option TRMBOPT must be added to the pilot directory number of the hunt group.
- SERVORD allows the addition of option TRMBOPT to a hunt group even if package NTX083AA has not been purchased. However, this feature does not function properly unless feature package NTX083AA has been purchased and option TRMBOPT has been assigned to the pilot directory number of the hunt group.

The following limitations and restrictions apply to the FGA terminating record feature:

- The AMA billing records generated by this feature are restricted to Bellcore format.
- The FGA line option is restricted to POTS lines with the following line class codes:
  - 1FR single party, flat rate
  - 1MR single party, message rate

Feature interactions

The following line class codes are compatible with option TRMBOPT:

- 1FR single party, flat rate

NTX083AA - Feature Group A (continued)

- 1MR single party, metered rate
- PBX private branch exchange
- PBM PBX message register
- MDC Meridian Digital Centrex

The following line options are compatible with the terminating FGA option:

- CLI calling line identification
- SHU stop hunt
- RSUS requested suspension
- SLU subscriber line usage
- SDY line studies
- DOR denied originating service
- DTM denied terminating service
- LCDR local call detail recording
- CLF malicious call hold
- NLT no line insulation test
- NOH no receiver off hook tone
- SUS suspended service
- DGT Digitone
- PIC primary inter-LATA carrier

Activation/deactivation by the end user

Activation/deactivation is not applicable for this package.

Billing

An FGA carrier making an inter-LATA call from a 1FR or a 1MR line normally produces one billing record with call code 110. Now, an additional Bellcore AMA record with call code 132 is generated.

Datafilling office parameters

This package does not affect office parameters.

Datafill sequence

The following tables require datafill so that NT format AMA originating and terminating records are generated when an originating FGA call occurs. The tables are listed in the order in which they are to be datafilled.

Note: The datafill required to produce a Bellcore format AMA record for an originating FGA call is almost the same as the datafill described in the following table and paragraphs. However, no datafill is required for table TOLLENTC when Bellcore AMA format records are used.

Datafill tables required for Feature Group A

Table	Form	NTP	Purpose of table
TOLLENTC	2330	297-1001-451	Table TOLLENTC (entry code) lists the entry code for each of the charge classes listed in table BILLCODE for incoming or two-way CAMA trunk groups and in table LINEATTR for lines. ***Note:*** This table is only used in offices that are using NT AMA record format.
HUNTGRP	2205A-B	297-2101-451	Table HUNTGRP (hunt group) defines all the hunt groups associated with an office. The FGA carrier hunt group is defined in this table.
LENLINES	2209A-B	297-2101-451	Table LENLINES (line equipment number) contains information about LENs, as well as their associated directory numbers and options.

Datafilling table TOLLENTC

Table TOLLENTC lists the entry code for each of the charge classes listed in table LINEATTR for lines. Charge class TRMB is used for local billable calls which terminate on a line belonging to a hunt group. It should be datafilled for FGA AMA originating records.

The following procedure shows the datafill for table TOLLENTC. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

NTX083AA - Feature Group A (continued)

Datafilling table TOLLENTC

Field	Subfield	Explanation and action
CHGCLASS		*Charge class* Enter TRMB.
ECANDCHG		*Entry code and charge* This field consists of the following subfields.
	ENTCODE	*Entry code* Enter the entry code (0 to 99) assigned to the charge class.
	APPLYCHG	*Apply charge* Enter Y to apply a charge for call. Otherwise, enter N.

Datafill example for table TOLLENTC

The following example shows sample datafill for table TOLLENTC. In this example, charge class TRMB is assigned entry code 31.

Datafill example for table TOLLENTC

Example of a MAP display:

```
 CHGCLASS  ECANDCHG
________________________________________
      TRMB      31 Y
```

Datafilling table HUNTGRP

Table HUNTGRP defines all the hunt groups associated with an office. The FGA carrier hunt group is defined in this table. Option TRMBOPT must be assigned to the pilot directory number of the FGA carrier hunt group to generate a billing record for an originating FGA call.

The following procedure shows the datafill for table HUNTGRP. This procedure contains only those fields that apply to this package. See *Meridian Digital Centrex Customer Data Schema*, 297-2001-451, for a description of the other fields.

Datafilling table HUNTGRP

Field	Subfield	Explanation and action
TRMBOPT		*Terminating billing option* Enter Y if a record is to be generated for each call to a member of the hunt group. Otherwise, enter N.

Datafill example for table HUNTGRP

The following example shows sample datafill for table HUNTGRP.

Datafill example for table HUNTGRP

Example of a MAP display:

```
 HTGRP SNPA      DN     GRPTYP                            GRPDATA
________________________________________________________________
     0  619 5206100         DNH  N   N   N     RCVD        N
          N                                           N
                                                            N
                                                   Y  O
                                        N    1                $
```

Datafilling table LENLINES

Table LENLINES contains information about LENs as well as their associated directory numbers and options. Line option FGA must be assigned to the terminating FGA lines.

The following procedure shows the datafill for table LENLINES. This procedure contains only those fields that apply to this package. See, *Meridian Digital Centrex Customer Data Schema*, 297-2001-451, for a description of the other fields.

Datafilling table LENLINES

Field	Subfield	Explanation and action
OPTLIST		*Option list* Enter a list of up to 20 basic options which are assigned to the directory number. Assign the FGA line option to the FGA line that is between the IEC and the terminating end office. Assign the the DOR (denied originating service) option to the pilot directory number of the hunt group (located between the EAEO and the AT) to keep the FGA carrier from originating calls.

Datafill example for table LENLINES

The following example shows sample datafill for table LENLINES. Line CRCS 00 0 00 00 is assigned the FGA option.

NTX083AA - Feature Group A (continued)

Datafill example for table LENLINES

Example of a MAP display:

```
              LEN PTY RINGCODE       DN
                                 SIGTYPE  LNATTIDX         OPTLIST
 CRCS 00 0 00 00   S       0  5340100
                                    DT        15 (   CWT) (   FGA)$
```

Translation verification tools

Translation verification tools are not applicable for this feature package.

Service orders

The SERVORD system should be the only method used to assign option TRMBOPT. The FGA option should be added to and deleted from a line through the use of SERVORD.

Service orders limitations and restrictions

The following limitations and restrictions apply to NTX083AA - Feature Group A:

- SERVORD accepts option TRMBOPT only for the pilot directory number of a hunt group.
- SERVORD allows the addition of option TRMBOPT to a hunt group even though the office may not have purchased feature package NTX083AA.
- Unless feature package NTX083AA is purchased and option TRMBOPT is assigned to the pilot directory of the hunt group, an AMA record is not generated.

Service order prompts

The following table shows the service order prompts used to assign option TRMBOPT to the pilot directory number of a hunt group.

Service order prompts for option TRMBOPT

Prompt	Valid input	Explanation
DN_OR_ LEN	Valid DN or LEN	Enter the 7-digit DN or the LEN.
OPTION	TRMBOPT	Enter TRMBOPT to assign the option to the pilot directory number of the hunt group.

The following table shows the service order prompts used to assign option FGA to a line.

Service order prompts for option FGA

Prompt	Valid input	Explanation
DN_OR_LEN	Valid DN or LEN	Enter the 7-digit directory number or enter the LEN.
OPTION	FGA	Enter FGA to assign the option to a line.

Example service orders

The following service order example shows how option TRMBOPT is added to the pilot directory number of a hunt group using the ADO command.

Setting up option TRMBOPT using the ADO command

Input and response

*Input in **Prompt** mode*

```
>ADO
 SONUMBER: NOW 91 8 4 AM
>$
 DN_OR_LEN:
>6211176
 OPTION:
>TRMBOPT
 OPTION:
>$
```

*Input in **No-prompt** mode*

```
>ADO $ 6211176 TRMBOPT $
```

NTX083AA - Feature Group A (end)

The following service order example shows how option FGA is added to a line using the ADO command.

Setting up option FGA using the ADO command

Input and response

*Input in **Prompt** mode*

```
>ADO
 SONUMBER: 91 8 4 AM
>
 DN_OR_LEN:
>6211177
 OPTION:
>FGA
 OPTION:
>$
```

*Input in **No-prompt** mode*

```
>ADO $ 6211177 FGA $
```

NTX209AB - FGB AMA End Office (ATT Format)

Package name

FGB AMA End Office (ATT Format)

Package number

NTX209AB

Feature numbers

The NTX209AB feature package consists of the following features:

NTX209AB feature numbers and names

Feature number	Feature name
BR0494	Access Charge Recording End Office (ATT Format)
BC1680	FGB - AMA Enhancements
BC2136	FGB Calls from LAMA End Office to IEC via AT
NC0202	Carrier Access Code Expansion (FGB)

BCS applicability

BCS33 and up

Feature package prerequisites

This package requires the following feature packages:

Feature package prerequisites

Feature package	Feature package name
NTX000AA	Bilge
NTX001AA	Common Basic
NTX042AA	Local Automatic Message Accounting
NTX159AA	Bellcore LAMA Format
NTX901AA	Local Features I

Description

The NTX209AB - FGB AMA End Office (ATT Format) feature package allows billing records to be generated for calls to FGB carriers and ensures that the carrier identification information in those records is correct.

This feature package also allows two-way OC trunk groups to access FGB carriers and to generate billing records for FGB calls. It also allows FGB calls routed through an AT to be billed in the end office.

NTX209AB - FGB AMA End Office (ATT Format) (continued)

Finally, this feature package separates FGB CICs from FGD CICs and expands the FGB CIC from three to four digits.

Theory of operation

The NTX209AB feature package, in combination with the proper trunking and translations, is used to set up an FGB access arrangement. Networks that support this arrangement allow end offices and ATs to provide subscribers with access to FGB carriers. All offices participating in the network accept FGB dialing and FGC signaling. All subscribers participating in the network must have Dual Tone multifrequency phones so the audio tones representing the digits dialed can be passed through the network to the carrier.

This section describes the features specific to the NTX209AB - FGB AMA End Office (ATT Format) feature package. For more information about FGB, see *Equal Access Product Guide*, 297-2101-011.

Generating billing for FGB calls

Table AMAOPTS controls the activation and scheduling of the recording options. This table includes the ENFIA_B_C option to allow FGB calls to be recorded so appropriate billing charges can be calculated. ENFIA_B_C is always set to on.

> ***Note:*** If an office uses the NT AMA format and the DMS software does not include table AMAOPTS, the ENFIA_B_C option is automatically turned on.

There is one tuple in table AMAOPTS for each recording option. Initially, default values are used for all of the options. The default values on the office type are defined (NT or Bellcore) in office parameter AMA_FORMAT. Both NT and Bellcore AMA formats are supported for FGB calls.

Ensuring the accuracy of billing records

Table TRKNAME specifies the name of each trunk group in the DMS switch and maps each trunk group name to a number in the centralized automatic reporting on trunks (CAROT) database.

Because each trunk in the switch must be identified uniquely, this feature package also modifies the table control for table TRKNAME so duplicate CLLI entries cannot be entered. This modification ensures that the correct carrier is billed when the system software compares the IEC/INC prefix field in the FGB terminating record (call code 135) with the CLLI names in table TRKNAME.

FGB on two-way trunk groups

Table TRKGRP for the OC trunk group type defines the characteristics of the outgoing and two-way trunk groups from local to CAMA trunk groups. This feature package adds subfields FGBTRAFC and FGBANI to this table. With this modification, two-way OC trunks can be used to access FGB carriers and generate the AMA records required for FGB calls. These trunks also provide ANI information in the Bellcore CAMA signaling format required by the carrier.

This feature package also modifies table TRKGRP by adding subfield CARRNM, which identifies the carrier using a two-way OC trunk group. This field sets the IC/INC prefix field of the FGB terminating record (call code 135).

Adding subfield CARRNM to table TRKGRP (OC) also ensures billing accuracy. When generating billing records, the DMS switch can verify that the carrier name in table TRKGRP (OC) is valid by comparing subfield CARRNM in this table with field OCCNAME in table OCCNAME, which lists the names of all carriers serving the DMS switch.

Billing FGB calls from LAMA end office to IEC via AT

This feature allows FGB calls routed through an AT to be billed in the end office. The proper call code 134 billing record is made and ANI digits are not spilled to the AT.

FGB CIC expansion

This feature package expands the CIC for FGB carriers to four digits to allow a uniform 950-XXXX FGB CAC. This expanded code is optional; carriers may still use their old three-digit CIC.

To implement the expansion of FGB CICs, table FGBCIC is created. The table contains carrier names and their four-digit FGB CICs. Datafilling this table allows 950-XXXX dialing to that carrier and produces a four-digit CIC in the billing record.

This CIC expansion is compatible with the current three-digit CIC scheme for FGB. Only FGB carriers with four-digit CICs must be datafilled in table FGBCIC.

The IEC/INC prefix in the billing record is generated as follows:

- For all originating FGB calls, if the carrier name is not datafilled in table FGBCIC, the prefix is generated as usual. If the carrier is datafilled in table FGBCIC, the FGBCIC four-digit code is used.

NTX209AB - FGB AMA End Office (ATT Format) (continued)

- For all terminating FGB calls, if the carrier name is not in table FGBCIC, the prefix is generated as usual and the carrier name is retrieved from the incoming trunk group data. If the carrier is datafilled in table FGBCIC, the FGBCIC four-digit code is used.

If an IEC or INC is capable of both FGB and FGD signaling and uses a four-digit access code for FGB, table OCCINFO will contain the FGD CIC and table FGBCIC will be datafilled with the four-digit FGB CIC.

Translations table flow

The NTX209AB - FGB AMA End Office (ATT Format) translation process is shown in the flowchart that follows.

Table LINEATTR provides a list of attributes associated with the line index assigned to every suscriber line.

Table STDPRTCT lists the operating company-defined names of the standard pretranslator subtable (STDPRTCT.STDPRT).

Subtable STDPRTCT.STDPRT sets up the translations for a specific call type.

Table HNPACONT lists the home or SNPA and the STS.

Subtable HNPACONT.HNPACODE specifies the route, table, or treatment to which translation must route for each exchange within NPAs or STSs defined in table HNPACONT.

Subtable HNPA.RTEREF defines the routing for each NPA defined in table HNPACONT.

Table OFRT defines all carrier routes and operator service routes. Each tuple provides the route number and the route list, which must include a primary route and may include alternate routes.

Table TRKGRP contains some of the customer-defined data associated with the trunk group handling local ANI to toll CAMA.

Table TRKSGRP lists supplementary information for each subgroup assigned to one of the trunk groups listed in table TRKGRP.

Table AMAOPTS controls the activation and scheduling of the recording options for local, tool, and high-revenue calls. There is one tuple for each option; a schedule is associated with each option. The schedule defines whether an option is active, active only at certain times, or not active.

NTX209AB - FGB AMA End Office (ATT Format) (continued)

Table BCCODES allows the operating company to specify which unanswered calls will create billing records. If an option is active in table AMAOPTS, table BCCODES is searched for the corresponding call code. If the code is found in table BCCODES, a billing record for that unanswered call is created.

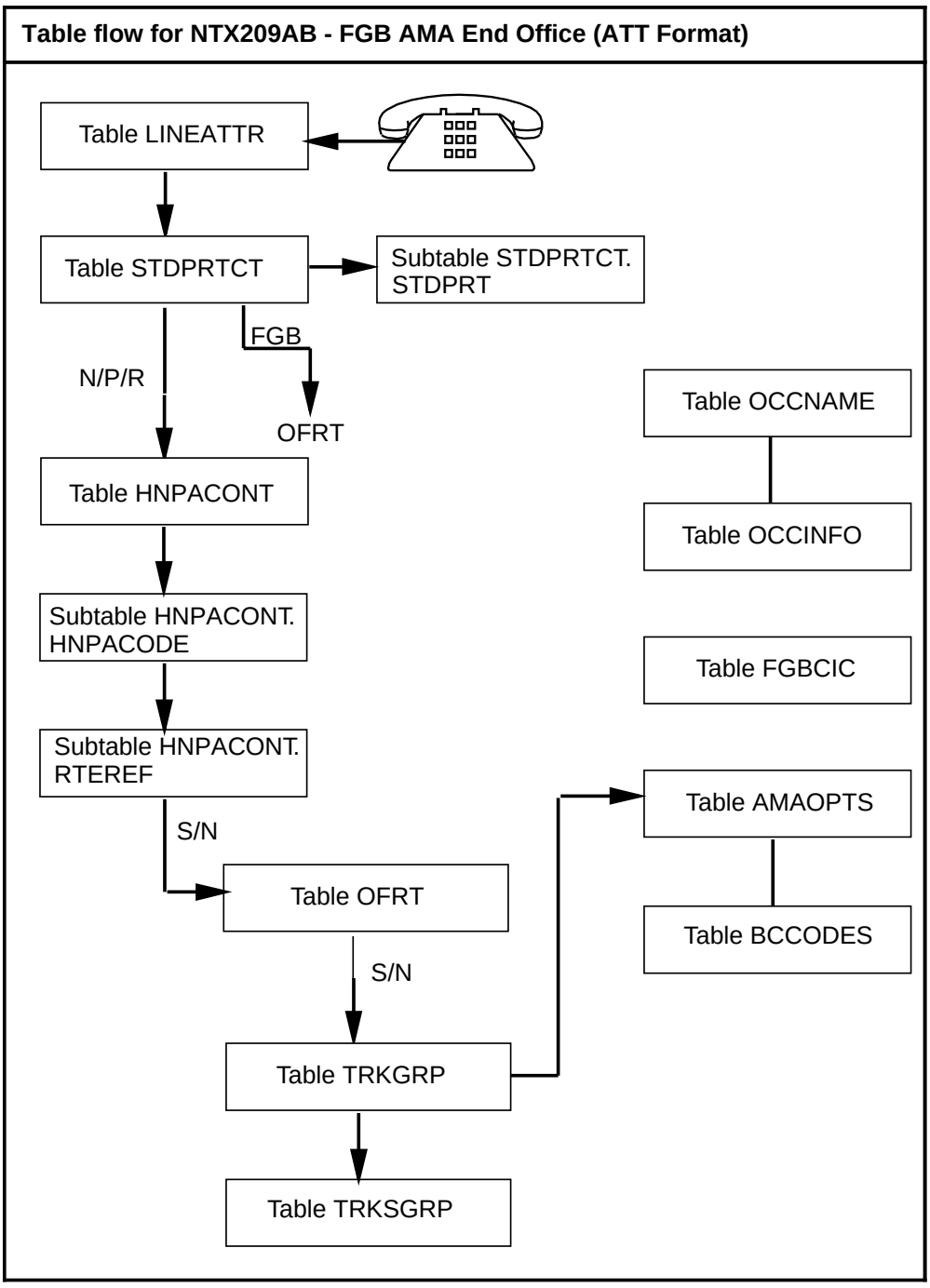
Table OCCNAME lists the names of the connected carriers.

Table OCCINFO defines the attributes for carriers serving the DMS switch and screens calls for carrier compatibility.

Table FGBCIC determines if the carrier has a three- or four-digit CIC. The table is searched when a carrier is accessed and if the carrier name appears in the table, then the four-digit CIC entered is used.

NTX209AB - FGB AMA End Office (ATT Format) (continued)

Table flow for NTX209AB - FGB AMA End Office (ATT Format)



NTX209AB - FGB AMA End Office (ATT Format) (continued)

The following table lists the datafill content used in the flowchart example.

Datafill example for FGB AMA End Office (ATT Format)	
Item	**Example data**
Calling number	(613) 621-7665
Called number	950-1777
Datafill table	**Example data**
LINEATTR	0 1FR NONE NT FR01 0 613 P621 L613 N TSPS N 10 NIL NILSFC LATA1 0 NIL NIL 00 Y RESGRP 0 2
STDPRTCT	P621 (1) (0)
STDPRTCT. STDPRT	9501777 9501777 FGB DD 0 CAR1 Y OFRT 897 7 7
HNPACONT	613 128 1 (1) (1) (0) (0)
HNPACONT. HNPACODE	950 950 LRTE 43
HNPACONT. RTEREF	43 (N D ODCMBX2 1 8 N) $
OFRT	897 (N D FGBCAR12W 0 0 N)
TRKGRP	FGBCAR12W OC 0 ELO NCRT LINE MIDL REV Y 2W NPRT NSCR 918 NLCL CV N N Y Y MCC (BCNAME SPEECH) $
TRKSGRP	FGBCAR12W 0 2X81AB STD OG DP WK 7 1 MW MW N N N 1 UNEQ
AMAOPTS	UNANS_TOLL ON
BCCODES	TOLL (034) (068) (069) (008) (110) (114) (119) (134) (135) $ LOCAL (036) (009) (067) (074) (041) (134) (135) $ HIGHREV (006) (068) (008) $
OCCNAME	CAR1
OCCINFO	CAR1 777 EAP Y Y Y N Y Y Y Y Y Y LONG 0 FGRPC N N N Y N N Y N N Y N N
FGBCIC	CAR1 7772

NTX209AB - FGB AMA End Office (ATT Format) (continued)

Package limitations and restrictions

The following limitations and restrictions apply to the NTX209AB feature package:

- This feature package affects Bellcore format AMA, but does not affect NT format AMA.
- TOPS does not currently support four-digit CICs. TOPS FGB carrier and translation datafill is not changed, and calls still use the three-digit CICs.
- Although FGB CICs are expanded to four digits, the size of any carrier table is not changed. The maximum size of tables OCCNAME, OCCINFO, and FGBCIC is still 1000 tuples.

Feature interactions

There are no feature interactions related to this feature package.

Activation/deactivation by the end user

Activation/deactivation by the end user is not applicable for this package.

Billing

The AMA records are generated by the carrier for originating calls and by the local or toll office for terminating calls. The ENFIA_B_C option allows FGB calls to be recorded and billing records generated.

The two types of AMA records generated for FGB calls are FGB originating (call code 134) and FGB terminating (call code 135). Each record provides carrier identification and connect time information. These call codes are modified by this feature package. The IC/INC prefix is changed to allow four-digit CICs for carriers datafilled in table FGBCIC.

The format of the originating record is similar to that of the terminating record; the only difference is the call code. The following is an example of an FGB terminating record.

NTX209AB - FGB AMA End Office (ATT Format) (continued)

Example of an FGB terminating record:

```
HEX ID  :AA STRUCT CODE:00653C CALL TYPE:135C
  SENSOR TYPE:036C
SENSOR ID:0000000C REC OFC TYPE:036C REC OFC ID:
  $col.0000000C DATE:60104C
TIMING IND:00000C STUDY IND:0200000C ANSWER:0C
  SERV OBSERVED:0C
OPER ACTION:0C SERV FEAT:002C OVERSEAS IND:0C
  TERM NPA:00613C
TERM NO:6211234C TIME:1045009C ELAPSED TIME:
   000000028C
IC/INC PREFIX:07772C CC DATE:60104C CC TIME:
  1044546C
ELASPED CC:000000092C IC/INC EVENT:010C TRK GRP:
  00000C ROUTING:0C
```

This feature package modifies the overseas indicator field of the FGB originating and terminating records. This modification allows the operating company to determine whether the NPA code in the dialing string for a non-overseas call was dialed by the subscriber or derived internally and then added by the system software.

Datafilling office parameters

This package does not affect office parameters.

Datafill sequence

The following tables require datafill to implement this feature package. They are listed in the order in which they are to be datafilled. They are provided to show how certain tables can be set up for FGB call processing. The datafill is set up to show only how the 950-WXXX CAC is translated, because the carrier is responsible for translating the authorization code and the called number.

NTX209AB - FGB AMA End Office (ATT Format) (continued)

Datafill tables required for FGB AMA End Office (ATT Format)

Table	Form	NTP	Purpose of table
OCCNAME	2356A-B	297-1001-451	Table OCCNAME (other common carrier name) lists the connected carriers and establishes the spelling standard for other tables requiring the carrier name.
TRKGRP (OC)	2156X	297-1001-451	Table TRKGRP (trunk group) for OC trunks contains some of the customer-defined data associated with the trunk group handling local ANI to toll CAMA.
OFRT	2431A-C	297-1001-451	Table OFRT (office route) contains route lists that are pointed to from tables other than the home NPA code subtable (HNPACONT.HNPACODE) or the foreign NPA code subtable (FNPACONT.FNPACODE).
OCCINFO	2355A-B	297-1001-451	Table OCCINFO (other common carrier information) defines the attributes for the carriers serving a DMS switch and screens calls for carrier compatibility.
LINEATTR	2208A-B	297-2101-451	Table LINEATTR (line attribute) defines the line attribute indexes that are applicable to an office. Line attributes are actually assigned to regular lines in table LENLINES, and to MDC lines and attendant consoles in table IBNXLA.
STDPRTCT	2465	297-1001-451	Table STDPRTCT (standard pretranslator control) lists the name of each standard pretranslator subtable defined by the operating company.
STDPRTCT. STDPRT	2467A-B	297-1001-451	Subtable STDPRTCT.STDPRT (standard pretranslator) sets up the translations for a specific call type. This is the first subtable indexed by the received leading digits if table LINEATTR or TRKGRP specifies a standard pretranslator subtable name.
AMAOPTS	2333A-B	297-1001-451	Table AMAOPTS (AMA options) controls the activation and scheduling of the recording options for local, tool, and high-revenue calls.

- continued -

NTX209AB - FGB AMA End Office (ATT Format) (continued)

Datafill tables required for FGB AMA End Office (ATT Format) (continued)

Table	Form	NTP	Purpose of table
BCCODES	2334	297-1001-451	Table BCCODES (Bellcore codes) allows the operating company to specify which unanswered calls will create billing records. If an option is active in table AMAOPTS, table BCCODES is searched for the corresponding call code. If the code is found in table BCCODES, a billing record for that unanswered call is created.
FGBCIC	not applicable	not determined	Table FGBCIC (FGB CIC) contains carrier names and their four-digit FGB CICs. Datafilling this table with a carrier's name and its corresponding four-digit CIC allows 950-XXXX dialing to that carrier and produces a four-digit identification code in the billing record.

End

Datafilling table OCCNAME

The following procedure shows the datafill for table OCCNAME. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table OCCNAME

Field	Subfield	Explanation and action
OCCNAME		*Other common carrier name* Enter the carrier name or a 1- to 16-character alphanumeric abbreviation of the carrier name.

Datafill example for table OCCNAME

The following example shows sample datafill for table OCCNAME.

Datafill example for table OCCNAME

Example of a MAP display:

```
OCCNAME
_____________________________________________

C111
```

NTX209AB - FGB AMA End Office (ATT Format) (continued)

Datafilling table TRKGRP (OC)

Table TRKGRP (OC) contains some of the customer-defined data associated with the trunk group handling local ANI to toll CAMA. It has two additional subfields: FGBTRAFC and FGBANI. Subfield FGBTRAFC indicates whether a two-way OC trunk group connects to an IEC switch and carries FGB calls. Subfield FGBANI defines the format of the ANI spills for FGB calls sent to the carrier.

Table TRKGRP (OC) also includes subfield CARRNM, which identifies the carrier using a two-way OC trunk group. This field also sets the IC/INC prefix field of the FGB terminating record (call code 135).

The following procedure shows the datafill for table TRKGRP (OC). This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table TRKGRP (OC)

Field	Subfield	Explanation and action
	ANITYPE	*ANI request type* Enter the type of ANI request signal: wink (WK) or reversal (REV). The correct ANI fail and answer supervision on the second leg of a remote call forwarding call is a wink (WK) ANI request. Otherwise, the ANI request type is a reversal (REV).
	BILLSPILL	*Spill billing* In offices with the Bellcore LAMA format feature and the ANI with the AMA feature, enter Y if DD calls terminating to the trunk group are to be recorded in a Bellcore AMA format billing record. Otherwise, enter N.
	EA	*Equal access* Enter Y if double ANI digits are to be sent out. Otherwise, enter N.
	FGBTRAFC	*Feature group B traffic* Enter Y to indicate that a trunk group connects to an IEC switch and that it carries FGB calls; otherwise, enter N. If Y is entered, subfields FGBANI and CARRNM must also be datafilled.

-continued-

Datafilling table TRKGRP (OC) (continued)

Field	Subfield	Explanation and action
	FGBANI	*Feature Group B ANI* If field FGBTRAFC = Y, enter Y to indicate that a normal ANI should be provided. Enter N to indicate that KP+ST is required.
	CARRNM	*Carrier name* If FGBTRAFC = Y, enter the name of carrier, as defined in table OCCINFO, using a two-way OC trunk group. NILC is the default entry.
		End

Datafill example for table TRKGRP (OC)

The following example shows sample datafill for table TRKGRP (OC).

Datafill example for table TRKGRP (OC)

Example of a MAP display:

```
   GRPKEY
                                                          GRPINFO
-------------------------------------------------------------------
 C333FGB2
   OC 0 ELO NCRT CA MIDL WK N N 2W NPRT NSCR 619 NLCL CV N N Y Y
   CAR1 $
```

Datafilling table OFRT

The following procedure shows the datafill for table OFRT. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

NTX209AB - FGB AMA End Office (ATT Format) (continued)

Datafilling table OFRT

Field	Subfield	Explanation and action
RTESEL		*Route selector* Enter CND to specify a condition before routing. If the condition is met then the instructions of this route element are executed. Otherwise, they are skipped and translation will look for instructions in the next route element. Conditions relating to Equal Access follow.
CONDITION		Condition Enter EA to allow the operating company to route 10XXX calls differently from non-10XXX calls.
	CNDSEL	*Condition selector* Enter EA as the type of condition to be tested.
	EA_CND_RTE	*Condition sub-selector* Enter one of the following values: CAC, INTNL, or PIC.

Datafill example for table OFRT

The following example shows sample datafill for table OFRT.

Datafill example for table OFRT

Example of a MAP display:

RTE	RTELIST
1	CND EA CAC SK 3

Datafilling table OCCINFO

Table OCCINFO defines the attributes for carriers serving the end office and screens calls for carrier compatibility. For example, table OCCINFO allows international traffic to be sent only to carriers capable of handling such traffic.

The following procedure shows the datafill for table OCCINFO. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

NTX209AB - FGB AMA End Office (ATT Format) (continued)

Datafilling table OCCINFO Field	Subfield	Explanation and action
CARRNAME		*Carrier name* Enter the carrier name or a 1- to 16-character alphanumeric abbreviation of the carrier name as defined in table OCCNAME.
CARRNUM		*Carrier number* Enter the CIC (0000 to 9999). ***Note 1:*** Only 256 entries by office are accepted. ***Note 2:*** Although N is included in the range of values, it is not a valid entry for this field.
ACCESS		*Access arrangement* Enter one of the following access types accepted by the carrier to handle a call: NONE no access INTERIM interim dialing over FGD signaling EAP EAP dialing over FGD signaling OTC FGC dialing over FGC signaling (local billing) TRANS both interim and EAP dialing over FGD signaling FGC FGC dialing over FGC signaling (FGD billing) ***Note 1:*** In order for the EACARR operational measurement (OM) group to record OM data, this field must be set to EAP, INTERIM, TRANS, or FGC. If the ACCESS field is set to NONE, none of the EACARR registers will be pegged. ***Note 2:*** This field must be set to NONE for the NILC tuple.
INTER		*Inter-LATA* Enter Y if the carrier can handle inter-LATA traffic. Otherwise, enter N.
INTNTL		*International* Enter Y if the carrier can handle international traffic. Otherwise, enter N.
INTRA		*Intra-LATA* Enter Y if the carrier can handle intra-LATA traffic. Otherwise, enter N.

-continued-

NTX209AB - FGB AMA End Office (ATT Format) (continued)

Datafilling table OCCINFO (continued)

Field	Subfield	Explanation and action
ANI		*Automatic number identification* Enter Y if the carrier wants ANI digits sent with the called number. Otherwise, enter N.
FANI		*Flexible ANI* Enter Y if the carrier can receive flexible ANI information digits instead of standard ANI information digits. Otherwise, enter N.
ONISCRN		*Operator number identification screening* Enter Y if ONI traffic requires screening by an operator or CAMA position before outpulsing to the carrier. Otherwise, enter N.
AD1		*Abbreviated dialing number one* Enter Y if the carrier can be accessed using abbreviated dialing. Otherwise, enter N.
OVERLAP		*Overlap* Enter Y if the carrier wants to receive digits from the AT or the EAEO using overlap outpulsing. Otherwise, enter N.
INTERS		*Inter-state* Enter Y if the carrier can handle traffic between states. Otherwise, enter N.
INTRAS		*Intra-state* Enter Y if the carrier can handle traffic within the same state. Otherwise, enter N.
TERMREC		*Terminating access record* Enter the length (LONG or SHORT) of the terminating access record produced for the carrier. Default value is SHORT. ***Note:*** Access records are produced only when the OCCTERM option in table AMAOPTS is set to ON.
OCCSEPNO		*Other common carrier separation number* Enter the separation number (0 to 127) for the carrier in the Traffic Separations Measurement System.

-continued-

NTX209AB - FGB AMA End Office (ATT Format) (continued)

Datafilling table OCCINFO (continued)

Field	Subfield	Explanation and action
OPSIG		*Operator signaling* Enter the type of operator signaling provided by the carrier. Enter FGRPC for FGD carriers that require FGC operator signaling. Enter NONE for all other FGD carriers. This entry is ignored for FGC carriers.
PICIND		*Presubscription indication* Enter Y if the carrier has chosen to receive the presubscription indicator; otherwise, enter N. This field must be datafilled for every entry in table OCCINFO.
DTMFIND		*Rotary dial/DTMF indicator* Enter Y if the carrier has chosen to receive the rotary dial/DTMF indicator on operator service calls that are routed directly to the carrier. Otherwise, enter N. ***Note:*** Field DTMFIND must be datafilled for every entry in table OCCINFO. Field DTMFIND is active only if feature package NTX888 is present.
OPSERV		*Operator services* Enter Y if the carrier accepts EAOSS and does not want the operating company to process 10XXX+0 and 00 calls to the carrier. Otherwise, enter N. ***Note:*** Field OPSERV must be datafilled for every entry in table OCCINFO. Field OPSERV is active only if feature package NTX888 is present.
CACBLOCK		*Carrier access code blocking* Enter Y if the carrier wants to block all calls dialed with a CAC. Enter N for all other carriers. ***Note:*** Field CACBLOCK must be datafilled for every entry in table OCCINFO. Field CACBLOCK is active only if feature package NTX989 is present.
CTDOA		*Carrier toll denied operator assisted* Enter Y to block OA calls to this carrier when the subscriber has the CTD line option applied for this carrier. Otherwise, enter N, the default value.

-continued-

NTX209AB - FGB AMA End Office (ATT Format) (continued)

Datafilling table OCCINFO (continued)

Field	Subfield	Explanation and action
SCRNWATS		*Enhanced WATS screening* Enter Y if the carrier wants band screening performed on digits dialed from an enhanced WATS line. Otherwise, enter N. ***Note:*** Field SCRNWATS is only applicable when software package NTXA16 is present.
ATPINCL		*Access transport parameter included* Enter Y to indicate whether an access transport parameter should be included in IAM going to the IEC. Otherwise, enter N.
INTRAOPR		*Intra-LATA operator* Enter Y to indicate if a carrier is capable of handling intra-LATA operator calls. Otherwise, enter N.
		End

Datafill example for table OCCINFO

The following example shows sample datafill for table OCCINFO.

Datafill example for table OCCINFO

Example of a MAP display:

```
CARRNAME CARRNUM ACCESS ORIGCARR INTER INTNTL INTRA ANI FANI
ONISCRN AD1 OVERLAP INTERS INTRAS TERMREC OCCSEPNO OPSIG PICIND
NOA950 INCCPN DTMFIND OPSERV CACBLOCK CTDOA CMCMON SCRNWATS
CRMCRA ATPINCL INTRAOPR
```

```
 C111    0111   EAP     Y      Y      Y     N   Y    N
N     Y      Y     Y      Y    LONG       0    FGRPC    Y
 N      N     N       N       N      N      N      N
  Y    N        N
 C222    0222   EAP     Y      Y      N     Y   N    N
N    N       Y     Y      N    SHORT      0    FGRPC    N
 N    N       N       N       N      N      N      N
  Y    N        N
```

Datafilling table LINEATTR

The following procedure shows the datafill for table LINEATTR. This procedure contains only those fields that apply to this package. See *Local Customer Data Schema*, 297-2101-451, for a description of the other fields.

Datafilling table LINEATTR

Field	Subfield	Explanation and action
LATANM		*LATA name* Enter the name of the LATA associated with this line attribute.

Datafill example for table LINEATTR

The following example shows sample datafill for table LINEATTR.

Datafill example for table LINEATTR

Example of a MAP display:

```
LAIDX LCC
      CHGCLSS COST SCRNCL LTG STS PRTNM LCANAME LCABILL
                                        ZEROMPOS HOT TRAFSNO
MRSA SFC  LATANM          MDI           IXNAME DGCLNAME FANIDIGS
           RESINF
-------------------------------------------------------------------
0  1FR
     NONE  NT   NSCR    0 619    POT1     LPOT      N
                                                   RTE1  N   0
NIL NILSFC NILLATA            0          NIL       NIL     00
                N
```

Datafilling table STDPRTCT

Table STDPRTCT lists the name of each standard pretranslator subtable defined by the operating company. The following procedure shows the datafill for table STDPRTCT. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table STDPRTCT

Field	Subfield	Explanation and action
EXTPRTNM		*External standard pretranslator subtable name* Enter the name defined by the operating company to represent the standard pretranslator subtable. Note that standard pretranslator name C7PT is automatically used by ISUP trunks on test calls in offices with ISUP capability.

Datafill example for table STDPRTCT

The following example shows sample datafill for table STDPRTCT.

NTX209AB - FGB AMA End Office (ATT Format) (continued)

Datafill example for table STDPRTCT

Example of a MAP display:

```
EXTPRTNM   STDPRT   AMAPRT

     POT1 (    1) (    1)
```

Datafilling subtable STDPRTCT.STDPRT

Subtable STDPRTCT.STDPRT is the first subtable to be indexed by the received leading digits when the originating line attribute (from table LINEATTR) or trunk (from table TRKGRP) specifies a pretranslator name.

The following procedure shows the datafill for subtable STDPRTCT.STDPRT. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling subtable STDPRTCT.STDPRT

Field	Subfield	Explanation and action
FROMDIGS		*From digits* Enter the digit(s) to be translated. If the entry is a block of consecutive numbers, enter the first number in the block.
TODIGS		*To digits* If FROMDIGS is a block of consecutive numbers, enter the last number in the block. Otherwise this field equals FROMDIGS.
PRETRTE		*Pretranslation route* This field consists of the following subfields, which must be filled for the FGB selector.
	PRERTSEL	*Pretranslation route selector* Enter FGB to originate FGB calls (950-WXXX dialing).
	TYPCALL	*Type of call* Enter the type of call: DD, NO (no prefix), or OA. ***Note:*** TYPCALL must be set to DD to enable call billing.
	NOPREDIG	*Number of prefix digits* Enter the number of digits (0 to 7) to be interpreted as prefix digits. Where switching unit is arranged for CD operation, the CD must be included in the number of prefix digits to be removed from the digit translation.

-continued-

NTX209AB - FGB AMA End Office (ATT Format) (continued)

Datafilling subtable STDPRTCT.STDPRT (continued)		
Field	**Subfield**	**Explanation and action**
	CARRNAME	*Carrier name* Enter the carrier name as defined in table OCCNAME.
	RTEAREA	*Route area* This subfield consists of subfields RTEPRSNT, EXTRTEID, TABID, KEY, MINIDIGSR, and MAXDIGSR.
	RTEPRSNT	*Route present* Enter Y if a call is to be sent to a route from pretranslation. If so, all remaining fields are datafilled. Enter N if a national translation (table HPNACONT) route is to follow. If so, the remaining fields are not datafilled.
	EXTRTEID	*External route identifier* This subfield consists of subfields TABID and KEY.
	TABID	*Table name* Enter OFRT. Table OFRT contains the route for the FGB call.
	KEY	*Index* Enter the index (0 to 1,023) within table OFRT that the call is to use for routing.
	MINIDIGSR	*Minimum digits received* If field RTEPRSNT = N, leave this field blank. Otherwise, enter the minimum number of digits (1 to 15) to be collected before routing the call.
	MAXDIGSR	*Maximum digits received* If field RTEPRSNT = N, leave this field blank. Otherwise, enter the maximum number of digits (1 to 24) to be collected before routing the call.
End		

Datafill example for subtable STDPRTCT.STDPRT

The following example shows sample datafill for subtable STDPRTCT.STDPRT.

NTX209AB - FGB AMA End Office (ATT Format) (continued)

Datafill example for subtable STDPRTCT.STDPRT

Example of a MAP display:

```
       FROMDIGS        TODIGS
                                                   PRETRTE
----------------------------------------------------------
            00              00
                  T OA 1      OFRT  828  2  2     NONE
```

Datafilling table AMAOPTS

Table AMAOPTS controls the activation and scheduling of the recording options for local, toll, and high-revenue calls. It contains one tuple for every option. A schedule, associated with every option, defines whether an option is active, active only at certain times, or not active.

Option ENFIA_B_C is related to Equal Access billing records. The following procedure shows the datafill for this option in table AMAOPTS. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table AMAOPTS

Field	Subfield	Explanation and action
OPTION		*Option* Enter an alphanumeric option code. The options relevant to Equal Access are described in the following subfields.
	ENFIA_B_C	This option controls the recording of ENFIA_B and ENFIA_C calls (for example, 950-10XX), thereby allowing calls on all FGB trunk groups to be recorded. ***Note:*** If an office uses the NT AMA format and the DMS software does not include table AMAOPTS, the ENFIA_B_C option is automatically turned on.
SCHEDULE		*Schedule* This field consists of the following subfields: AMASEL, ONDATE, OFFDATE, SCHED, ONTIME, and OFFTIME.

-continued-

NTX209AB - FGB AMA End Office (ATT Format) (continued)

Datafilling table AMAOPTS (continued)

Field	Subfield	Explanation and action
	AMASEL	*AMA selector* Enter one of the following values: ON Activate the option immediately. OFF Deactivate the option immediately. DEFAULT Use the default schedule for the option. PERIODIC Activate the option at the specified date and time, and perform the periodic activity every so many hours or minutes. Complete subfields ONDATE and ONTIME to specify the date and time for activation, and complete field SCHED for the time intervals to perform the activity. TIMED Activate the option between the specified dates and times. For the ENFIA_B_C option, the valid AMA selectors are ON, OFF, TIMED, and DEFAULT. Default is ON.
	ONDATE	*Activation on date* If AMASEL = PERIODIC or TIMED, enter the year, the month, and the day on which the activation of the option is set to ON. The format is YYMMDD. Otherwise, there is no prompt for this field.
	SCHED	*Periodic schedule* If AMASEL = PERIODIC, complete the two subfields TU and TV. Otherwise, there is no prompt for this subfield.
	TV	*Time value* Enter a value from 0 to 255.
	TU	*Time unit* Enter AEONS, HRS, HUNDREDMS, MINS, SECS, or TENMS.
	ONTIME	*Activation on time* If AMASEL = PERIODIC or TIMED, enter the hour and minute the option will be activated. The format is HHMM. Otherwise, there is no prompt for this field.

-continued-

NTX209AB - FGB AMA End Office (ATT Format) (continued)

Datafilling table AMAOPTS (continued)

Field	Subfield	Explanation and action
	OFFDATE	*Activation off date* If AMASEL = TIMED, enter the year, the month, and the day on which the activation of the option is set to OFF. The format is YYMMDD. Otherwise, there is no prompt for this field.
	OFFTIME	*Activation off time* If AMASEL = TIMED, enter the hour and minute the option will be deactivated. The format is HHMM. Otherwise, there is no prompt for this field.
		End

Datafill example for table AMAOPTS

The following example shows sample datafill for table AMAOPTS.

Datafill example for table AMAOPTS

Example of a MAP display:

```
     OPTION                SCHEDULE
-----------------------------------------------------
      ENFIA_B_C                 ON
```

Datafilling table BCCODES

The following procedure shows the datafill for table BCCODES. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table BCCODES Field	Subfield	Explanation and action
CALLTYPE		*Bellcore call type* Enter one of the following Bellcore call types: LOCAL local calls TOLL toll calls HIGHREV high-revenue calls TOPS TOPS calls ***Note:*** if the HIGHREV option in table AMAOPTS is set to ON, then all HIGHREV calls with a call code defined in table BCCODES are recorded. unanswered calls are not recorded when the HIGHREV option in table AMAOPTS is set to ON.
CODES		*Bellcore call codes* Enter any combination of the Bellcore call codes. Each call code must be separated by a blank column. For a complete listing of Bellcore call codes, refer to table BCCODES in *Common Customer Data Schema,* 297-1001-451.

Datafill example for table BCCODES

The following example shows sample datafill for table BCCODES.

Datafill example for table BCCODES

Example of a MAP display:

```
 CALLTYPE
                                                     CODES
 ----------------------------------------------------------
     LOCAL              (009) (036) (041) (067) (074)$
```

Datafilling table FGBCIC

Table FGBCIC is created by this feature package to store four-digit FGB CICs. The key field is the carrier name and the data is the carrier four-digit FGB CIC. Carriers without four-digit FGB codes should not be datafilled in table FGBCIC.

This table cannot be enabled or disabled. However, if table FGBCIC is not datafilled, billing or translations are not affected. Store for table FGBCIC is only allocated when the first tuple is added to the table. Therefore, no store is wasted if the table is not datafilled. When the first tuple is added to the table, room for 1000 tuples is allocated.

NTX209AB - FGB AMA End Office (ATT Format) (continued)

Datafilling table FGBCIC Field	Subfield	Explanation and action
CARRNAME		*Carrier name* Enter the 1- to 16-character alphanumeric name of the carrier. The carrier name must correspond to a carrier name in table OCCINFO or TRKGRP, and must appear in table OCCNAME to be valid.
FGBNUM		*FGB CIC* Enter the four-digit code associated with the carrier name. The code must consist of 4 digits in the range of 0 to 9. A NIL value is not valid. Duplication of CICs is not allowed to avoid problems with reverse mapping of FGB CICs to carrier names.

Datafill example for table FGBCIC

The following example shows sample datafill for table FGBCIC.

Datafill example for table FGBCIC

Example of a MAP display:

```
CARRNAME          FGBNUM
-------------------------
   CAR1            7772
```

Translation verification tools

TRAVER

The following example shows the output from TRAVER when it is used to verify. For more information about TRAVER, see *Command Reference Manual*, 297-1001-509.

In the TRAVER command shown in this example

- L indicates the originator is a line
- 6211235 is the DN originating the call
- 9502345 is the DN receiving the call
- B indicates that a report on both table entries and results is desired

NTX209AB - FGB AMA End Office (ATT Format) (end)

TRAVER output example when TRAVER is used to verify this package

Line	Output
	>TRAVER L 6211235 9502345 B
1	TABLE LINEATTR
2	0 1FR NONE NT FR01 0 613 P621 L613 N TSPS N 10 NIL NILSFC LATA1 0 NIL NIL 00 Y RESGRP 0 2
3	LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
4	TABLE DNATTRS
5	TUPLE NOT FOUND
6	TABLE DNGRPS
7	TUPLE NOT FOUND
8	TABLE STDPRTCT
9	P621 (1) (1)
10	. SUBTABLE STDPRT
11	. 9502345 9502345 FGB DD 0 CARB Y OFRT 905 7 7
12	. . TABLE OFRT
13	. . 905 N D FGBCAR2W 0 N N
14	. . EXIT TABLE OFRT
15	. SUBTABLE AMAPRT
16	. KEY NOT FOUND
17	. DEFAULT VALUE IS: NON OVRNONE N
18	
19	
20	+++TRAVER: SUCCESSFUL CALL TRACE +++
21	
22	DIGIT TRANSLATION ROUTES
23	
24	1 FGBCAR2W 9502345 ST
25	
26	TREATMENT ROUTES. TREATMENT IS: GNCT
27	1 T120
28	
29	
30	+++TRAVER: SUCCESSFUL CALL TRACE +++

Service orders

Service orders are not applicable for this package.

NTX268AA - FGB AMA End Office (NT Format)

Package name

FGB AMA End Office (NT Format)

Package number

NTX268AA

Feature numbers

The NTX268AA feature package consists of the following features:

NTX268AA feature numbers and names

Feature number	Feature name
BR0564	Access Charge Recording - End Office (NT Format)
BC2136	FGB Calls from LAMA End Office to IEC via AT

BCS applicability

BCS30 and up

Feature package prerequisites

This package requires the following feature packages:

Feature package prerequisites

Feature package	Feature package name
NTX000AA	Bilge
NTX001AA	Common Basic
NTX042AA	Local Automatic Message Accounting
NTX901AA	Local Features I

Description

The NTX268AA - FGB AMA End Office (NT format) feature package allows the operating company to create billing records when a carrier uses the operating company network in an FGB access arrangement to provide subscribers with long distance service. In particular, it creates two billing records in NT format: one for originating FGB calls and one for terminating FGB calls.

It also allows FGB calls routed through an FGB AT to be billed in the end office using LAMA billing. The proper call code 134 billing record is made and ANI digits are not spilled to the FGB AT.

NTX268AA - FGB AMA End Office (NT Format) (continued)

Theory of operation

The FGB arrangement allows an EAEO or a non-EAEO to provide its subscribers with trunk-side access to an IEC toll network. An FGB carrier uses conventional signaling and is billed by the LEC according to the actual usage of its facilities. To access an FGB carrier a subscriber must dial

950-WXXX
where
950 is a reserved central office code
W is a predetermined filler digit (0-9) defined by the operating company
XXX is the CIC

This section describes the features specific to the NTX268AA - FGB AMA End Office (NT Format) feature package. For more information about FGB, see *Equal Access Product Guide*, 297-2101-011.

Billing records for FGB AMA - NT format

This feature package creates the B0 and the B1 billing records in NT format: B0 records for originating FGB calls and B1 records for terminating FGB calls. Both of these billing records are accompanied by an EE extension entry record, which identifies the trunks used in an FGB call.

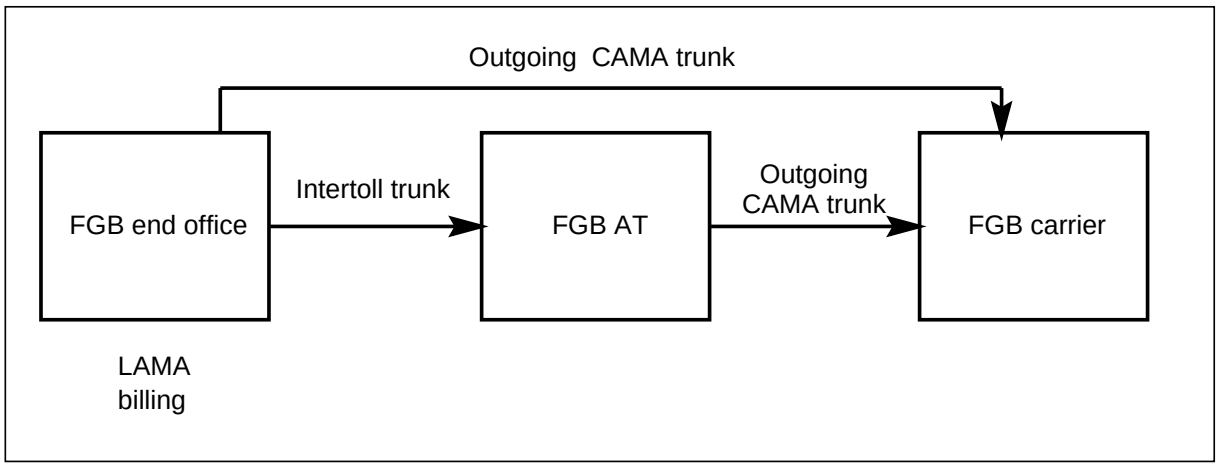
See the billing section on page 3-146 for a description of the B0 and the B1 billing records and the EE extension entry record.

Billing FGB calls from LAMA end office to IEC via AT

Prior to this feature package, originating FGB calls routed through an AT were billed at the AT using CAMA. The only originating FGB calls billed at the LAMA end office were those that had direct connections to the FGB carrier. This feature package allows LAMA billing for all originating FGB calls. Figure 3-7 shows an example of an FGB LAMA configuration.

Note: Terminating FGB calls using an AT must still bill the AT.

Figure 3-7
FGB LAMA configuration



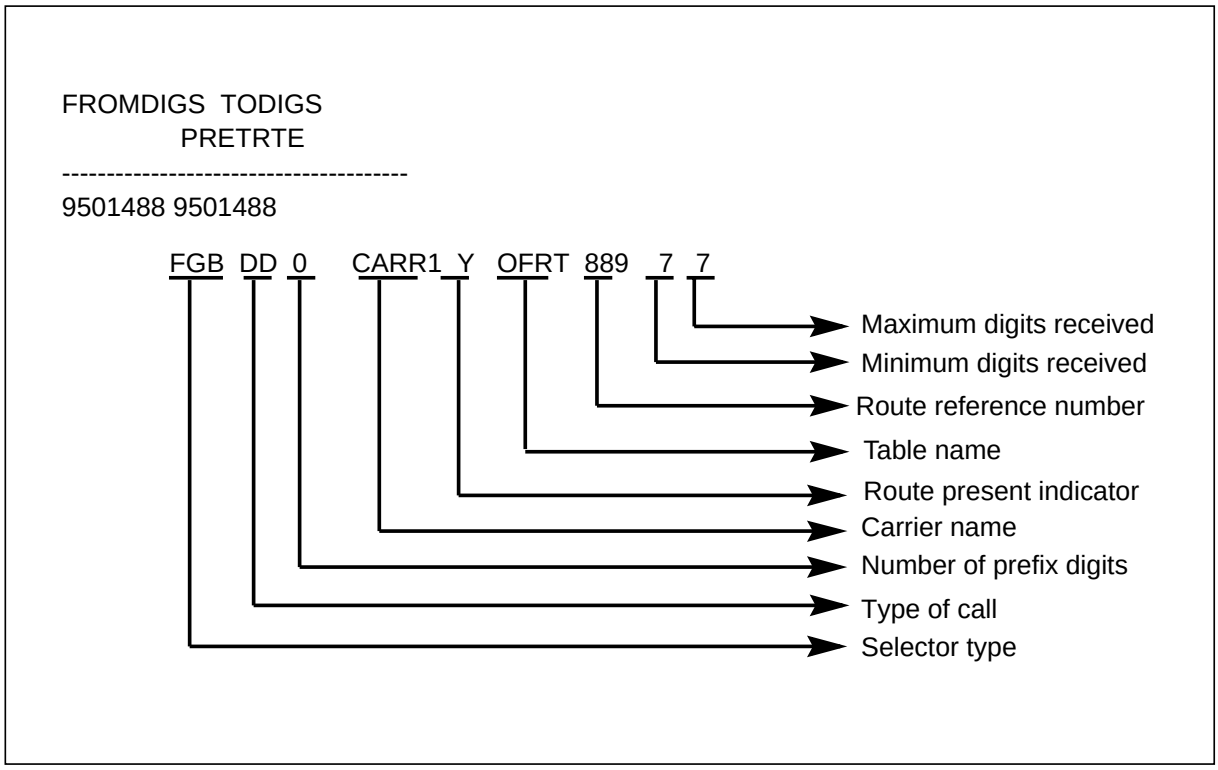
The FGB selector must be used in the end office for LAMA billing to work properly. The FGB selector is also recommended in the following cases:

- in the FGB AT for CAMA billing
- in the FGB end office using CAMA billing

See figure 3-8 for a sample datafill for an FGB end office using LAMA billing.

NTX268AA - FGB AMA End Office (NT Format) (continued)

Figure 3-8
FGB end office LAMA datafill - subtable STDPRTCT.STDPRT



Package limitations and restrictions

The LAMA billing option applies to originating FGB calls only. Terminating FGB calls using a tandem must be billed at the tandem.

Feature interactions

Feature interactions are not applicable for this feature package.

Activation/deactivation by the end user

Activation/deactivation is not applicable for this feature package.

Billing

The B0 and the B1 AMA billing records are generated for each FGB call. B0 billing records are generated for originating FGB calls while B1 billing records are generated for terminating FGB calls. Both of these billing records are accompanied by an EE extension entry record, which identifies the trunks used in an FGB call.

A description of the fields in these records follows. The fields common to both the B0 and the B1 billing records are discussed first, followed by a

discussion of the fields specific to each record. The EE extension record is discussed last. Figure 3-9 gives examples of the B0 and the B1 billing records.

Figure 3-9
B0 and B1 billing records

```
REC CODE!B0 ENTRY CODE!00 INFO DIGS!00 S FEAT CODE!00
CLG NO!6136211234 CLD NO!AAAAAAAA9501488 CC EVENT INFO!4
DAY = 001 TIME! HR = 14 MIN = 22 SEC = 07 ELAPSED TIME =
000008
FG INDICATOR!1 IN/INC PREFIX!4881 CARRIER CONNECT DAY = 001
CC TIME! HR = 14 CC MIN = 22 CC SEC = 07 ELAPSED CC TIME =
000008
DIALING INDICATOR!3  ANS = Y TANDEM = Y ANI = N

REC CODE!EE SPARE!00 IGRPID!61 OGRPID!566 IMEMID!1
OMEMID!1

REC CODE!B1 ENTRY CODE!00 INFO DIGS!00 S FEAT CODE!00
CLG NO!AAA6211234 CC EVENT INFO!4 DAY = 001 TIME! HR = 14
MIN = 26 SEC = 02 ELAPSED TIME = 000102 FG INDICATOR!1
IN/INC PREFIX!0000 CARRIER CONNECT DAY = 001 CC TIME!
HR = 14 CC MIN = 26 CC SEC = 02 ELAPSED CC TIME = 000102
ANS = Y TANDEM = Y

REC CODE!EE SPARE!00 IGRPID!566 OGRPID!118 IMEMID!1
OMEMID!1
```

Fields common to B0 and B1 billing records

The following fields are common to both the B0 and the B1 billing records. Each field name is preceded by its abbreviated form as it appears on the billing record.

- REC CODE (record code). The two-character entry in this field identifies the billing record type. The entry is either B0 or B1.
- ENTRY CODE (entry code). The two-digit entry in this field identifies the call type. The entries in this field range from 00 to 99. See *Automatic Message Accounting - Northern Telecom Format*, 297-1001-119, for the list of entry codes and the call type they represent.

NTX268AA - FGB AMA End Office (NT Format) (continued)

- INFO DIGS (information digit). The two-digit entry in this field provides information related to the call. See *Automatic Message Accounting - Northern Telecom Format*, 297-1001-119, for further details.
- S FEAT CODE (service feature code). The two-digit entry in this field identifies the calling and called parties' class of service.
- CLD NO (called number). The 15-digit entry in this field identifies the called party. If all 15 digits are not required to identify the called party, the filler A is entered.
- CC EVENT INFO (carrier event information). The one-character entry in this field provides the following information:
  - if the call was answered
  - if the called or calling party was disconnected
  - if the call was tandem routed
  - if ANI spill was provided

  Figure 3-10 gives further details about this field.

Figure 3-10
Carrier event information

MEANING	CHARACTER ENTRY 0 1 2 3 4 5 6 7 8 9 A B C D E F
Answered	Y Y N N Y Y N N Y Y N N Y Y N N
Calling Party Disconnect	Y N Y N Y N Y N Y N Y N Y N Y N
Called Party Disconnect	N Y N Y N Y N Y N Y N Y N Y N Y
Routing (Tandem)	N N N N Y Y Y Y N N N N Y Y Y Y
ANI	N N N N N N N N Y Y Y Y Y Y Y Y

- DAY (day). The three-digit entry in this field identifies the day the call was made. The valid entries in this field range from 001 to 366. For example, 150 indicates that the call was made on the 150th day of the year.
- TIME (time). The six-digit entry in this field identifies the hour, minute, and second the call was made.
- ELAPSED TIME (elapsed time). The six-digit entry in this field identifies the length of time the carrier was connected. The time is measured from carrier connect to carrier disconnect.

- FG INDICATOR (feature group indicator). The one-digit entry in this field indicates the type of call made. An entry of 1 indicates an FGB call. An entry of 2 indicates am FGD call. In B0 billing records, the entry in this field is 1.
- IC/INC PREFIX (IC/INC prefix). The four-digit entry in this field identifies the carrier access digits and how they were obtained. The first three digits represent the carrier access digit and the last digit indicates how the carrier access code was obtained. The valid entries for the fourth digit are as follows:
  - 0 the prefix is not available
  - 1 the prefix was taken from the dialed digits
  - 2 the prefix was taken from the trunk group data

  For B0 billing records, the last digit is always 1 to indicate that the carrier access digits were obtained from the XXX of the 950-WXXX dialed.
- CARRIER CONNECT DAY (carrier connect day). The three-digit entry in this field indicates the day the carrier was connected. This entry is the same as the entry in the day field.
- CC TIME (carrier connect time). The six-digit entry in this field identifies the hour, minute, and second the carrier was connected. Carrier connect time is defined as the time when an off-hook is received from the FGB carrier.
- ELAPSED CC TIME (elapsed time from carrier connect). The six-digit entry in this field indicates the amount of time from carrier connect to carrier disconnect.

  Note: On originating FGB calls, carrier connect day, carrier connect time, and elapsed time from carrier connect is the time from carrier off-hook to call disconnect. On terminating FGB calls, carrier connect day, carrier connect time, and elapsed time from carrier connect is the time from the called party answer (line off-hook) to call disconnect. Thus, carrier connect day, carrier connect time, and elapsed time from carrier connect are identical to the answer day, time, and elapsed time entries.

Fields specific to B0 billing records

The following fields are specific to the B0 billing record. Each field name is preceded by its abbreviated form as it appears on the billing record.

- CLG NO (calling number). The 10-digit entry in this field identifies the calling number. This field appears after the service feature code field.

NTX268AA - FGB AMA End Office (NT Format) (continued)

- DIALING INDICATOR (dialing indicator). The one-digit entry in this field indicates what was dialed to access the operating company. The entry is always 3 for this feature to indicate that 950-WXXX was dialed. This field appears after the elapsed time from carrier connect field.

The carrier event information field, although not specific to the B0 billing record, provides information only on the answer, the routing, and the ANI of an FGB call.

Fields specific to B1 billing records

There are no fields specific to the B1 billing record; however, the carrier event information field in the B1 billing record provides information only on the answer and routing of an FGB call.

EE extension entry record

An EE extension entry record accompanies each B0 and B1 billing record generated. It also provides information on the trunks used in the routing of an FGB call. A description of the fields in an EE extension entry record follows. Each field name is preceded by its abbreviated form as it appears on the billing record output by the DMS switch.

- REC CODE (record code). This field identifies the record. The entry in this field is EE for this feature package.
- SPARE (spare). Reserved for future use.
- IGRPID (incoming CLLI ID). This field identifies the incoming CLLI or the incoming trunk.
- OGRPID (outgoing CLLI ID). This field identifies the outgoing CLLI or outgoing trunk.
- IMEMID (incoming member ID). This field identifies the trunk group to which the incoming trunk belongs.
- OMEMID (outgoing member ID). This field identifies the trunk group to which the outgoing trunk belongs.

Datafilling office parameters

This package does not affect office parameters.

NTX268AA - FGB AMA End Office (NT Format) (continued)

Datafill sequence

The following tables require datafill to implement this feature package. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for FGB AMA (NT Format)

Table	Form	NTP	Purpose of table
CRSFMT	2331	297-1001-451	Table CRSFMT (call record stream format) generates billing records in NT format.
LINEATTR	2208A-B	297-2101-451	Table LINEATTR (line attribute) defines the line attribute indexes applicable to an office. Line attributes are actually assigned to regular lines in table LENLINES, and to MDC lines and attendant consoles in table IBNXLA.
STDPRTCT	2465	297-1001-451	Table STDPRTCT (standard pretranslator control) lists the name of each standard pretranslator subtable defined by the operating company.
STDPRTCT. STDPRT	2467A-B	297-1001-451	Subtable STDPRTCT.STDPRT (standard pretranslator) sets up the translations for a specific call type. This is the first subtable indexed by the received leading digits if table LINEATTR or TRKGRP specifies a standard pretranslator subtable name.
OFRT	2431A-C	297-1001-451	Table OFRT (office route) contains route lists that are pointed to from tables other than the home NPA code subtable (HNPACONT.HNPACODE) or the foreign NPA code subtable (FNPACONT.FNPACODE).
LENFEAT	2210A-B	297-2101-451	Table LENFEAT (line feature) lists the features assigned to a specific line in table LENLINES.

-continued-

NTX268AA - FGB AMA End Office (NT Format) (continued)

Datafill tables required for FGB AMA (NT Format) (continued)

Table	Form	NTP	Purpose of table
OCCINFO	2355A-B	297-1001-451	Table OCCINFO (other common carrier information) defines the attributes for the carriers serving a DMS switch and screens calls for carrier compatibility.
TRKGRP (SC)	2156J	297-1001-451	Table TRKGRP (trunk group) defines the characteristics for incoming and two-way CAMA trunk groups required in a toll or combined local/toll offices.
POSITION	2523A-B	297-1001-451	Table POSITION (position) stores the types of positions that the switch is equipped with and their associated routes.

End

NTX268AA - FGB AMA End Office (NT Format) (continued)

Datafilling table CRSFMT

The following procedure shows the datafill for table CRSFMT. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table CRSFMT

Field	Subfield	Explanation and action
KEY		*Key* Enter AMA, the default value.
FORMAT		*Format* Enter NTFMT, the default value, to generate billing records in NT format. ***Note:*** For NT format to be active in an office, a RESTART/RELOAD is required after modifying the FORMAT field.
DATADUMP		*Data dump* Enter Y if a data dump of C2C2 records is required. Otherwise, enter N. Entering Y activates package NTX076AA. The package expands the AMA/SMDR record to include the identification of the trunk groups involved in the call. Extra disk space will be needed to store the additional information.
CDRSRCH		*Call detail recording search* This field is only required for a DMS-250 switching unit. Enter NIL_FM.
ALARMS		*Alarms* Enter Y if this stream requires audible alarms in the case of billing failures. Otherwise, enter N.
TIMERDMP		*Timer dump* Enter Y to activate the timer dump mechanism. Enter N (the default value) to deactivate the timer dump.
TIMERVAL		*Timer interval* Enter the time in even seconds (0 to 32767) between timer dumps. The default value is 0.

Datafill example for table CRSFMT

The following example shows sample datafill for table CRSFMT.

NTX268AA - FGB AMA End Office (NT Format) (continued)

Datafill example for table CRSFMT

Example of a MAP display:

```
 KEY    FORMAT      DATADUMP    CRDSRCH     ALARMS
 TIMERDMP    TIMERV
                                            AL
-------------------------------------------------------
   NIL      NTFMT N     NIL_FM      N     N     0
   AMA      BCFMT N     NIL_FM      Y     N     0
SMDR  SMDRFMT     N     NIL_FM      N     N     0
```

Datafilling table LINEATTR

The following procedure shows the datafill for table LINEATTR. This procedure contains only those fields that apply to this package. See *Local Customer Data Schema*, 297-2101-451, for a description of the other fields.

Datafilling table LINEATTR

Field	Subfield	Explanation and action
LATANM		*LATA name* Enter the name of the LATA associated with this line attribute.

Datafill example for table LINEATTR

The following example shows sample datafill for table LINEATTR.

Datafill example for table LINEATTR

Example of a MAP display:

```
 LAIDX LCC
       CHGCLSS COST SCRNCL LTG STS PRTNM LCANAME LCABILL
                                          ZEROMPOS HOT TRAFSNO
   MRSA SFC  LATANM          MDI          IXNAME DGCLNAME
 FANIDIGS             RESINF
-------------------------------------------------------------
 0  1FR
      NONE  NT   NSCR    0 619    POT1     LPOT      N
                                                    RTE1  N
0
 NIL NILSFC NILLATA            0          NIL        NIL
00
                N
```

Datafilling table STDPRTCT

Table STDPRTCT lists the name of each standard pretranslator subtable defined by the operating company. The following procedure shows the datafill for table STDPRTCT. This procedure contains only those fields that

apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table STDPRTCT

Field	Subfield	Explanation and action
EXTPRTNM		*External standard pretranslator subtable name* Enter the name defined by the operating company to represent the standard pretranslator subtable. Note that standard pretranslator name C7PT is automatically used by ISUP trunks on test calls in offices with ISUP capability.

Datafill example for table STDPRTCT

The following example shows sample datafill for table STDPRTCT.

Datafill example for table STDPRTCT

Example of a MAP display:

```
EXTPRTNM   STDPRT   AMAPRT
-------------------------------
     POT1 (    1) (    1)
```

Datafilling subtable STDPRTCT.STDPRT

Subtable STDPRTCT.STDPRT is the first subtable to be indexed by the received leading digits when the originating line attribute (from table LINEATTR) or trunk (from table TRKGRP) specifies a pretranslator name.

The following procedure shows the datafill for subtable STDPRTCT.STDPRT. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling subtable STDPRTCT.STDPRT

Field	Subfield	Explanation and action
FROMDIGS		*From digits* Enter the digit(s) to be translated. If the entry is a block of consecutive numbers, enter the first number in the block.
TODIGS		*To digits* If FROMDIGS is a block of consecutive numbers, enter the last number in the block. Otherwise this field equals FROMDIGS.

-continued-

NTX268AA - FGB AMA End Office (NT Format) (continued)

Datafilling subtable STDPRTCT.STDPRT (continued)

Field	Subfield	Explanation and action
PRETRTE		*Pretranslation route* This field consists of the following subfields, which must be filled for the FGB selector.
	PRERTSEL	*Pretranslation route selector* Enter FGB to originate FGB calls (950-WXXX dialing).
	TYPCALL	*Type of call* Enter the type of call: DD, NP (no prefix), or OA. ***Note:*** TYPCALL must be set to DD to enable call billing.
	NOPREDIG	*Number of prefix digits* Enter the number of digits (0 to 7) to be interpreted as prefix digits. Where switching unit is arranged for CD operation, the CD must be included in the number of prefix digits to be removed from the digit translation.
	CARRNAME	*Carrier name* Enter the carrier name as defined in table OCCNAME.
	RTEAREA	*Route area* This subfield consists of subfields RTEPRSNT, EXTRTEID, TABID, KEY, MINIDIGSR, and MAXDIGSR.
	RTEPRSNT	*Route present* Enter Y if a call is to be sent to a route from pretranslation. If so, all remaining fields are datafilled. Enter N if a national translation (table HPNACONT) route is to follow. If so, the remaining fields are not datafilled.
	EXTRTEID	*External route identifier* This subfield consists of subfields TABID and KEY.
	TABID	*Table name* Enter OFRT. Table OFRT contains the route for the FGB call.
	KEY	*Index* Enter the index (0 to 1,023) within table OFRT that the call is to use for routing.

-continued-

Datafilling subtable STDPRTCT.STDPRT (continued)		
Field	**Subfield**	**Explanation and action**
	MINIDIGSR	*Minimum digits received* If field RTEPRSNT = N, leave this field blank. Otherwise, enter the minimum number of digits (1 to 15) to be collected before routing the call.
	MAXDIGSR	*Maximum digits received* If field RTEPRSNT = N, leave this field blank. Otherwise, enter the maximum number of digits (1 to 24) to be collected before routing the call.
End		

Datafill example for subtable STDPRTCT.STDPRT

The following example shows sample datafill for subtable STDPRTCT.STDPRT. Each STDPRTCT.STDPRT subtable sets up the translation for a specific call type. This is the first subtable indexed by the received leading digits if table LINEATTR or TRKGRP specifies a standard pretranslator subtable name. In this example, a standard pretranslator name (P621) is specified in table LINEATTR.

> ***Note:*** The FGB selector must be used at the FGB end office for FGB calls.

The first and second fields define the digits that are translated at the FGB end office. The last nine fields in this example are known collectively as PRETRTE. These fields define the selector type, the type of call, the number of prefix digits, the carrier name, the route present indicator, the table name, the route reference number, the minimum number of digits received, and the maximum number of digits received.

The datafill in the example shows the following characteristics:

- The selector is FGB. This selector is used for all FGB calls.
- The call type is DD.
- The number of prefix digits is 0.
- CAR1 is the carrier name defined in table OCCNAME.
- Y indicates that there is a route present.
- OFRT is the name of the table to which the call is routed.
- The value 1002 is the route reference number assigned to the route list in the OFRT table.

NTX268AA - FGB AMA End Office (NT Format) (continued)

- The last two numbers (7 and 7) represent the minimum and maximum number of digits that the end office must collect before it can outpulse information to the AT.

The last five fields in the datafill example define the route for the FGB call. If a route is not specified with the FGB selector, the home numbering translation route is used. It is specified in table HNPACONT.

Datafill example for subtable STDPRTCT.STDPRT

Example of a MAP display:

```
 FROMDIGS     TODIGS
                        PRETRTE
________________________________________________
9501488        9501488
     FGB DD 0 CAR1 Y OFRT 1002 7 7 $
```

Datafilling table OFRT

Table OFRT defines all the carrier routes and the operator service routes. These routes are assigned according to the carrier type (IEC or INC). Each tuple in table OFRT provides the route number and the route list, which must include a primary route and may include alternate routes.

The following procedure shows the datafill for table OFRT. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table OFRT

Field	Subfield	Explanation and action
RTESEL		*Route selector* Enter CND to specify a condition before routing. If the condition is met then the instructions of this route element are executed. Otherwise, they are skipped and translation will look for instructions in the next route element. Conditions relating to Equal Access follow.
CONDITION		Condition Enter EA to allow the operating company to route 10XXX calls differently from non-10XXX calls.
	CNDSEL	*Condition selector* Enter EA as the type of condition to be tested.
	EA_CND_RTE	*Condition sub-selector* Enter one of the following values: CAC, INTNL, or PIC.

Datafill example for table OFRT

The following example shows sample datafill for table OFRT.

Datafill example for table OFRT	
Example of a MAP display:	
RTE	RTELIST
1	CND EA CAC SK 3

Datafilling table LENFEAT

The following procedure shows the datafill for table LENFEAT. This procedure contains only those fields that apply to this package. See *Customer Data Schema*, 297-2101-451, for a description of the other fields.

Datafilling table LENFEAT

Field	Subfield	Explanation and action
DF		*Feature* Enter PIC, the feature assigned to the line.
DATA		*Data* This field consists of subfields DF, CARRIER, and CHOICE. A blank column must separate each subfield.
	DF	*Feature* Enter PIC, the primary inter-LATA carrier feature.
	CARRIER	*Carrier name* Enter the name of the carrier, as defined in table OCCINFO. If a null PIC is required, enter NILC.
	CHOICE	*Choice* If suscribers are able to choose their own carrier, enter Y. If a suscriber must use the assigned carrier, enter N.

Datafill example for table LENFEAT

The following example shows sample datafill for table LENFEAT.

NTX268AA - FGB AMA End Office (NT Format) (continued)

Datafill example for table LENFEAT

Example of a MAP display:

```
             LEN PTY       DF
 DATA
 ________________________________________________________________
 HOST 00 0 00 02   S      PIC                         PIC    C111
Y
```

Datafilling table OCCINFO

Table OCCINFO defines the attributes for carriers serving the EAEO and screens calls for carrier compatibility. For example, table OCCINFO allows international traffic to be sent only to carriers capable of handling such traffic.

The following procedure shows the datafill for table OCCINFO. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table OCCINFO

Field	Subfield	Explanation and action
CARRNAME		*Carrier name* Enter the carrier name or a 1- to 16-character alphanumeric abbreviation of the carrier name as defined in table OCCNAME.
CARRNUM		*Carrier number* Enter the CIC (0000 to 9999). ***Note 1:*** Only 256 entries per office are accepted. ***Note 2:*** Although N is included in the range of values, it is not a valid entry for this field.

-continued-

NTX268AA - FGB AMA End Office (NT Format) (continued)

Datafilling table OCCINFO (continued)

Field	Subfield	Explanation and action
ACCESS		*Access arrangement* Enter one of the following access types accepted by the carrier to handle a call: NONE no access INTERIM interim dialing over FGD signaling EAP EAP dialing over FGD signaling OTC FGC dialing over FGC signaling (local billing) TRANS both interim and EAP dialing over FGD signaling FGC FGC dialing over FGC signaling (FGD billing) ***Note 1:*** In order for the EACARR operational measurement (OM) group to record OM data, this field must be set to EAP, INTERIM, TRANS, or FGC. If the ACCESS field is set to NONE, none of the EACARR registers will be pegged. ***Note 2:*** This field must be set to NONE for the NILC tuple.
INTER		*Inter-LATA* Enter Y if the carrier can handle inter-LATA traffic. Otherwise, enter N.
INTNTL		*International* Enter Y if the carrier can handle international traffic. Otherwise, enter N.
INTRA		*Intra-LATA* Enter Y if the carrier can handle intra-LATA traffic. Otherwise, enter N.
ANI		*Automatic number identification* Enter Y if the carrier wants ANI digits sent with the called number. Otherwise, enter N.
FANI		*Flexible ANI* Enter Y if the carrier can receive flexible ANI information digits iinstead of standard ANI information digits. Otherwise, enter N.
ONISCRN		*Operator number identification screening* Enter Y if ONI traffic requires screening by an operator or CAMA position before outpulsing to the carrier. Otherwise, enter N.

-continued-

NTX268AA - FGB AMA End Office (NT Format) (continued)

Datafilling table OCCINFO (continued)

Field	Subfield	Explanation and action
AD1		*Abbreviated dialing number one* Enter Y if the carrier can be accessed using abbreviated dialing. Otherwise, enter N.
OVERLAP		*Overlap* Enter Y if the carrier wants to receive digits from the AT or the EAEO using overlap outpulsing. Otherwise, enter N.
INTERS		*Inter-state* Enter Y if the carrier can handle traffic between states. Otherwise, enter N.
INTRAS		*Intra-state* Enter Y if the carrier can handle traffic within the same state. Otherwise, enter N.
TERMREC		*Terminating access record* Enter the length (LONG or SHORT) of the terminating access record produced for the carrier. Default value is SHORT. ***Note:*** Access records are produced only when the OCCTERM option in table AMAOPTS is set to ON.
OCCSEPNO		*Other common carrier separation number* Enter the separation number (0 to 127) for the carrier in the Traffic Separations Measurement System.
OPSIG		*Operator signaling* Enter the type of operator signaling provided by the carrier. Enter FGRPC for FGD carriers that require FGC operator signaling. Enter NONE for all other FGD carriers. This entry is ignored for FGC carriers.
PICIND		*Presubscription indication* Enter Y if the carrier has chosen to receive the presubscription indicator; otherwise, enter N. This field must be datafilled for every entry in table OCCINFO.

-continued-

NTX268AA - FGB AMA End Office (NT Format) (continued)

Datafilling table OCCINFO (continued)

Field	Subfield	Explanation and action
DTMFIND		*Rotary dial/DTMF indicator* Enter Y if the carrier has chosen to receive the rotary dial/DTMF indicator on operator service calls that are routed directly to the carrier. Enter N if the carrier has chosen not to receive the rotary dial/DTMF indicator. ***Note:*** Field DTMFIND must be datafilled for every entry in table OCCINFO. Field DTMFIND is active only if feature package NTX888 is present.
OPSERV		*Operator services* Enter Y if the carrier accepts EAOSS and does not want the operating company to process 10XXX+0 and 00 calls to the carrier. Enter N if the carrier does not accept EAOSS and wants the operating company to process 10XXX+0 and 00 calls to the carrier. ***Note:*** Field OPSERV must be datafilled for every entry in table OCCINFO. Field OPSERV is active only if feature package NTX888 is present.
CACBLOCK		*Carrier access code blocking* Enter Y if the carrier wants to block all calls dialed with a CAC. Enter N for all other carriers. ***Note:*** Field CACBLOCK must be datafilled for every entry in table OCCINFO. Field CACBLOCK is active only if feature package NTX989 is present.
CTDOA		*Carrier toll denied OA* Enter Y to block OA calls to this carrier when the subscriber has the CTD line option applied for this carrier. Otherwise, enter N, the default value.
SCRNWATS		*Enhanced WATS screening* Enter Y if the carrier wants band screening performed on digits dialed from an enhanced WATS line. Otherwise, enter N. ***Note:*** SCRNWATS is only applicable when software package NTXA16 is present.

-continued-

NTX268AA - FGB AMA End Office (NT Format) (continued)

Datafilling table OCCINFO (continued)

Field	Subfield	Explanation and action
ATPINCL		*Access transport parameter included* Enter Y to indicate whether an access transport parameter should be included in the initial address message (IAM) going to the IEC. Otherwise, enter N.
INTRAOPR		*Intra-LATA operator* Enter Y to indicate if a carrier is capable of handling intra-LATA operator calls. Otherwise, enter N.
		End

Datafill example for table OCCINFO

The following example shows sample datafill for table OCCINFO.

Datafill example for table OCCINFO

Example of a MAP display:

```
CARRNAME CARRNUM ACCESS ORIGCARR INTER INTNTL INTRA ANI FANI
ONISCRN AD1 OVERLAP INTERS INTRAS TERMREC OCCSEPNO OPSIG PICIND
NOA950 INCCPN DTMFIND OPSERV CACBLOCK CTDOA CMCMON SCRNWATS
CRMCRA ATPINCL INTRAOPR
-------------------------------------------------------------------
 C111    0111   EAP     Y      Y      Y     N   Y    N
N     Y      Y     Y      Y    LONG       0    FGRPC    Y
 N      N     N       N       N      N      N      N
  Y    N        N
 C222    0222   EAP     Y      Y      N     Y   N    N
N    N       Y     Y      N    SHORT      0    FGRPC    N
 N    N       N       N       N      N      N      N
  Y    N        N
```

Datafilling table TRKGRP (SC)

The following procedure shows the datafill for table TRKGRP (SC). This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

NTX268AA - FGB AMA End Office (NT Format) (continued)

Datafilling table TRKGRP (SC)		
Field	**Subfield**	**Explanation and action**
GRPKEY		*Group key* This field contains subfield CLLI.
	CLLI	*Common language location identifier* Enter the code which represents the trunk group in table CLLI.
GRPINFO		*Variable group data* When GRPTYP = SC, this field consists of the following subfields.
	GRPTYP	*Group type* Enter the trunk group type SC.
	TRAFSNO	*Traffic separation number* Enter the incoming or incoming and outgoing traffic separation number (0 to 127) assigned to the trunk group. If not required, enter 0 (zero). If the switching unit has the Traffic Separation Peg Count software package, enter 1 to the lower value of parameters TFAN_IN_MAX_NUMBER and TFAN_OUT_MAX_NUMBER in table OFCENG. For switching units without the Traffic Separation Peg Count software package, enter a number from 1 to15. Incoming and outgoing traffic separation numbers 1 to 9 should be reserved for generic traffic separation numbers.
	PADGRP	*Pad group* Enter the name of the pad group assigned to the trunk group in table PADDATA. See table PADDATA for more information.
	NCCLS	*Operational measurements no circuit class* Enter NCRT (no circuit). This field is not required for incoming trunk calls.
	TRAFCLS	*Traffic usage class* Enter the traffic usage class assigned to the trunk group. See table TRKGRP for more information.
	ONI	*Operator number identification* Enter Y when traffic on the trunk group is 100 percent ONI traffic. Otherwise, enter N.

-continued-

NTX268AA - FGB AMA End Office (NT Format) (continued)

Datafilling table TRKGRP (SC) (continued)

Field	Subfield	Explanation and action
	SNPA	*Serving NPA* Enter the three-digit serving NPA code to which the trunk group belongs. ***Note:*** If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.
	PRTNM	*Standard pretranslator table name* If standard pretranslation is required, enter the name of the standard pretranslator table to which digit translation is to route after the receipt of one digit. If pretranslation is not required, enter NPRT. ***Note:*** If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.
	NODIGRTE	*No digit route* Enter the position (RTE1, RTE2, RTE3, or RTE4) in table POSITION to which all calls are routed. If the entry is NONE, all calls are routed to the position CAMA in table POSITION. ***Note:*** If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.
	NODIGCTP	*No digit call type* Enter the type of call to be assigned to calls with no incoming digits (seizure only): DD direct dial NL NIL NP no prefix OA operator assisted
	TRTMTSUP	*Treatment Supervision* Enter the type of supervision required when translation is routed to a treatment, tone, or announcement: off-hook (OFFHOOK), on-hook (ONHOOK), or off-hook wink (OFFHKWK).

-continued-

NTX268AA - FGB AMA End Office (NT Format) (continued)

Datafilling table TRKGRP (SC) (continued)

Field	Subfield	Explanation and action
	NPRETSUP	*No prefix return supervision* Enter the return supervision required on “no prefix” type of calls: off-hook (OFFHOOK), on-hook (ONHOOK), or off-hook wink (OFFHKWK).
	NOBILLCD	*Number of bill codes* Enter the number of bill codes plus spares (0 to 63) that are reserved in table BILLCODE.
	ANISEIZ	*ANI seizure timing* Enter the time in seconds (2 to 30) that the trunk has to wait for reception of first ANI digit or signal. ***Note:*** If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.
	ANIPDIAL	*ANI partial dialing* Enter the time in seconds (2 to 30) that the trunk has to wait for reception of each ANI signal or digit but the first. ***Note:*** If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.
	DIR	*Direction* Define the direction of the traffic flow; if incoming, enter IC; if the direction is two-way, enter 2W. ***Note:*** If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.

-continued-

NTX268AA - FGB AMA End Office (NT Format) (continued)

Datafilling table TRKGRP (SC) (continued)

Field	Subfield	Explanation and action
	SELSEQ	*Select sequence* Enter MIDL. When the trunk group is incoming, sequential selection does not apply. If the trunk group is two-way (DIR = 2W) and the far end is a link list switcher, enter LIDL or MIDL (least idle or most idle) when the far end is MIDL or LIDL, respectively. If the trunk group is two-way (DIR = 2W), the far end is not a link list switcher, and sequential selection does not apply, enter MIDL. If the trunk group is two-way, the far end is not a link list switcher, and sequential selection applies (the Enhanced Sequential Trunk Hunting software package must be present), then do the following: ▪ Enter CWCTH or CCWCTH for clockwise or counterclockwise circular trunk hunting from the most recently released trunk in the trunk group. The choice is based on the order of trunk members in table TRKMEM, when the far end is CCWCTH or CWCTH, respectively. ▪ Enter ASEQ or DSEQ for ascending or descending sequential selection, based on the order of trunk members in table TRKMEM, when the far end is DSEQ or ASEQ, respectively.
	DIGSOUT	*Digits outpulsed* Enter 0. This field is reserved for future use.
	SDATA	*Signaling data* This subfield is made up of subfield SIGFMT and, if SIGFMT = BELL, of the subfields that follow.
	SIGFMT	*Signaling format* If two-way or incoming trunk group is from CAMA, specify the signalling format: BELL. ***Note:*** If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.

-continued-

NTX268AA - FGB AMA End Office (NT Format) (continued)

Datafilling table TRKGRP (SC) (continued)

Field	Subfield	Explanation and action
	GRPTYPE	*Group type* If the start signal (ST) for DD calls is ST and one information digit is received, enter REGULAR. If the start signal for DD calls is ST2P and one information digit is received, enter SUPER. If the start signal for DD calls is ST and two information digits are expected, enter OSS. The OSS option is related to Equal Access calls.
	DEFANIFL	*Default ANI fail* This field determines the route to be taken by translations when no ANI (ANI FAIL) is received. If the translation is to route to position CAMA in table POSITION, enter CAMA. If the translation is to route to position TSPS in table POSITION, enter TSPS. If the translation is to route to a hard-coded TOLL DENIED treatment, enter TREAT. This treatment will route originator to reorder.
	IC_ROUTE	*Independent carrier route* When GRPTYPE = OSS, enter the position, known to table POSITION, field POS, to specify the route that is to be taken if the call is identified by the start signal as an IEC Equal Access call. Otherwise, enter NONE.
	ANITYPE	*ANI request signal* Enter the type of ANI request signal: wink (WK) or reversal (REV). ***Note:*** If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.
	RECORDNP	*Record calls of type NP* If the office includes the AT&T AT feature, enter Y or N to indicate whether calls of call type NP should be recorded. Otherwise, enter NP.

-continued-

NTX268AA - FGB AMA End Office (NT Format) (continued)

Datafilling table TRKGRP (SC) (continued)

Field	Subfield	Explanation and action
	SPLOOKUP	*Special lookup* If the non-EAEO is not capable of outpulsing the correct ANI information digit and all incoming calls on the trunk group require a lookup in table SPLANIN, enter Y. Otherwise, enter N.
	OPTIONS	*Options* Complete the field OPTION and its corresponding refinements for the desired trunk option.
	OPTION	*Option* Valid entries are BCNAME (bearer capability name) or NOUTR (no universal tone receiver).
	NOUTR	*No universal tone receiver* Enter NOUTR if the trunk group is to bypass the use of the universal tone receiver (UTR).

End

Datafill example for table TRKGRP (SC)

The following example shows sample datafill for table TRKGRP (SC). The example shows the datafill for an incoming FGB call into the AT on trunk group ICAMDCM. At this point, the call is at the tandem, which must determine further routing. Table TRKGRP (SC) identifies the incoming trunk and indicates that the call is to route to standard pretranslation (TCA9).

Datafill example for table TRKGRP (SC)

Example of a MAP display:

```
  GRPKEY
 GRPINFO
-------------------------------------------------------------
ICAMDCM
   SC 0 TLA NCRT NIL N 518 TCA9  NONE  DD ONHOOK
ONHOOK
 10 5 5 IC
 MIDL 0 BELL REGULAR CAMA CAMA REV Y Y (PIA) (NOUTR)
(BCNAME SPEECH) $
```

NTX268AA - FGB AMA End Office (NT Format) (end)

Datafilling table POSITION

The following procedure shows the datafill for table POSITION. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table POSITION

Field	Subfield	Explanation and action
POS		*Type of position* Enter the name assigned to the type of position. For offices equipped with LAMA, enter CAMA. Valid entries follow: TOPS CTOP CAMA TSPS AMAFAIL AMRX RTE1 RTE2 RTE3 RTE4 NONE AOSS OOC
PRTE		*Position route selector* This field consists of subfields PRTESEL and CLLI. Descriptions of these subfields follow.
	PRTESEL	*Position route selector* Enter S if the translation is to route to a CLLI.
	CLLI	*Common language location identifier* Enter the CLLI code assigned to the trunk group to which the call is to be routed. Enter CPOS if POS = CAMA. Enter TOPSPOS if POS = TOPS. Enter AOSSPOS if POS = AOSS.

Datafill example for table POSITION

The following example shows sample datafill for table POSITION.

Datafill example for table POSITION

Example of a MAP display:

```
POS                                       PRTE
----------------------------------------------
CAMA                          S           CPOS
```

Translation verification tools

Translation verification tools are not applicable for this package.

Service orders

Service orders are not applicable for this package.

NTX711AB - Equal Access End Office Enhancements

Package name

Equal Access End Office Enhancements

Package number

NTX711AB

Feature numbers

The NTX711AB feature package consists of the following features:

NTX711AB feature numbers and names

Feature number	Feature name
BR0772	Equal Access Presubscription Reports
AF0170	Presubscription Indicator
AL0289	Equal Access Presubscription Reports on MDC
AF1099	Equal Access Multiparty Line Identification

BCS applicability

BCS30 and up

Feature package prerequisites

This package requires the following feature packages:

Feature package prerequisites

Feature package	Feature package name
NTX000AA	Bilge
NTX001AA	Common Basic
NTX186AA or NTX186AB	Equal Access End Office
NTX901AA	Local Features I

Description

The NTX711AB - Equal Access End Office feature package provides the following enhancement features:

- Equal Access POTS presubscription reports
  This feature provides the ability to generate a report that lists the POTS subscribers that have been assigned a PIC.

NTX711AB - Equal Access End Office Enhancements (continued)

- Equal Access presubscription reports on MDC
  This feature provides the ability to generate Equal Access presubscription reports for MDC lines and PBX trunks.
- presubscription indicator
  With this feature, the operating company can send an indicator to the IEC or INC when the calling station has not presubscribed to that carrier. The IEC or INC may choose to receive or not receive the indicator.
- Equal Access multiparty line identification
  With this feature, the operating company can decide whether to route Equal Access multiparty lines to an operator or a CAMA position for identification before outpulsing to an IEC/INC.

Theory of operation

The features provided by this feature package are described in the following sections.

Equal Access POTS presubscription reports

The PICLIST command, when entered at the MAP (maintenance and administration position) terminal, generates an Equal Access presubscription report. Presubscription reports can be generated for a single IEC or INC or for all IECs and INCs datafilled in the office. The type of report generated depends on the parameter specified. The PICLIST command is described in chapter 2 of *Equal Access Maintenance Guide*, 297-2101-500.

Equal Access presubscription reports on MDC lines and PBX trunks

The IBNPICLIST command, when entered at the MAP, generates an Equal Access presubscription report on MDC lines and PBX trunks. These reports can be generated for a single IEC or INC or for all IECs and INCs datafilled in table OCCNAME. Depending on the parameter specified, the report can list IBN lines, PBX trunks, or both. The IBNPICLIST command is described in chapter 2 of *Equal Access Maintenance Guide*, 297-2101-500.

Presubscription indicator

Once an EAEO determines that a call is to be routed to an IEC or INC, it then verifies if that carrier has chosen to receive the presubscription indicator. The presubscription indicator informs the carrier that the calling station has not presubscribed to that carrier.

The presubscription indicator is sent to the carrier in the form of a modified key-pulse (KP) signal. The modified signal is KP prime (KP') and consists of the same MF tones as the start prime (ST') signal (900 Hz + 1700 Hz). If the calling station has not presubscribed to the IEC or INC, the KP signal preceding the calling DN is replaced with a KP' signal.

This feature is implemented by adding field PICIND to table OCCINFO. This field specifies whether the carrier has chosen to receive the presubscription indicator.

Equal Access multiparty line identification

This feature allows the operating company to specify whether to route Equal Access multiparty ONI calls to a specific carrier or to route Equal Access multiparty calls to an operator or CAMA position for identification prior to outpulsing to the carrier.

Note: ONI traffic includes ANI failure traffic.

This optionality is provided by adding field ONISCRN to table OCCINFO. This field specifies if the carrier wants ONI traffic to be screened and sent to an operator or CAMA position for identification before the EAEO outpulses to the carrier.

There are two methods for routing Equal Access ONI calls to an operator or CAMA position:

- With pretranslator route selector P method, the operator specified in the standard pretranslator is used to index into table POSITION. The route associated with the specified operator position from table POSITION is then used to route the call.
- With the default method, if a pretranslator route selector P is not used, the call defaults to a CAMA position. The route associated with the CAMA position from table POSITION is then used to route the call.

Package limitations and restrictions

The following limitations and restrictions apply to the NTX711AB - Equal Access End Office Enhancements feature package:

- Carriers do not receive the presubscription indicator for SAC calls that are not billed to the originating station (for example, 800 Service).
- Carriers do not receive the presubscription indicator for 950-WXXX calls.
- The presubscription indicator applies to FGD signaling only.

Feature interactions

There are no feature interactions for this feature package.

Activation/deactivation by the end user

Activation/deactivation is not applicable for this feature package.

Billing

This feature package does not affect billing.

NTX711AB - Equal Access End Office Enhancements (continued)

Datafilling office parameters

This package does not affect office parameters.

Datafill sequence

The following table requires datafill to implement the feature package.

Datafill table required for Equal Access End Office Enhancements

Table	Form	NTP	Purpose of table
OCCINFO	2355A-B	297-1001-451	Table OCCINFO (other common carrier information) defines the attributes for the carriers serving a DMS switch and screens calls for carrier compatibility.

Datafilling table OCCINFO

Table OCCINFO defines the attributes for carriers serving the end office and screens calls for carrier compatibility. For example, table OCCINFO allows international traffic to be sent only to carriers capable of handling such traffic.

The following procedure shows the datafill for table OCCINFO. This procedure contains only the two fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table OCCINFO

Field	Subfield	Explanation and action
ONISCRN		*Operator number identification screening* If ONISCRN is set to N, ONI screening is not required for that carrier. The carrier can handle ONI traffic and is responsible for identifying the Equal Access ONI calls. If ONISCRN is set to Y, ONI screening is required for that carrier. The carrier cannot handle ONI traffic, and Equal Access ONI calls are sent to an operator or CAMA position for identification before the EAEO outpulses to that carrier.
PICIND		*Presubscription indication* Enter Y if the carrier has chosen to receive the presubscription indicator, otherwise enter N. This field must be datafilled for every entry in table OCCINFO.

Datafill example for table OCCINFO

The following example shows sample datafill for table OCCINFO.

NTX711AB - Equal Access End Office Enhancements (end)

Datafill example for table OCCINFO

Example of a MAP display:

```
 CARRNAME CARRNUM ACCESS ORIGCARR INTER INTNTL INTRA ANI FANI
 ONISCRN AD1 OVERLAP INTERS INTRAS TERMREC OCCSEPNO OPSIG
 PICIND NOA950 INCCPN DTMFIND OPSERV CACBLOCK CTDOA CMCMON
 SCRNWATS CRMCRA ATPINCL INTRAOPR
```

```
     C111    0111   EAP     Y      Y      Y     N   Y    N
      N     Y      Y     Y      Y    LONG       0    FGRPC
Y         N      N     N       N       N      N      N      N

      Y    N        N
     C222    0222   EAP     Y      Y      N     Y   N    N
      N    N       Y     Y      N    SHORT      0    FGRPC
N         N    N       N       N       N      N      N      N

      Y    N        N
```

Translation verification tools

Translation verification tools are not applicable for this package.

Service orders

Service orders are not applicable for this feature package.

NTXE23AA - Cellular Interconnect - End Office

Package name

Cellular Interconnect - End Office

Package number

NTXE23AA

Feature numbers

The NTXE23AA feature package consists of the following feature:

NTXE23AA feature number and name	
Feature number	**Feature name**
AF1394	AMA for Type 1 and 2B Cellular Interconnection

BCS applicability

BCS35 and up

Feature package prerequisites

This package requires the following feature packages:

Feature package prerequisites	
Feature package	**Feature package name**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX094AA	Digital Subscriber Services
NTX159AA	Bellcore LAMA Format
NTX901AA	Local Features I

Description

This feature package provides the capability of producing originating and terminating AMA records for type 1 and 2B cellular interconnections. Bellcore has defined three interconnection schemes for a cellular mobile carrier (CMC) to access the operating company, the IEC, and the INC networks. They are the following:

- type 1 (a trunk connection through an EAEO or a non-EAEO)
  The signaling received from the CMC is similar to that from a line.
- type 2A (a connection through an AT)
  The signaling received from the CMC is similar to that from an EAEO.

NTXE23AA - Cellular Interconnect - End Office (continued)

- type 2B (a connection from a CMC to a local end office)
  Type 2B is a form of type 1 interconnection.

Theory of operation

This feature package provides two call code records for type 1 and 2B cellular interconnections. A call code 63 AMA record is produced for an originating CMC call, if a wink from the CMC is received. An originating CMC call is a call from an EAEO or a non-EAEO to a CMC trunk group.

A call code 65 AMA record is produced for a terminating CMC call when a seizure is detected on the incoming CMC trunk. A terminating CMC call is a call from a CMC trunk to a connecting EAEO or a non-EAEO. If a call is made from a CMC to another CMC, the call is both an originating and a terminating CMC call.

The production of these AMA records is controlled by options CMCICWK, CMCORIG, and CMCTERM in table AMAOPTS.

Translations

The CMC type 1 and 2B interconnections are datafilled as PX trunk groups on the DMS-100 switch. The PX trunk provides the direct dialing and translation capability required by these interconnections.

This feature package adds field LOCALCMC to table TRKGRP for the PX trunk group. Field LOCALCMC specifies whether the trunk is serving as a type 1 or 2B interconnection and drives the production of the originating (call code 63) and terminating (call code 65) type 1 interconnection AMA records.

Translations for Equal Access and non-Equal Access calls from a PX trunk are similar to translations for POTS lines. See feature package NTX186AB - Equal Access End Office in this guide for additional information about POTS Equal Access translations.

For non-Equal Access calls, the standard pretranslator from table TRKGRP (PX) is used, along with the ZEROMPOS field, if zero minus dialing is received. The following two non-Equal Access call types are supported by the DMS switch for PX trunks:

- 0/1 + 3 to 10 digits
- 11/01 + country code + national number + ST

For an Equal Access call, the standard pretranslator is used along with the PIC, CHOICE, and LATANM subfields. The following Equal Access call types are supported by the DMS switch for PX trunks:

- 10XXX 1 + 7/10 digits DD national

• 10XXX 0 + 7/10 digits	OA national
• 10XXX 011 + country code + national number	DD international
• 10XXX 01 + country code + national number	OA international
• 00	carrier 00- call
• 10XXX + #	cut through dialing (Digitone only)
• 10XXX + 0(0)	carrier 0- call
• 1 N0/1X + 7 digits	SAC (such as 800 and 900)
• 950-WXXX	interim 950 call (FGD)

Type 2B interconnections require only local call termination. To prevent terminations other than local calls, the standard pretranslator for the trunk group should be datafilled to allow only the NPA-NXX codes that are served by the connecting DMS-100 end office.

Treatments for 10XXX intra-LATA calls

Formerly, when Equal Access calls failed because they could not be completed by the carrier (according to table OCCINFO datafill), they were routed to vacant code (VACT). The treatment given is now dependent upon the call type and the carrier datafill in table OCCINFO. Table 3-8 lists the treatments applicable to type 1 and 2B CMC calls.

Table 3-8
Failure conditions - new treatments

Failure condition	Treat-ment	Disposition
Inter-LATA restriction (INTER = N (no) in table OCCINFO for carrier)	CACE	CAC in error announcement
Intra-LATA restriction (INTRA = N in table OCCINFO for carrier)	NACD	Do not dial 10XXX announcement
Interstate restriction (INTERS = N in table OCCINFO for carrier)	CACE	CAC in error announcement
Intrastate restriction (INTRAS = N in table OCCINFO for carrier)	CACE	CAC in error announcement

-continued-

NTXE23AA - Cellular Interconnect - End Office (continued)

Table 3-8
Failure conditions - new treatments (continued)

Failure condition	Treat-ment	Disposition
International restriction (INTNTL = N in table OCCINFO for carrier)	CACE	CAC in error announcement
AD1 dialed (AD = N in table OCCINFO for carrier)	CACE	CAC in error announcement
End		

TRAVER is updated to reflect the changed Equal Access treatments. When used with the trace option, TRAVER gives the reason for failed carrier checks, such as "This carrier does not handle inter-LATA traffic." Then TRAVER shows a lookup of the treatment in table TMTCNTL. When used with the no trace option, TRAVER shows the treatment route for failed calls.

Package limitations and restrictions

The following limitations and restrictions apply to this feature package:

- Only MF outpulsing is supported for outgoing or two-way type 1 and 2B cellular interconnections.
- For all PX trunks, only 7- or 10-digit billing numbers are allowed in table TRKGRP or CXGRP.

Feature interactions

This feature package is compatible with existing Equal Access AMA features.

Activation/deactivation by the end user

Activation/deactivation by the end user is not applicable for this feature package.

Billing

Billing for this feature package is described in the theory of operation section.

Datafilling office parameters

The following table identifies the datafill for office parameters for this feature package.

NTXE23AA - Cellular Interconnect - End Office (continued)

Office parameters used by Cellular Interconnect - End Office	
Table name **Parameter**	**Explanation and action**
OFCENG NUM_OF_BC_AMA_UNITS	Each originating CMC call (and certain terminating CMC calls) requires at least one Bellcore AMA unit. However, when provisioning parameter NUM_OF_BC_AMA_UNITS, two Bellcore AMA units should be provided for every CELL trunk in the office which routes to a carrier. See table 3-9 for more information.

Note: To calculate the number of CAMA recording units required, use the following provisioning rule:

UNITS = the existing provisioned number
\+ the average number of CAMA calls per second that generate a GENERIC AMA record (call codes 800 to 999)
\+ the average number of CAMA calls per second that generate a service feature field using table STDPRTCT and subtable STDPRTCT.AMAPRT.

Table 3-9
Bellcore AMA units

Call type	**Number of units**
CELL trunk to CELL trunk	1
CELL trunk to FGC/FGD carrier	2
CELL trunk to FGB carrier	2
CELL trunk to end office (IT trunk)	1
CELL trunk to line (DMS-100/200 switch)	1

NTXE23AA - Cellular Interconnect - End Office (continued)

Datafill sequence

The following tables require datafill to implement this feature package. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Cellular Interconnect - End Office

Table	Form	NTP	Purpose of table
TRKGRP (PX)	2156AE	297-1001-451	Table TRKGRP (PX) (PX trunk group) contains information about each PX trunk group.
TRKSGRP	2151A-F	297-1001-451	Table TRKSGRP (trunk subgroup) lists supplementary information for each subgroup assigned to one of the trunk groups listed in table TRKGRP (PX).
AMAOPTS	2333A-B	297-1001-451	Table AMAOPTS (AMA options) controls the activation and scheduling of the recording options for local, tool, and high-revenue calls.

Datafilling table TRKGRP (PX)

The following procedure shows the datafill for table TRKGRP (PX). This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table TRKGRP (PX)

Field	Subfield	Explanation and action
	LOCALCMC	*Local cellular mobile carrier* Enter Y to specify that the trunk is serving as a type 1 or 2B interconnection and drives the production of the originating (call code 63) and terminating (call code 65) type 1 interconnection AMA records. Field OPULSTYP in table TRKSGRP must then be set to MF. Enter N to specify that the trunk is not a type 1 or 2B interconnection; type 1 AMA records are not produced.
	EA	*Equal Access* Enter Y for EAEO. If Y is entered, the PIC, CHOICE, and LATANM subfields must also be datafilled. Enter N (the default value) for a non-EAEO. If this field is set to N and the end office is an EAEO, all outgoing calls are treated as non-Equal Access calls. Call routing is based on standard translations (HNPACODE), and non-Equal Access billing is used.
	PIC	*Primary inter-LATA carrier* If field EA = Y, enter an IEC or INC name, as defined in table OCCNAME. If EA = N, leave this field blank.
	CHOICE	*Choice* If EA = Y, enter Y if 10XXX dialing is allowed. Otherwise, enter N. If EA = N, leave this field blank.
	LATANM	*LATA name* If EA = Y, enter a LATA name specified in table LATANAME. If EA = N, leave this field blank.

Datafill example for table TRKGRP (PX)

The following example shows sample datafill for table TRKGRP (PX).

NTXE23AA - Cellular Interconnect - End Office (continued)

Datafill example for table TRKGRP (PX)

Example of a MAP display:

```
          GRPKEY
                                                              GRPINFO
-------------------------------------------------------------------------

RCC1PX
   PX 0 ELO NCRT 2W NIL MIDL N POT1 NSCR 619 LCL NONE NONE NLCA
   N N 32 NIL 5409999 DIALTN N N N $
```

Datafilling table TRKSGRP

The following procedure shows the datafill for table TRKSGRP. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table TRKSGRP

Field	Subfield	Explanation and action
	OPULSTYP	*Outgoing type of pulsing* If subfield LOCALCMC in table TRKGRP (PX) is set to Y, then enter MF.

Datafill example for table TRKSGRP

The following example shows sample datafill for table TRKSGRP.

Datafill example for table TRKSGRP

Example of a MAP display:

```
 SGRPKEY   CARDCODE
                                                              SGRPVAR
-------------------------------------------------------------------------

   DAC 0    DS1SIG
         STD OG    MF      WK   7 0 NO     NO N N N  70   UNEQ
```

Datafilling table AMAOPTS

Table AMAOPTS controls the activation and scheduling of the recording options for local, toll, and high-revenue calls. It contains one tuple for every option. A schedule, associated with every option, defines whether an option is active, active only at certain times, or not active.

Options CMCORIG, CMCTERM, and CMCICWK are related this feature package. The following procedure shows the datafill for these options in table AMAOPTS. This procedure contains only those fields that apply to

NTXE23AA - Cellular Interconnect - End Office (continued)

this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table AMAOPTS

Field	Subfield	Explanation and action
OPTION		*Option* Enter an alphanumeric option code. The options relevant to Equal Access are described in the following subfields.
	CMCORIG	This option controls the generation of originating CMC billing records (call code 63).
	CMCTERM	This option controls the generation of terminating CMC billing records (call code 65).
	CMCICWK	For a terminating CMC call, the carrier connect time is normally the time the incoming CMC trunk is seized. If option CMCICWK is set to ON, the carrier connect time on a CMC-to-FGD carrier call is the time the billing wink is received from the FGD carrier. A CMC access record is not produced unless a billing wink is received from the FGD carrier.
SCHEDULE		*Schedule* This field consists of the following subfields.

-continued-

NTXE23AA - Cellular Interconnect - End Office (continued)

Datafilling table AMAOPTS (continued)

Field	Subfield	Explanation and action
	AMASEL	*AMA selector* Enter one of the following values: ON Activate the option immediately. OFF Deactivate the option immediately. DEFAULT Use the default schedule for the option. PERIODIC Activate the option at the specified date and time, and perform the periodic activity every so many hours or minutes. Complete subfields ONDATE and ONTIME to specify the date and time for activation, and complete field SCHED for the time intervals to perform the activity. TIMED Activate the option between the specified dates and times. For the CMCORIG option, the valid AMA selectors are ON, OFF, TIMED, and DEFAULT. Default is OFF. For the CMCTERM option, the valid AMA selectors are ON, OFF, TIMED, and DEFAULT. Default is OFF. For the CMCICWK option, the valid AMA selectors are ON, OFF, TIMED, and DEFAULT. Default is OFF.
	ONDATE	*Activation on date* If AMASEL = TIMED, enter the year, the month, and the day on which the activation of the option is set to ON. The format is YYMMDD. Otherwise, there is no prompt for this field.
	ONTIME	*Activation on time* If AMASEL = TIMED, enter the hour and minute the option will be activated. The format is HHMM. Otherwise, there is no prompt for this field.
	OFFDATE	*Activation off date* If AMASEL = TIMED, enter the year, the month, and the day on which the activation of the option is set to OFF. The format is YYMMDD. Otherwise, there is no prompt for this field.
	OFFTIME	*Activation off time* If AMASEL = TIMED, enter the hour and minute the option will be deactivated. The format is HHMM. Otherwise, there is no prompt for this field.

End

NTXE23AA - Cellular Interconnect - End Office (end)

Datafill example for table AMAOPTS

The following example shows sample datafill for table AMAOPTS. In this example, option CMCORIG is enabled.

Datafill example for table AMAOPTS

Example of a MAP display:

OPTION	SCHEDULE
CMCORIG	ON

Translation verification tools

Translation verification tools are not applicable for this package.

Service orders

Service orders are not applicable for this package.

NTXA16AA - Enhanced WATS Operation (POTS)

Package name

Enhanced WATS Operation (POTS)

Package number

NTXA16AA

Feature number

The NTXA16AA feature package consists of the following feature:

NTXA16AA feature number and name	
Feature number	**Feature name**
AF1092	Enhanced WATS

BCS applicability

BCS30 and up

Feature package prerequisites

This package requires the following feature packages:

Feature package prerequisites	
Feature package	**Feature package name**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX006AA	Business Lines
NTX042AA	Local Automatic Message Accounting
NTX072AA	International Direct Distance Dialing
NTX159AA	Bellcore LAMA Format
NTX186AA or NTX186AB	Equal Access End Office
NTX901AA	Local Features I

Description

The NTXA16AA - Enhanced WATS Operation (POTS) feature package provides expanded capabilities to outward WATS (OUTWATS) and greater flexibility of OUTWATS band arrangements. These enhancements allow the central office to provide better service to WATS subscribers and to carriers that offer WATS.

NTXA16AA - Enhanced WATS Operation (POTS) (continued)

This feature package does not alter or replace the existing WATS feature package. It coexists with the original WATS package to allow a smooth transition from one package to the other. It is dependent on inward WATS (INWATS) capabilities provided by the existing WATS package. The original WATS package remains in the offices not offering Equal Access.

Theory of operation

The OUTWATS subscriber accesses a WATS line by going off-hook and dialing the appropriate number. The DMS switch verifies if the call is allowed. If it is, the DMS switch routes the call to the appropriate trunk group. If the call is inter-LATA, a trunk group from the subscriber primary WATS IEC (WIC) is selected. Out-of-band calls, dialed outside a designated area of service or to a non-allowed code, are routed to a recorded announcement or treatment.

The enhancements provided by this feature package are described in the following sections.

Establishing band arrangements

This feature package provides the ability to establish as many unique band arrangements as required to properly serve the IECs requesting WATS. With enhanced WATS, up to 127 bands (band 0 to band 126) can be defined in table WATSBAND, and 1024 band arrangements can be defined in table BANDSETS. Also, band set assignments are more flexible because they are assigned to user-defined keys instead of SNPA codes.

Jurisdiction

This feature package has the capability to allow pure intrastate (jurisdictional), pure interstate (jurisdictional), and combined interstate/intrastate (multijurisdictional) service.

Multijurisdictional WATS can be assigned to a single line. Each jurisdiction can be provided by a different carrier. Dialing 10XXX is then required to reach one of the jurisdictions because only one carrier can be the WIC.

Screening

With an enhanced WATS access line, the associated band of service or call-type screening is defined by sets of NPA-NXX codes or access dialing arrangements. The areas of service can be different for each IEC requesting WATS. The validation translation tables for individual bands and allowed call types required for code interpretation are defined by the operating company. These tables can be datafilled and changed through normal procedures. The access to international direct distance dialing (IDDD) from enhanced WATS lines is enabled or disabled by tables STDPRT and OCCINFO.

NTXA16AA - Enhanced WATS Operation (POTS) (continued)

Enhanced WATS provides screening to associated bands or call-type screening for intra-LATA/inter-LATA service. This capability applies to call originations from WATS access lines as a part of enhanced OUTWATS and two-way WATS. This screening can be disabled when the carrier does not wish to have its traffic screened by the originating office. All inter-LATA WATS calls can then be forwarded directly to the carrier, if they are not blocked. No band screening is performed on intra-LATA or international calls.

For enhanced OUTWATS or two-way WATS, if a DD call origination passes the associated band or call-type screening, then the call is routed to the appropriate transporting carrier.

All SAC calls can be routed directly from the pretranslator or handled as a national call. Either way, they are screened according to the setting of field SAC in table LENFEAT or CXGRP.

All DA calls other than 411 calls are routed directly from table STDPRT in order for enhanced WATS screening to be bypassed or to datafill a NON_DA555 inter-LATA call as NIL in table WATSBAND. If the calls are set up as national, then they are subject to all screening procedures. Any calls routed from the pretranslator table and not assigned a translation scheme (NA or IN) are assumed to be special calls and no enhanced WATS screening is performed. The three exceptions are N11, SAC, and FGB calls.

Line class codes

Two line class codes (LCC) are introduced by this feature. They are the following:

- EOW (enhanced outward WATS)
- ETW (enhanced two-way WATS)

Code EOW is assigned to lines with enhanced OUTWATS in offices with the NTX186AB - Equal Access End Office feature package and the enhanced WATS software package. Code EOW is similar to LCC OWT (OUTWATS), but may be used with or without a hunt group. Code OWT is restricted to non-hunt-type lines.

Calls are allowed to terminate on enhanced OUTWATS lines. This feature can be disabled by applying the denied termination option (DTM) to the line.

Code ETW is also assigned to lines with enhanced OUTWATS in offices with the NTX186AB - Equal Access End Office feature package and the enhanced WATS feature package. Code ETW is similar to LCC 2WW (two-way WATS), but may be used with or without a hunt group. Code

NTXA16AA - Enhanced WATS Operation (POTS) (continued)

2WW is restricted to hunt-type lines. Code ETW is considered to be a combination of LCCs INW (inward WATS) and EOW.

Line options

A new line option is used with LCCs EOW and ETW. This new option, EWAL (enhanced WATS access line), allows a maximum of five carriers to be assigned to a line. Associated with each carrier is a bandset name that provides the ability to screen WATS calls. The first carrier assigned to the line is the WIC. All other carriers assigned to the line are accessed by dialing 10XXX. This process allows a subscriber to select different providers for different bands. If a subscriber dials 10XXX for a provider that has not been assigned to the line, the call is blocked. The EWAL line option appears in table LENFEAT and is not compatible with the PIC line option.

The EWAL line option also provides new fields. Fields INTRALAT and SAC permit or disable the ability to make intra-LATA and SAC calls. Intra-LATA and SAC calls are mutually exclusive, even though SAC calls could be intra-LATA calls. A SAC call is permitted from a line that has SAC calling enabled and intra-LATA calling disabled. Likewise, SAC calls are blocked when SAC calling is disabled, even if intra-LATA calling is enabled. A SAC is determined from entries in table EASAC. The band number provided by the EWAL option is used for billing and appears in the billing records for the line. It is not used for screening calls.

Multiple carriers may be assigned to PX trunks in table CXGRP to allow multiple OUTWATS carriers for PBX customers.

Package limitations and restrictions

Feature package NTXA16AA has the following limitations and restrictions:

- The range of INWATS band numbers is not changed by this feature. This feature provides no enhancements to INWATS other than to ensure that INWATS calls function with enhanced two-way WATS.
- Band screening is not in effect for SAC, intra-LATA, FGB, and N11 calls, or any calls routed from pretranslation with no translation system identified.
- International calls may be allowed or disallowed through pretranslations. No band screening is performed on international calls.
- Calls not requiring screening should be routed directly from the pretranslator.
- Only the first 127 carriers datafilled in table OCCNAME may be datafilled in table WATSBAND. The carrier NILC may not be datafilled in table WATSBAND.

- No provision is made by this feature for NT format billing of enhanced WATS calls.
- Original overload procedures apply to enhanced WATS just as they do for OUTWATS.

Feature interactions

There are no feature interactions associated with this feature package.

Activation/deactivation by the end user

Activation/deactivation is not applicable for this feature package.

Billing

This feature package expands the valid band range in Bellcore format AMA WATS billing records. In particular, this expansion is directly reflected in billing records with call codes 068 (intra-LATA) and 114 (inter-LATA). The range has been increased from 0 through 12 to 0 through 126. The format of the records themselves is unchanged.

The following table shows the routing and billing that can be expected on calls dialed from an enhanced outward or two-way WATS line. The billing for these calls is subject to change based on Bellcore requirements.

NTXA16AA - Enhanced WATS Operation (POTS) (continued)

Call type	Billing	Route
0-	TOPS billing	To TOPS via field ZEROMPOS in table LINEATTR
00-	CC 114	To IEC operator via table STDPRT
0+ intra-LATA	TOPS billing	To TOPS via standard translations
0+ inter-LATA	CC 114	To IEC operator
01+	CC 114	To IEC operator
011+	CC 114	To IEC IDDD
411	CC 009	To directory assistance via tables STDPRT and AMAPRT
5551212	CC 033	To directory assistance via tables STDPRT and AMAPRT
555XXXX	CC 088	To directory assistance via tables STDPRT and AMAPRT
911	No billing	To Emergency Service Bureau (ESB)
611	CC 068	To repair via table STDPRT
800 intra-LATA	CC 068	Route/screen via regular translations
800 inter-LATA	CC 114	Route/screen via regular translations
E800	CC 141	Routed to IEC
	CC 142	Handled by operating company
900 intra-LATA	CC 068	Route/screen via regular translations
900 inter-LATA	CC 114	Route/screen via regular translations
950 Equal Access	CC 114	Route via table STDPRT
950 FGB	CC 134	Route via table STDPRT
976 intra-LATA	CC 068	Route/screen via regular translations
10XXX+	CC 114	Route/screen via regular translations
(1)+ intra-LATA	CC 068	Route/screen via regular translations
(1)+ inter-LATA	CC 114	Route/screen via regular translations

Note: Call codes 007 and 111 have been omitted from the table since they pertain only to MDC.

An FGB call that uses the FGB selector in the standard pretranslator generates call code 134 billing records with the WATS module code appended. These calls are never screened, and a 134 call code billing record with a WATS module code (023) is always generated.

Calls generating call code 071 records (INWATS overflows) use INWATS overflow data from enhanced two-way WATS lines. This capability is only available when Bellcore format AMA is implemented.

NTXA16AA - Enhanced WATS Operation (POTS) (continued)

All calls terminating on an enhanced two-way WATS line generate an INWATS termination record if all necessary office parameters and table AMAOPTS tuples are enabled.

The following section shows examples of the records obtained using the AMADUMP utility.

Examples of records

Examples 1 to 8 show sample records obtained with the AMADUMP utility.

Example 1:

```
HEX ID:$col.AA  STRUCTURE CODE:$col.40028C  CALL CODE:$col.
009C
SENSORTYPE:036C SENSOR ID:$col.0000000C  REC OFFICE TYPE:$col.
036C
REC OFFICE ID:$col.0000000C  DATE:$col.90114C TIMING IND:$col.
00000C
STUDY IND:$col.0020000C ANSWER:$col.0C
SERVICE OBSERVED:$col.0C  OPER ACTION:$col.0C  SERVICE FEATURE:
$col.000C
ORIG NPA:$col.613C ORIG NUMBER:$col.6211926C  CONNECT TIME:
$col.0258522C
MODULE CODE:$col.023C WATS INDICATOR:$col.2C  WATS BAND OR
MBI:$col.008C
WATS ADMINISTRATION:$col.FFFFFF MODULE CODE:$col.000C
```

Example 2:

```
HEX ID:$col.AA  STRUCTURE CODE:$col.40028C  CALL CODE:$col.
033C
SENSORTYPE:036C SENSOR ID:$col.0000000C  REC OFFICE TYPE:
$col.036C
REC OFFICE ID:$col.0000000C  DATE:$col.90114C  TIMING IND:
$col.00000C
STUDY IND:$col.0200000C ANSWER:$col.0C
SERVICE OBSERVED:$col.0C  OPER ACTION:$col.0C  SERVICE
FEATURE:$col.000C
ORIG NPA:$col.613C ORIG NUMBER:$col.6211926C  CONNECT TIME:
$col.0307570C
MODULE CODE:$col.023C  WATS INDICATOR:$col.2C  WATS BAND OR
MBI:$col.008C
WATS ADMINISTRATION:$col.FFFFFF MODULE CODE:$col.000C
```

NTXA16AA - Enhanced WATS Operation (POTS) (continued)

Example 3:

HEX ID:$col.AA STRUCTURE CODE:$col.00501C CALL CODE:$col.
068C
SENSORTYPE:036C SENSOR ID:$col.0000000C REC OFFICE TYPE:
$col.036C

REC OFFICE ID:$col.0000000C DATE:$col.81207C ANSWER:$col.
0C
SERVICE FEATURE:$col.000C ORIG NPA:$col.613C
ORIG NUMBER:$col.6211926C OVERSEAS IND:$col.1C TERM NPA:
$col.00613C
TERM NUMBER:$col.8881234C CONNECT TIME:$col.1144092C
ELAPSED TIME:$col.000000068C WATS INDICATOR:$col.2C
WATS BAND OR MBI:$col.006C

Example 4:

HEX ID:$col.AA STRUCTURE CODE:$col.40500C CALL CODE:$col.
088C
SENSOR TYPE:036C SENSOR ID:$col.0000000C REC OFFICE TYPE:
$col.036C
REC OFFICE ID:$col.0000000C DATE:$col.90114C ANSWER:$col.
0C
SERVICE FEATURE:$col.000C ORIG NPA:$col.613C
ORIG NUMBER:$col.6211926C OVERSEAS IND:$col.0C
TERM NPA:$col.00613C TERM NUMBER:$col.5551234C
CONNECT TIME:$col.030933C ELAPSED TIME:$col.00000059C
MODULE CODE:$col.23C WATS INDICATOR:2C WATS BAND OR MBI:
$col.008C
WATS ADMINISTRATION:$col.FFFFFF MODULE CODE:$col.000C

Example 5:

HEX ID:$col.AA STRUCTURE CODE:$col.10629C CALL CODE:$col.
114C
SENSORTYPE:036C SENSOR ID:$col.0000000C REC OFFICE TYPE:$
col.036C
REC OFFICE ID:$col.0000000C DATE:$col.00000C TIMING IND:$
col.00000C
STUDY IND:$col.0200000C ANSWER:$col.1C SERVICE OBSERVED:$
col.0C
OPER ACTION:$col.0C SERVICE FEATURE:$col.000C ORIG NPA:$
col.613C
ORIG NUMBER:$col.6211926C OVERSEAS IND:$col.1C

TERM NPA:$col.00000C TERM NUMBER:$col.0000000C
ANSWER TIME:$col.0000000C ELAPSED TIME:$col.000000000C
IC/INC PREFIX:$col.02222C CC DATE:$col.81207C
CC TIME:$col.1132333C ELAPSED CC:$col.000000077C
IC/INC EVENT STATUS:$col.002C TRUNK GROUP NUMBER:$col.
00299C
ROUTING INDICATOR:$col.0C DIALING INDICATOR:$col.6C
ANI INDICATOR:$col.1C WATS INDICATOR:$col.2C
WATS BAND OR MBI:$col.006C TNN:$col.0000181C

Example 6:

HEX ID:$col.AA STRUCTURE CODE:$col.40625C CALL CODE:
$col.134C
SENSORTYPE:036C SENSOR ID:$col.0000000C REC OFFICE TYPE:
$col.036C
REC OFFICE ID:$col.0000000C DATE:$col.81207C
TIMING IND:$col.00000C STUDY IND:$col.0000030C ANSWER:
$col.0C
SERVICE OBSERVED:$col.0C OPER ACTION:$col.0C
SERVICE FEATURE:$col.000C ORIG NPA:$col.613C
ORIG NUMBER:$col.6211926C OVERSEAS IND:$col.1C
TERM NPA:$col.00000C TERM NUMBER:$col.0000000C
ANSWER TIME:$col.1119092C ELAPSED TIME:$col.000000054C
IC/INC PREFIX:$col.04882C CC DATE:$col.81207C
CC TIME:$col.1119092C ELAPSED CC:$col.000000054C
IC/INC EVENT STATUS:$col.010C TRUNK GROUP NUMBER:$col.
00230C
ROUTING INDICATOR:$col.1C DIALING INDICATOR:$col.6C
ANI INDICATOR:$col.0C MODULE CODE:$col.023C WATS
INDICATOR:$col.2C
WATS BAND OR MBI:$col.006C WATS ADMINISTRATION:$col.
FFFFFF
MODULE CODE:$col.000C

Example 7:
HEX ID:$col.AA STRUCTURE CODE:$col.40361C CALL CODE:$col.
141C SENSOR
TYPE:$col.036C SENSOR ID:$col.0619351C REC OFFICE TYPE:
$col.036C
REC OFFICE ID:$col.0619351C DATE:$col.90306C TIMING IND:
$col.00000C
STUDY IND:$col.0000000C ANSWER:$col.0C SERVICE OBSERVED:
$col.0C
OPER ACTION:$col.0C SERVICE FEATURE:$col.555C ORIG NPA:

NTXA16AA - Enhanced WATS Operation (POTS) (continued)

$col.619C
ORIG NUMBER:$col.5206010C DIALED NPA:$col.800C
DIALED NUMBER:$col.5467500C OVERSEAS IND:$col.0C TERM NPA:
$col.00619C
TERM NUMBER:$col.5202100C ANSWER TIME:$col.0958287C
ELAPSED TIME:$col.000000030C IC/INC PREFIX:$col.08881C CC
DATE:$col.90306C CC TIME:$col.0958266C ELAPSED CC:$col.
000000051C
IC/INC EVENT STATUS:$col.010C TRUNK GROUP NUMBER:$col.
00116C
ROUTING INDICATOR:$col.0C DIALING INDICATOR:$col.7C
ANI INDICATOR:$col.1C RAO NUMBER:$col.000C ORIGINATING LATA:
$col.123C
ALTERNATE BILLING NUMBER:$col.06195210100C MODULE CODE:$col.
023C
WATS INDICATOR:$col.2C WATS BAND OR MBI:$col.010C
WATS ADMINISTRATION:$col.FFFFFF MODULE CODE:$col.000C

Example 8:

HEX ID:$col.AA STRUCTURE CODE:$col.40365C CALL CODE:$col.
142C SENSOR
TYPE:$col.036C SENSOR ID:$col.0619351C REC OFFICE TYPE:$col.
036C
REC OFFICE ID:$col.0619351C DATE:$col.90306C TIMING IND:
$col.00000C
STUDY IND:$col.0000000C ANSWER:$col.0C SERVICE OBSERVED:
$col.0C
OPER ACTION:$col.0C SERVICE FEATURE:$col.555C
ORIG NPA:$col.619C ORIG NUMBER:$col.5206010C DIALED NPA:
$col.800C
DIALED NUMBER:$col.5467500C OVERSEAS IND:$col.0C TERM NPA:
$col.00619C
TERM NUMBER:$col.5202100C ANSWER TIME:$col.0912000C
ELAPSED TIME:$col.000000055C RAO NUMBER:$col.000C
ORIGINATING LATA:$col.000C ALTERNATE BILLING NUMBER:$col.
06195210100C
MODULE CODE:$col.023C WATS INDICATOR:$col.2C
WATS BAND OR MBI:$col.010C WATS ADMINISTRATION:$col.FFFFFF
MODULE CODE:$col.000C

NTXA16AA - Enhanced WATS Operation (POTS) (continued)

Datafilling office parameters

The following table lists the office parameter used by this feature package.

Office parameters used by NTXA16AA - Enhanced WATS Operation (POTS)

Table name **Parameter**	**Explanation and action**
OFCENG INWATS_LOCAL_TERMINATION	This office parameter determines if local calls are allowed to terminate on an enhanced two-way WATS line.
OFCENG INWATS_ON_AMA	Set this office parameter to Y to generate Bellcore format INWATS termination billing records. Note that the INWATS tuple in table AMAOPTS must be set to ON.

Datafill sequence

The following tables require datafill to implement this feature package. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for NTXA16AA - Enhanced WATS Operation (POTS)

Table	Form	NTP	Purpose of table
LINEATTR	2208A-B	297-2101-451	Table LINEATTR (line attribute) defines the line attribute indexes that are applicable to an office. Line attributes are actually assigned to regular lines in table LENLINES, and to MDC lines and attendant consoles in table IBNXLA.
WATSBAND	2477A-B	297-2101-451	Table WATSBAND (WATS band) is designed to allow certain patterns of digits to be grouped together into entities called bands. This table also allows carriers to define their own unique bands.
BANDSETS	2476A-B	297-2101-451	Table BANDSETS (band sets) allows bands to be grouped together to form allowable calling areas.
LENFEAT	2210A-B	297-2101-451	Table LENFEAT (line feature) lists the features assigned to a specific line in table LENLINES.

- continued -

NTXA16AA - Enhanced WATS Operation (POTS) (continued)

Datafill tables required for NTXA16AA - Enhanced WATS Operation (POTS) (continued)			
Table	**Form**	**NTP**	**Purpose of table**
OCCINFO	2355A-B	297-1001-451	Table OCCINFO (other common carrier information) defines the attributes for the carriers serving a DMS switch and screens calls for carrier compatibility.
CXGRP	2160A-B	297-2101-451	Table CXGRP (customer group options) is required in local or combined local/toll switching units to define the options associated with a PX digital trunk group.
End			

Datafilling table LINEATTR

Table LINEATTR defines the line attribute indexes that are applicable to an office. Line attributes are assigned to regular lines in table LENLINES and to MDC stations and attendant consoles in table IBNXLA. The following procedure shows the datafill for table LINEATTR. See *Local Customer Data Schema*, 297-2101-451, for a detailed description of the table.

Datafilling table LINEATTR		
Field	**Subfield**	**Explanation and action**
LAIDX		*Line attribute index* Enter the line attribute index (0 to 1023).
LCC		*Line class code* Enter the line class code (EOW or ETW) assigned to the line attribute index. The LCC of an existing tuple cannot be changed.

Datafill example for table LINEATTR

The following example shows sample datafill for table LINEATTR.

Datafill example for table LINEATTR

Example of a MAP display:

```
LAIDX LCC
      CHGCLSS COST SCRNCL LTG STS PRTNM LCANAME LCABILL
                                        ZEROMPOS HOT TRAFSNO
MRSA SFC  LATANM          MDI          IXNAME DGCLNAME FANIDIGS
          RESINF
-------------------------------------------------------------------
180   EOW
        WAT0   NT   NSCR   0  919  EWAT    NLCA      N
                                       TOPS   N   10
NIL NILSFC LATA1           0          NIL        NIL     00
                 N
```

Datafilling table WATSBAND

Table WATSBAND is designed to allow certain patterns of digits to be grouped together into entities called bands. These bands define geographical areas which generally form concentric circles around the local area. This table also allows carriers to define their own unique bands.

The following procedure shows the datafill for table WATSBAND. This procedure contains only those fields that apply to this package. See *Local Customer Data Schema*, 297-2101-451, for a description of the other fields.

Datafilling table WATSBAND

Field	Subfield	Explanation and action
SVGNPA		*Serving numbering plan area* Enter the three-digit code of the home NPA to which the WATS is provided.
WIC		*WATS interexchange carrier* Enter the WATS carrier that can be used with this band. Enter DEFAULT, a reserved carrier name, for the carriers which assign the same band to a digit pattern.
DIGITS		*Digits* Enter the digits that are associated with the band. This field is a vector of up to 18 digits. Enter a dollar sign to indicate the end of the vector.
BAND		*Band* Enter the band number (0 to 126) assigned to the digits.

NTXA16AA - Enhanced WATS Operation (POTS) (continued)

Datafill example for table WATSBAND

The following example shows sample datafill for table WATSBAND.

Datafill example for table WATSBAND

Example of a MAP display:

		WATSCODE	BAND
497	CARRIER_A	604	6
497	DEFAULT	204	5
497	DEFAULT	604	3

Datafilling table BANDSETS

Table BANDSETS allows bands to be grouped together to form allowable calling areas. These bands, defined in table WATSBAND, are combined into groups which are assigned to customer-defined symbolic keys. The symbolic keys are then assigned to WATS access lines, much like a line attribute index. This BANDSET key defines the set of bands a given line can dial.

The following procedure shows the datafill for table BANDSETS. This procedure contains only those fields that apply to this package. See *Local Customer Data Schema*, 297-2101-451, for a description of the other fields.

Datafilling table BANDSETS

Field	Subfield	Explanation and action
BANDSET		*Bandset* Enter the unique key which defines the allowable calling area. The key can be up to eight characters.
BANDS		*Bands* Enter the set of bands (0 to 126) that are grouped together as a vector. This vector determines the WATS calling area assigned to the key. Enter a dollar sign to indicate the end of the vector.

Datafill example for table BANDSETS

The following example shows sample datafill for table BANDSETS. In the first tuple, bandset INTRASTA consists of bands 0, 8, and 9. In the second tuple, bandset EXTWATS consists of bands 0, 1 ,2 ,3, 4, and 17.

Datafill example for table BANDSETS

Example of a MAP display:

```
 BANDSET                                                BANDS
______________________________________________________________
INTRASTA                                              (0 8 9)$

EXTWATS                                        (0 1 2 3 4 17)$
```

Datafilling table LENFEAT

Table LENFEAT lists the features that are assigned to a specific line in table LENLINES. The feature applicable to this package is EWAL. The following procedure shows the datafill for table LENFEAT. This procedure contains only those fields that apply to this package. See *Local Customer Data Schema*, 297-2101-451, for a description of the other fields.

Datafilling table LENFEAT

Field	Subfield	Explanation and action
DF		*Feature* Enter EWAL, the feature assigned to the line.
DATA		*Data* This field consists of the following subfields.
	DF	*Feature* Enter EWAL, the feature assigned to the line.
	TREAT	*Treatment* Enter the unauthorized OUTWATS call treatment (UNOW).
	INTRALAT	*Intra-LATA* Enter Y if the customer group allows intra-LATA calls. Otherwise, enter N.
	SAC	*Service access code* Enter Y if the customer group allows SAC calls. Otherwise, enter N.
	BAND	*Band* Enter the band (0 to 126) assigned to the facility to be used in the billing record.

-continued-

NTXA16AA - Enhanced WATS Operation (POTS) (continued)

Datafilling table LENFEAT (continued)

Field	Subfield	Explanation and action
	WICLIST	*WATS interexchange carrier list* This field is a vector consisting of subfields WIC and BANDSET. Field BANDSET must be paired with a carrier and up to five pairs can be entered, the first of which is the primary WIC. Enter a dollar sign to indicate the end of the vector.
	WIC	*WATS interexchange carrier* Enter the WATS interexchange carrier to be used with this facility.
	BANDSET	*Bandset* Enter the allowable calling area defined in table BANDSETS.
		End

Datafill example for table LENFEAT

The following example shows sample datafill for table LENFEAT. In this example, the line HOST 00 0 00 26 is denied access to carriers CARR1 and CARR2.

Datafill example for table LENFEAT

Example of a MAP display:

```
             LEN PTY       DF                                      DATA
________________________________________________________________________
 HOST 00 0 00 26   S      EWAL  EWAL UNOW  Y Y 009
                          (CARR1 INTRASTA) (CARR 2 INTRASTA)   $
```

Datafilling table OCCINFO

Table OCCINFO defines the attributes for carriers serving the end office and screens calls for carrier compatibility. For example, table OCCINFO allows international traffic to be sent only to carriers capable of handling such traffic.

The following procedure shows the datafill for table OCCINFO. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

NTXA16AA - Enhanced WATS Operation (POTS) (continued)

Datafilling table OCCINFO

Field	Subfield	Explanation and action
SCRNWATS		*Enhanced WATS screening* Enter Y to allow band screening on digits dialed from an enhanced WATS line. Otherwise, enter N.

Datafill example for table OCCINFO

The following example shows sample datafill for table OCCINFO.

Datafill example for table OCCINFO

Example of a MAP display:

```
CARRNAME CARRNUM ACCESS ORIGCARR INTER INTNTL INTRA ANI FANI
ONISCRN AD1 OVERLAP INTERS INTRAS TERMREC OCCSEPNO OPSIG PICIND
NOA950 INCCPN DTMFIND OPSERV CACBLOCK CTDOA CMCMON SCRNWATS
CRMCRA ATPINCL INTRAOPR
```

```
 C111    0111   EAP     Y      Y      Y     N   Y    N
N     Y      Y     Y      Y    LONG       0    FGRPC    Y
 N      N     N       N       N      N      N      N
  Y    N        N
 C222    0222   EAP     Y      Y      N     Y   N    N
N    N       Y     Y      N    SHORT      0    FGRPC    N
 N    N       N       N       N      N      N      N
  Y    N        N
```

Datafilling table CXGRP

Table CXGRP is required in local or combined local/toll switching units to define the options associated with PX trunks. The following procedure shows the datafill for table CXGRP. This procedure contains only those fields that apply to this package. See *Local Customer Data Schema*, 297-2101-451, for a description of the other fields.

NTXA16AA - Enhanced WATS Operation (POTS) (continued)

Datafilling table CXGRP Field	Subfield	Explanation and action
EWATS		*Enhanced WATS* Enter Y to enable enhanced WATS for this customer group. Otherwise, enter N.
EWATTYPE		*Enhanced WATS type* If the EWATS field is set to Y, enter EOWATS for enhanced outward WATS or ETWATS for enhanced two-way WATS.
TREAT		*Treatment* If the EWATS field is set to Y, enter the unauthorized OUTWATS call treatment (for example, UNOW).
INTRALAT		*Intra-LATA* If the EWATS field is set to Y, enter Y if the customer group allows intra-LATA calls. Otherwise, enter N.
SAC		*Service access code* If the EWATS field is set to Y, enter Y if the customer group allows SAC calls. Otherwise, enter N.
BAND		*Band* If the EWATS field is set to Y, enter the band (0 to 126) assigned to the facility to be used in the billing record.
LATANM		*LATA name* If the EWATS field is set to Y, enter the LATA name that is required for the Equal Access translations.
WICINFO		*WATS interexchange carrier information* This field is a vector consisting of subfields WIC and BANDSET. Field BANDSET must be paired with a carrier and up to five pairs can be entered, the first of which is the primary WIC. Enter a dollar sign to indicate the end of the vector.
	WIC	*WATS interexchange carrier* If the EWATS field is set to Y, enter the WATS interexchange carrier to be used with this facility.
	BANDSET	*Bandset* If the EWATS field is set to Y, enter the allowable calling area defined in table BANDSETS.

-continued-

NTXA16AA - Enhanced WATS Operation (POTS) (continued)

Datafilling table CXGRP (continued)

Field	Subfield	Explanation and action
PXOPTION		*Customer group options* Enter up to 12 options per group as follows: ATC automatic time and charge CLI calling line identification CPH called party hold FANI flexible automatic number identification FNT free number terminating HOT hotel/motel LCDR local call detail recording LPIC local PIC ONI operator number identification RMR answer supervision local calls RMT answer supervision toll calls TDN toll denied TDV toll diverted WATS WATS service
TYPEWATS		*Type of WATS* If PXOPTION is WATS, enter the required type of WATS.
TREAT		*Treatment* If type of WATS is TWWATS or OUTWATS, enter the unauthorized OUTWATS call treatment (for example, UNOW).
OWATZONE		*OUTWATS zone* If type of WATS is TWWATS or OUTWATS, enter the zone assigned to this WATS trunk group.
		End

Datafill example for table CXGRP

The following example shows sample datafill for table CXGRP.

NTXA16AA - Enhanced WATS Operation (POTS) (continued)

Datafill example for table CXGRP

Example of a MAP display:

```
 CUSTKEY
              SPB
                                    BILLNO          CTD
                                                  EWATS
  EWATTYPE    TREAT    INTRALAT  SAC    BAND    LATANM
                                                WICINFO
                                               PXOPTION
-------------------------------------------------------
100
              Y
                              5058881234             N
                                                     Y
   EAWATS   UNOW          Y       Y    9  LOCAL_LATA
      (CARRIER_A INTRASTA) (CARRIER_B INTERSTA) $
                            (LPIC CARRA) (TDV)  $
```

Translation verification tools

TRAVER

The following TRAVER example shows how call code 009 (DA 411) record is generated.

A 411 call can route to DA through tables STDPRT and AMAPRT. In this example, DN 6211926 dials 411. Table LINEATTR is referenced from table LENLINES by the line attribute index. Table STDPRTCT is the first table indexed by the received leading digits (411), since the originating line attribute contains the index into table STDPRTCT. The tuple in table STDPRT contains the route list that 411 calls take. In this example, 411 calls are to route to trunk group OTDP1. Table AMAPRT is indexed after sutable STDPRTCT.STDPRT using the first pretranslator name specified as the index into table STDPRTCT. As noted previously, band screening is not in effect for N11 calls.

In the TRAVER command shown in this example

- L indicates the originator is a line
- 6211926 is the DN originating the call
- 411 is the DN receiving the call
- B indicates that a report on both table entries and results is desired

NTXA16AA - Enhanced WATS Operation (POTS) (continued)

TRAVER output example for NTXA16AA - Enhanced WATS Operation (POTS)

Line	Output
	>TRAVER L 6211926 411 B
1	TABLE LINEATTR
2	180 EOW WAT0 NT NSCR 0 613 EWAT NLCA TOPS N 10 NIL NILSFC LATA1 0 NIL NIL 00 N
3	TABLE DNATTRS
4	TUPLE NOT FOUND
5	TABLE DNGRPS
6	TUPLE NOT FOUND
7	TABLE STDPRTCT
8	EWAT (1) (1)
9	. SUBTABLE STDPRT
10	. 411 411 T NP 0 OFRT 90 3 3 NONE
11	. .TABLE OFRT
12	. . 90 S D OTDP1
13	. . EXIT TABLE OFRT
14	. SUBTABLE AMAPRT
15	. 411 411 DA411 N
16	Band screening is not done for N11 calls.
17	
18	+++ TRAVER: SUCCESSFUL CALL TRACE +++
19	
20	DIGIT TRANSLATION ROUTES
21	
22	1 OTDP1 411 ST
23	
24	TREATMENT ROUTES. TREATMENT IS: GNCT
25	1 T120
26	
27	+++ TRAVER: SUCCESSFUL CALL TRACE +++

Service orders

Two new LCCs, EOW and ETW, are now supported in the POTS environment. The following table shows the SERVORD prompts used to add a WATS line. Only the fields that apply to this feature package are described. For more information about service orders, see *SERVORD Service Order and Query System Reference Manual*, 297-2101-808, and *Integrated Services Digital Network Service Orders for ISDN Terminals Reference Manual*, 297-2401-310.

Service order prompts

The following table shows the service order prompts used to add a WATS line.

NTXA16AA - Enhanced WATS Operation (POTS) (continued)

Service order prompts to add a WATS line

Prompt	Valid input	Explanation
LCC	EOW or ETW	Enter EOW for an enhanced OUTWATS line. Enter ETW for an enhanced two-way WATS line.
INTRALAT	Y/N	Enter Y if the customer group allows intra-LATA calls. Otherwise, enter N.
SAC	Y/N	Enter Y if the customer group allows SAC calls. Otherwise, enter N.
BAND		Enter the band assigned to the facility to be used in the billing record.
WICLIST	0 to 126	This field is a vector consisting of subfields WIC and BANDSET. These subfields are prompted only when an invalid value is entered. Subfield BANDSET must be paired with a carrier and up to five pairs can be entered, the first of which is the primary WIC. Enter a dollar sign to indicate the end of the vector.
WIC	Carrier name defined in table OCCINFO	Enter the WATS interexchange carrier to be used with this facility.
BANDSET	8 chars	Enter the allowable calling area defined in table BANDSETS.

NTXA16AA - Enhanced WATS Operation (POTS) (end)

The following example shows the NEW command when it is used to add an enhanced OUTWATS line.

Adding LCC EOW with SERVORD

Input and response

*Input in **Prompt** mode*

```
>NEW
  SONUMBER:  NOW 93 09 10 AM
>$
  DN:
>6211899
  LCC:
>EOW
  INTRALAT:
>N
  SAC:
>Y
  BAND:
>9
  WICLIST:
>NTI
  BANDSET:
>INTRAST
  WICLIST:
>$
  LATANAME:
>LATA1
  LTG:
>0
  LEN:
>0 0 19 26
  OPTION
>$
```

*Input in **No-prompt** mode*

```
>NEW $ 6211899 EOW N Y 9 NTI INTRAST $ LATA1 0 0 0 19 26 $
```

NTXF58AA - POTS Intra-LATA PIC in EAEO

Package name

POTS Intra-LATA PIC in EAEO

Package number

NTXF58AA

Feature numbers

The NTXF58AA feature package consists of the following feature:

NTXF58AA feature number and name	
Feature number	**Feature name**
AF2332	Intra-LATA PIC for POTS

BCS applicability

BCS33 and up

Feature package prerequisites

This package requires the following feature packages:

Feature package prerequisites	
Feature package	**Feature package name**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX042AA	Local Automatic Message Accounting
NTX072AA	International Direct Distance Dialing
NTX186AA or NTX186AB	Equal Access End Office
NTX901AA	Local Features 1
NTX711AA or NTX711AB	Equal Access End Office Enhancements

NTXF58AA - POTS Intra-LATA PIC in EAEO (continued)

Description

By providing intra-LATA carrier presubscription, screening, and routing capabilities, the NTXF58AA - POTS Intra-LATA PIC in EAEO feature package allows EAEO subscribers to choose a carrier to provide intra-LATA service, like they now choose a PIC. If no intra-LATA carrier is chosen, the intra-LATA calls are handled in the usual way, by the local operating company.

Theory of operation

This feature package implements intra-LATA carrier presubscription for POTS and coin lines. A new option, LPIC, is added to table LENFEAT to allow the subscriber to specify a primary intra-LATA carrier (LPIC). The LPIC can be the same as the PIC.

Once a call has been determined to be an intra-LATA toll call, the calling DN line options are examined to see if the subscriber has chosen an LPIC. If so, the call routes to that carrier. If the subscriber has not selected an LPIC, the call is handled by the local operating company.

Zero minus calls are handled differently. Prior to this feature package, these calls were routed to the local operating company operator for completion. These calls can now be routed to an LPIC. Office parameter ZERO_MINUS_TO_CARRIER, currently used for LEAS applications only, can also be used for Equal Access and MDC applications. Also, field INTRAOPR is added to table OCCINFO to determine if a carrier can handle 0- LPIC calls.

Package limitations and restrictions

This feature package affects only calls from POTS and coin lines. Intra-LATA PIC for MDC lines capability is provided by feature package NTXF69AA - MDC Intra-LATA PIC in EAEO.

Feature interactions

When the ACCESS field in table OCCINFO is set to OTC, the local operating company acts as the carrier for intra-LATA calls. Calls completed by this carrier produce a 006 record instead of a 110 record.

Activation/deactivation by the end user

The user implements the intra-LATA PIC capability by adding option LPIC with SERVORD.

Billing

Intra-LATA calls using the LPIC produce a standard 110 record. Standard 110 records are also produced when a subscriber accesses the carrier with the EAP prefix.

NTXF58AA - POTS Intra-LATA PIC in EAEO (continued)

Datafilling office parameters

Following are the office parameters for this package.

Office parameters used by POTS Intra-LATA PIC in EAEO

Table name **Parameter**	**Explanation and action**
OFCENG ZERO_MINUS_TO_CARRIER	Enter Y if 0- calls are allowed to route to a carrier on an office basis. Otherwise, enter N.

Datafill sequence

The following tables require datafill to implement this feature package. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for POTS Intra-LATA PIC in EAEO

Table	Form	NTP	Purpose of table
OCCINFO	2355A-B	297-1001-451	Table OCCINFO (other common carrier information) defines the attributes for the carriers serving a DMS switch and screens calls for carrier compatibility.
LENFEAT	2210A-B	297-2101-451	Table LENFEAT (line feature) lists the features assigned to a specific line in table LENLINES.

Datafilling table OCCINFO

Table OCCINFO defines the attributes for carriers serving the end office and screens calls for carrier compatibility. For example, table OCCINFO allows international traffic to be sent only to carriers capable of handling such traffic.

The following procedure shows the datafill for table OCCINFO. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema,* 297-1001-451, for a description of the other fields.

Datafilling table OCCINFO

Field	Subfield	Explanation and action
INTRAOPR		*Intra-LATA operator* Enter Y if the carrier is capable of handling 0- intra-LATA operator calls. Otherwise, enter N, the default value.

NTXF58AA - POTS Intra-LATA PIC in EAEO (continued)

Datafill example for table OCCINFO

The following example shows sample datafill for table OCCINFO. In this example, the INTRAOPR field is set to Y. If office parameter ZERO_MINUS_TO_CARRIER in table OFCENG is set to Y, 0- calls are routed to the LPIC.

Datafill example for table OCCINFO

Example of a MAP display:

```
CARRNAME CARRNUM ACCESS ORIGCARR INTER INTNTL INTRA ANI FANI
ONISCRN AD1 OVERLAP INTERS INTRAS TERMREC OCCSEPNO OPSIG PICIND
NOA950 INCCPN DTMFIND OPSERV CACBLOCK CTDOA CMCMON SCRNWATS
CRMCRA ATPINCL INTRAOPR
```

```
 C111    0111   EAP     Y      Y      Y     N   Y    N
N     Y       Y     Y       Y    LONG       0    FGRPC    Y
 N       N     N        N       N      N      N       N
  Y    N         N
 C222    0222   EAP     Y      Y      N     Y   N    N
N    N        Y     Y       N    SHORT      0    FGRPC    N
 N    N        N        N       N      N      N       N
  Y    N         N
```

Datafilling table LENFEAT

Table LENFEAT lists the features that are assigned to a specific line in table LENLINES. This feature package implements the LPIC option for Equal Access lines. This option is assigned in table LENFEAT.

The following procedure shows the datafill for table LENFEAT. This procedure contains only those fields that apply to this package. See *Local Customer Data Schema*, 297-2101-451, for a description of the other fields.

Datafilling table LENFEAT

Field	Subfield	Explanation and action
DF		*Feature* Enter LPIC, the feature assigned to the line.
DATA		*Data* This field consists of the following subfields.
	DF	*Feature* Enter LPIC, the feature assigned to the line.

Datafilling table LENFEAT Field	Subfield	Explanation and action
	CARRIER	*Carrier name* Enter the name of the carrier assigned as the LPIC. The name must be datafilled in table OCCNAME.
	CHOICE	*Choice* Enter Y if the subscriber is allowed to dial an EAP prefix to choose a carrier manually. Otherwise, enter N.

Datafill example for table LENFEAT

The following example shows sample datafill for table LENFEAT. In this example, carrier CAR1 is defined as the LPIC for this line.

Datafill example for table LENFEAT

Example of a MAP display:

```
 LEN                PTY     DF             DATA
HOST 00 0 00 27     S     LPIC        LPIC CAR1 Y
```

Translation verification tools

TRAVER

The following example shows the output from TRAVER when it is used to examine the translation and routing of a call using an LPIC. For more information about TRAVER, see *Command Reference Manual*, 297-1001-509.

In the TRAVER command shown in this example

- L indicates the originator is a line
- 6211235 is the DN originating the call
- 2281234 is the DN receiving the call
- B indicates that a report on both table entries and results is desired

NTXF58AA - POTS Intra-LATA PIC in EAEO (continued)

TRAVER output example for NTXF58AA - POTS Intra-LATA PIC in EAEO

Line	Output
	>TRAVER L 6211235 2281234 B
1	TABLE LINEATTR
2	0 1FR NONE NE FR01 0 613 P621 L613 TSPS N 10 NIL NILSFC LATA1 0 NIL NIL 00 N
3	TABLE DNATTRS
4	TUPLE NOT FOUND
5	TABLE DNGRPS
6	TUPLE NOT FOUND
7	TABLE STDPRTCT
8	P621 (1) (0)
9	. SUBTABLE STDPRT
10	. KEY NOT FOUND
11	. DEFAULT VALUE IS: N NP 0 NA
12	. SUBTABLE AMAPRT
13	. KEY NOT FOUND
14	. DEFAULT VALUE IS: NONE OVRNONE N
15	TABLE HNPACONT
16	613 128 2 (36) (1) (0)
17	. SUBTABLE HNPACODE
18	. 228 228 HRTE 128
19	. SUBTABLE RTEREF
20	. 128 S D EATANDEMOG
21	. EXIT TABLE RTEREF
22	EXIT TABLE HNPACONT
23	TABLE LCASCRCN
24	613 L613 (27) OPTL N
25	. SUBTABLE LCASCR
26	. TUPLE NOT FOUND. DEFAULT IS NON-LOCAL
27	TABLE PFXTREAT
28	OPTL NP N DD UNDT
29	TABLE CLSVSCRC
30	KEY NOT FOUND
31	DEFAULT IS TO LEAVE XLA RESULT UNCHANGED
32	TABLE LENFEAT
33	HOST 00 0 00 01 S LPIC LPIC CAR1
34	TABLE LENFEAT
35	HOST 00 0 00 01 S PIC PIC CAR2 Y
36	TABLE LATAXLA
37	LATA1 613228 INTRA INTER STD
38	TABLE OCCINFO
39	CAR1 123 TRANS Y Y Y Y N N Y Y Y Y LONG 0 FGRPC N N N N N N N N N Y Y

-continued-

NTXF58AA - POTS Intra-LATA PIC in EAEO (continued)

TRAVER output example for NTXF58AA - POTS Intra-LATA PIC in EAEO (continued)

Line	Output
40	TABLE EASAC
41	TUPLE NOT FOUND
42	TABLE STDPRTCT
43	P621 (1) (0)
44	. STDPRTCT STDPRT
45	. 10123 10123 EA DD 5 P CAR1 CAR Y OFRT 889 6 20 Y
46	. . TABLE OFRT
47	. . 889 CND EA INTNL SK 2
48	. . S D OGEACAR1
49	. . CND ALWAYS SK 1
50	. . N D OGEACAR1 15 D121 N
51	. . EXIT TABLE OFRT
52	. TABLE STDPRTCT
53	. CAR1 (1) (0) . . SUBTABLE STDPRT
54	. . 2 9 EA DD 0 T NA CAR N
55	+++ TRAVER: SUCCESSFUL CALL TRACE +++
56	
57	DIGIT TRANSLATION ROUTES
58	1 OGEACAR1 2281234 ST
59	TREATMENT ROUTES. TREATMENT IS: GNCT
60	1 T120
61	+++ TRAVER SUCCESSFUL CALL TRACE +++

End

Service orders

A new SERVORD option, LPIC, is now supported. This option can be added to or deleted from standard POTS and coin lines through the use of the ADO, DEO, CHF, and NEW commands. A new prompt, CARRIER, prompts for the name of the carrier selected as LPIC when LPIC is added to a line. The name of the carrier specified must be datafilled in table OCCNAME.

Service order prompts

The following table shows the SERVORD prompts used to add LPIC to a line and to specify the name of the carrier selected as LPIC. For more information about service orders, see *SERVORD Service Order and Query System Reference Manual*, 297-2101-808, and *Integrated Services Digital Network Service Orders for ISDN Terminals Reference Manual*, 297-2401-310.

NTXF58AA - POTS Intra-LATA PIC in EAEO (end)

Service order prompts for option LPIC		
Prompt	**Valid input**	**Explanation**
DN_OR_ LEN	Valid DN or LEN	Enter the seven-digit DN or the LEN.
OPTION	LPIC	Enter LPIC to assign the option.
CARRIER	Carrier name as datafilled in table OCCNAME	Enter the carrier assigned as the LPIC.

Example service orders

In the following example, line HOST 00 0 00 01 has the carrier CARR1 defined as the LPIC.

Example of service orders

Input and response

*Input in **Prompt** mode*

>ADO
SONUMBER: NOW 86 1 2 PM
>$
DN_OR_LEN:
>HOST 00 0 00 01
OPTION:
>LPIC
CARRIER:
>CARR1
OPTION:
>$

*Input in **No-prompt** mode*

>ADO $ HOST 00 0 00 01 LPIC CARR1 $

NTXF69AA - MDC Intra-LATA PIC in EAEO

Package name

MDC Intra-LATA PIC in EAEO

Package number

NTXF69AA

Feature numbers

The NTXF69AA feature package consists of the following feature:

NTXF69AA feature number and name	
Feature number	**Feature name**
AF2333	Intra-LATA PIC for MDC

BCS applicability

BCS33 and up

Feature package prerequisites

This package requires the following feature packages:

Feature package prerequisites	
Feature package	**Feature package name**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX042AA	Local Automatic Message Accounting
NTX072AA	International Direct Distance Dialing
NTX094AA	Digital Subscriber Services
NTX100AA	Integrated Business Networks - Basic
NTX159AA	Bellcore LAMA Format
NTX901AA	Local Features I
NTX186AA or NTX186AB	Equal Access End Office

NTXF69AA - MDC Intra-LATA PIC in EAEO (continued)

Description

The NTXF69AA - MDC Intra-LATA PIC in EAEO feature package provides intra-LATA carrier presubscription, screening, and routing capabilities for MDC stations, ISDN subscribers, and PX trunks at an EAEO. With this feature package, subscribers can choose a primary carrier for intra-LATA service. Prior to this feature package, the local operating companies provided intra-LATA service to its subscribers.

Theory of operation

Currently, MDC stations and PX trunks can choose a PIC to provide inter-LATA service. Three types of PICs are assigned to MDC stations:

- a customer group PIC (GPIC) assigned to the group translator
- a network class of service (NCOS) PIC (NPIC) assigned to the station NCOS preliminary translator
- a PIC assigned to the MDC station through SERVORD

The default carrier is the GPIC. An NPIC overrides the GPIC. When the SERVORD system is used to assign a PIC to a single MDC station, this PIC overrides the NPIC and the GPIC.

The following example shows how the different PICs are used. A customer wants to assign a PIC used by the whole organization; this GPIC is assigned in the customer group translator. The customer then uses the NPIC to assign a PIC common to all managers. Finally, some people in the organization need an individual PIC. This PIC is assigned though the SERVORD system.

A PIC can be assigned to the following MDC stations:

- data units
- Meridian business sets
- standard MDC 500/2500 sets
- attendant console

  Note: A PIC cannot be assigned to an attendant console through SERVORD. The attendant console can use only the NCOS or customer group PIC.

This feature package allows the EAEO to assign three types of primary intra-LATA carriers (LPIC), which correspond to the three PICs described in this section. They are

- a customer group LPIC assigned to the group translator
- a NCOS LPIC assigned to the station NCOS preliminary translator
- an LPIC assigned to the MDC station through SERVORD

If a station cannot choose a PIC, it cannot choose an LPIC. If the PIC option has not been specified, field CHOICE in table IBNXLA defaults to Y. The subscriber can then dial the EAP prefix to manually select a carrier.

The DMS-100 switch has two levels of MDC translators, the preliminary and customer groups. If the digits dialed by the subscriber are not in the preliminary translator, the customer group translator is searched. An LPIC can be assigned to each of these translators in table IBNXLA. Note that the EA option must be datafilled in table IBNXLA before option LPIC can be assigned.

When an MDC call enters the POTS environment, POTS Equal Access translations are used.

Package limitations and restrictions

The following limitations and restrictions apply to LPIC:

- LPIC is not supported for P2 trunks.
- LPICs per bearer capability and call type for ISDN are not supported.
- LPIC cannot be assigned to an attendant console through SERVORD; it can be assigned only through the preliminary or subscriber group translator.
- The preliminary NCOS or subscriber group translator in table IBNXLA must have field TRSEL set to NET, field NETTYPE set to GEN, and field OPTIONS set to EA for Equal Access translations to be performed.
- LPIC cannot be assigned in table CXGRP unless the EA option is assigned to the PX trunk groups that point to that CXGRP entry.

Feature interactions

This package interacts with the features described in the following paragraphs.

- Carrier Toll Denied (CTD)
  An MDC station can be denied toll access to the carrier used to translate the call if that carrier appears in the CTD list for that MDC station. If the TOLL option with toll denied (TDN) or toll diversion (TDV) restriction is present on the preliminary or customer group translator, CTD is overridden on any MDC stations in the group.
- Direct Inward System Access (DISA)
  If a user dials in on a DISA line, the LPIC assigned to that group carries the call.
- Residential Enhanced Services (RES)
  MDC LPIC can be used as an option on RES lines.

NTXF69AA - MDC Intra-LATA PIC in EAEO (continued)

Activation/deactivation by the end user

The user implements the intra-LATA PIC capability by adding option LPIC with SERVORD.

Billing

No changes are made to billing. A standard 110 record is produced for all intra-LATA calls regardless of if the subscriber uses the LPIC. This record is the same one produced for inter-LATA calls that originated in the end office. The AMA billing record presubscription dialing indicator, which indicates whether the subscriber has presubscribed to the carrier, relates to the status of the intra-LATA carrier. For intra-LATA calls completed by the local operating company, a 006 record is still produced.

Datafilling office parameters

This package does not affect office parameters.

Datafill sequence

The following tables require datafill to implement this feature package. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for MDC - Intra-LATA PIC in EAEO

Table	Form	NTP	Purpose of table
IBNFEAT	2217A-B	297-2001-451	Table IBNFEAT (IBN line feature) assigns options to individual MDC stations.
KSETFEAT	2272A-B	297-2001-451	Table KSETFEAT (business set and data-unit feature) assigns options to an MBS.
VIRTGRPS	2245A-B	297-2001-451	Table VIRTGRPS (virtual facility groups) assigns options to VFGs.
VFGDATA	2220A-B	297-2001-451	Table VFGDATA (virtual facility group data) contains tuples with information about one end of a VFG. Each end of a VFG can be an MDC, VFG, or POTS VFG. It can be either incoming or outgoing.
CXGRP	2160A-B	297-2101-451	Table CXGRP (customer group options) is required in local or combined local/toll switching units to define the options associated with a PX digital trunk group.

-continued-

NTXF69AA - MDC Intra-LATA PIC in EAEO (continued)

Datafill tables required for MDC - Intra-LATA PIC in EAEO (continued)

Table	Form	NTP	Purpose of table
IBNXLA	2228A-C	297-2001-451	Table IBNXLA stores the data required for the translation of calls from an MDC station.
OCCINFO	2355A-B	297-1001-451	Table OCCINFO (other common carrier information) defines the attributes for the carriers serving a DMS switch and screens calls for carrier compatibility.

End

Datafilling table IBNFEAT

Table IBNFEAT assigns options to individual MDC stations. Option LPIC can be assigned to an MDC station with this table. The following procedure shows the datafill for table IBNFEAT. This procedure contains only those fields that apply to this package. See *Meridian Digital Centrex Customer Data Schema*, 297-2001-451, for a description of the other fields.

Datafilling table IBNFEAT

Field	Subfield	Explanation and action
DF		*Feature* Enter LPIC, the feature assigned to the line.
DATA		*Data* This field consists of the following subfields.
	DF	*Feature* Enter LPIC, the feature assigned to the line.
	CARRIER	*Carrier name* Enter the name of the carrier assigned as the LPIC. The name must be datafilled in table OCCNAME.
	CHOICE	*Choice* Enter Y if the subscriber is allowed to dial an EAP prefix to choose a carrier manually. Otherwise, enter N.

Datafill example for table IBNFEAT

The following example shows sample datafill for table IBNFEAT. In this example, carrier CARRA is defined as the LPIC for this MDC station. The subscriber can also dial an EAP prefix to manually choose a carrier.

NTXF69AA - MDC Intra-LATA PIC in EAEO (continued)

Datafill example for table IBNFEAT

Example of a MAP display:

```
 LEN    DNNO          DF     FEATURE
                                                    DATA
-------------------------------------------------------------
HOST 00 1 18 08    LPIC     LPIC
                                                 CARRA   Y
```

Datafilling table KSETFEAT

Table KSETFEAT contains the options assigned to an MBS. Option LPIC is assigned to an MBS in this table. The following procedure shows the datafill for table KSETFEAT. This procedure contains only those fields that apply to this package. See *Meridian Digital Centrex Customer Data Schema*, 297-2001-451, for a description of the other fields.

Datafilling table KSETFEAT

Field	Subfield	Explanation and action
FEATKEY		*KSET feature key* This field consists of the following subfields.
	LEN	*Line equipment number* Enter the LEN assigned to the line.
	KEY	*Physical key* Enter the number of the physical key set to which the DN associated with the LPIC feature is assigned.
	FEAT	*Feature* Enter LPIC, the feature assigned to the line.
FEATURE		*Feature* Enter LPIC, the feature assigned to the line.
KVAR		*Key variable area* For this feature, this field contains subfield CARRIER.
	CARRIER	*Carrier name* Enter the name of the carrier assigned as the LPIC. The name must be datafilled in table OCCNAME.

Datafill example for table KSETFEAT

The following example shows sample datafill for table KSETFEAT. In this example, carrier CARRA is defined as the LPIC for this MBS.

NTXF69AA - MDC Intra-LATA PIC in EAEO (continued)

Datafill example for table KSETFEAT

Example of a MAP display:

```
     FEATKEY                FEATURE
                                                          KVAR
________________________________________________________________
HOST 00 1 18 08 1     LPIC    LPIC
                                                           CARRA
```

Datafilling table VIRTGRPS

Table VIRTGRPS assigns options to VFGs. The options relevant to Equal Access are EA and LPIC. The EA option provides Equal Access capability to MDC stations and incoming trunks. The LPIC option provides an Equal Access carrier for local exchange calls. It is only valid if the EA option is assigned.

The following procedure shows the datafill for table VIRTGRPS. This procedure contains only those fields that apply to this package. See *Meridian Digital Centrex Customer Data Schema*, 297-2001-451, for a description of the other fields.

Datafilling table VIRTGRPS

Field	Subfield	Explanation and action
OPTIONS		*Options* Enter the list of options and associated subfields which are assigned to the VFG. Each option and its subfield must be separated by a space. Enter EA and subfields PIC and CHOICE to assign the EA option. Enter LPIC and subfield IPIC to assign the intra-LATA PIC option.
	PIC	*Primary inter-LATA carrier* Enter the name assigned to the PIC in table OCCNAME. If a PIC is not required, enter NONE.
	CHOICE	*Choice* Enter Y if the subscriber is allowed to dial an EAP prefix to choose a carrier manually. Otherwise, enter N.
	IPIC	*Intra-LATA carrier name* Enter the name of the intra-LATA carrier for this VFG as defined in table OCCNAME.

NTXF69AA - MDC Intra-LATA PIC in EAEO (continued)

Datafill example for table VIRTGRPS

The following example shows sample datafill for table VIRTGRPS. In this example, carrier CARRC is defined as the LPIC for this VFG. The EA option has also been assigned to the VFG.

Datafill example for table VIRTGRPS

Example of a MAP display:

```
 KEY                                DATA

                                           OPTIONS
______________________________________________________
KDKVRT SIZE 2  POTS  6137224500     0  Y
                                    (EA  CARRA Y)
                                    (LPIC  CARRC) $
```

Datafilling table VFGDATA

Table VFGDATA contains the data for each end of a POTS VFG. The LPIC option is added to provide data when an Equal Access carrier is chosen to provide intra-LATA calls for POTS VFGs. This option can be added only when the EA option has been added.

The following procedure shows the datafill for table VFGDATA. This procedure contains only those fields that apply to this package. See *Meridian Digital Centrex Customer Data Schema*, 297-2001-451, for a description of the other fields.

Datafill for table VFGDATA

Field	Subfield	Explanation and action
OPTION		*Option* Enter the list of options and associated subfields which are assigned to the VFG. Each option and its subfield must be separated by a space. Enter VFGEA and subfields PIC and CHOICE to assign the EA option. Enter VLPIC and subfield IPIC to assign the intra-LATA PIC option.
	PIC	*Primary inter-LATA carrier* Enter the name assigned to the PIC in table OCCNAME. If a PIC is not required, enter NONE.

-continued-

Datafill for table VFGDATA (continued)

Field	Subfield	Explanation and action
	CHOICE	*Choice* Enter Y if the subscriber is allowed to dial an EAP prefix to choose a carrier manually. Otherwise, enter N.
	IPIC	*Intra-LATA carrier name* Enter the name of the intra-LATA carrier for this VFG as defined in table OCCNAME.

End

Datafill example for table VFGDATA

The following example shows sample datafill for table VFGDATA. In this example, carrier CARRB is defined as the LPIC for this VFG. The EA option has also been assigned to the VFG.

Datafill example for table VFGDATA

Example of a MAP display:

```
 KEY
                                                     DATA
_____________________________________________________________
KDKVRT  POTSVI
POTSVI  6137224500  0  Y              (VFGEA CARRA Y)
                                      (VLPIC CARRB)$
```

Datafilling table CXGRP

Table CXGRP assigns options to PX trunks. The LPIC option is added to allow the telephone company to route LPIC calls through a PX trunk. An intra-LATA carrier cannot be added to table CXGRP if the PX trunk pointing to the CXGRP entry does not have the EA option set in table TRKGRP (PX).

The following procedure shows the datafill for table CXGRP. This procedure contains only those fields that apply to this package. See *Local Customer Data Schema*, 297-2101-451, for a description of the other fields.

NTXF69AA - MDC Intra-LATA PIC in EAEO (continued)

Datafilling table CXGRP		
Field	**Subfield**	**Explanation and action**
PXOPTION		*Customer group options* Enter the LPIC option
CARRIER		*Intra-LATA carrier name* Enter the name of the intra-LATA carrier for this trunk group as defined in table OCCNAME.

Datafill example for table CXGRP

The following example shows sample datafill for table CXGRP. In this example, carrier CARRA is defined as the LPIC for group 32.

Datafill example for table CXGRP

Example of a MAP display:

```
CUSTKEY
                SPB
                                                    CTD
                                                  EWATS
                                                PXOPTION
-------------------------------------------------------
32
             N
                                                      N
                                                      N
                                  (LPIC CARRA) (TDV)  $
```

Datafilling table IBNXLA

Table IBNXLA stores the data required for the translation of calls from an MDC station. With this table, a customer can specify an LPIC to be used for an MDC station's NCOS preliminary translator, customer group translator, or both. The LPIC option can be assigned only if the EA option is assigned. The following procedure shows the datafill for table IBNXLA. This procedure contains only those fields that apply to this package. See *Meridian Digital Centrex Customer Data Schema*, 297-2001-451, for a description of the other fields.

NTXF69AA - MDC Intra-LATA PIC in EAEO (continued)

Datafilling table IBNXLA

Field	**Subfield**	**Explanation and action**
RESULT		This field contains numerous subfields. For this feature, only subfield OPTION is affected.
	OPTION	*Option* Enter the list of options and associated subfields which are assigned to the translator. Each option and its subfield must be separated by a space. Enter EA and subfields PIC, CHOICE, and INVEAFLX to assign the EA option. Enter LPIC and subfield IPIC to assign the intra-LATA PIC option.
	PIC	*Primary inter-LATA carrier* Enter the name assigned to the PIC in table OCCNAME. If a PIC is not required, enter NONE.
	CHOICE	*Choice* Enter Y if the subscriber is allowed to dial an EAP prefix to choose a carrier manually. Otherwise, enter N.
	INVEAFLX	*Invalid flexible intercept number* Enter the invalid flexible intercept number. If the call cannot be made through the carrier specified in field PIC, the call is sent to this treatment.
	IPIC	*Intra-LATA carrier name* Enter the name of the intra-LATA carrier for this station as defined in table OCCNAME.

Datafill example for table IBNXLA

The following example shows sample datafill for table IBNXLA. In this example, carrier CARRB is defined as the LPIC for this MDC station. The EA option has also been assigned.

Datafill example for table IBNXLA

Example of a MAP display:

```
 KEY
                                                RESULT
_______________________________________________________
CXT1           9
NET  N  N  N 1  Y  POTS  N  Y  GEN  (EA CARRA Y 0)
                                    (LPIC  CARRB)  $
```

NTXF69AA - MDC Intra-LATA PIC in EAEO (continued)

Datafilling table OCCINFO

Table OCCINFO defines the attributes for carriers serving the end office and screens calls for carrier compatibility. For example, table OCCINFO allows international traffic to be sent only to carriers capable of handling such traffic.

The following procedure shows the datafill for table OCCINFO. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table OCCINFO

Field	Subfield	Explanation and action
INTRAOPR		*Intra-LATA operator* Enter Y if the carrier is capable of handling 0- intra-LATA operator calls. Otherwise, enter N, the default value.

Datafill example for table OCCINFO

The following example shows sample datafill for table OCCINFO.

Datafill example for table OCCINFO

Example of a MAP display:

```
CARRNAME CARRNUM ACCESS INTER INTNTL  INTRA  ANI  FANI  ONISCRN
 AD1  OVERLAP  INTERS  INTRAS  TERMREC  OCCSEPNO OPSIG
 PICIND  NOA950  INCCPN DTMFIND OPSERV CACBLOCK CTDOA CMCMON
 SCRNWATS  CRMCRA  ATPINCL INTRAOPR
-------------------------------------------------------------
CAR1       123     FGC      Y     Y      Y    N    N     N
 Y    Y         Y         Y       LONG      0       FGRPC
 N         N         N         N      N      N       N    N
 N            Y      N         N
```

Translation verification tools

TRAVER

The following example shows the output from TRAVER when it is used to examine the translation and routing of a call using an LPIC. For more information about TRAVER, see *Command Reference Manual*, 297-1001-509.

In the TRAVER command shown in this example

- L indicates the originator is a line
- 6215000 is the DN originating the call

NTXF69AA - MDC Intra-LATA PIC in EAEO (continued)

- 1425188507777 is the DN receiving the call
- B indicates that a report on both table entries and results is desired
- RTEVFG see note below

Note: An additional option, RTEVFG, is added to the TRAVER route specification. This option corrects problems caused by VFG translation verifications not included in MDC. For TRAVER runs that use the NT or B trace, RTEVFG can be included after the NT or B specification.

The RTEVFG option causes TRAVER to check all the first pass routes it finds to see if any VFG routes exist. If so, the TRAVER process is done. The RTEVFG option is not valid for a T trace because this trace alone does not generate any route lists. If option RTEVFG is used with the T specification, TRAVER does not associate it with the trace option, but instead interprets it as the next option in the option area following the trace specification.

TRAVER output example for NTXF69AA - MDC Intra-LATA PIC in EAEO

Line	Output
	>TRAVER L 6215000 1425188507777 B RTEVFG
1	TABLE IBNLINES
2	HOST 00 0 01 16 DT STN IBN 6215000 IBNTST 0 0 613 $
3	TABLE DNATTRS
4	TUPLE NOT FOUND
5	TABLE DNGRPS
6	TUPLE NOT FOUND
7	TABLE NCOS
8	IBNTST 0 0 0 TST10 (XLAS CXT1 NXLA NDGT) (OHQ 0 TONE_OHQ)
	>>> (CBQ 0 1 Y 2) (ERWT)$
9	TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA,
	>>> VACTRMT, AND DIGCOL
10	IBNTST NXLA CXT3 NXLA 0 TST1
11	TABLE DIGCOL
12	TST1 1 COL S 2

-continued-

NTXF69AA - MDC Intra-LATA PIC in EAEO (continued)

TRAVER output example for NTXF69AA - MDC Intra-LATA PIC in EAEO (continued)

Line	Output
13	TABLE IBNXLA: XLANAME CXT1
14	CXT1 142 NET N Y 3 Y NDGT N Y GEN (LATTR 24) (EA CAR1 Y 0) (LPIC CAR1) $
15	TABLE DIGCOL
16	NDGT specified: digits collected individually.
17	TABLE LINEATTR
18	24 1FR NONE NT NSCR 4 613 PRTC NLCA NONE N 10 NIL >>> NILSFC NILLATA 0 NIL NIL 00 N
19	TABLE STDPRTCT
20	PRTC (1) (0)
21	. SUBTABLE STDPRT
22	. 518 61 T NP 0 IBNRTE 10 3 18 NONE
23	. . TABLE IBNRTE
24	. . 10 VFG N N N EWHVFG 0
25	. . EXIT TABLE IBNRTE
26	. SUBTABLE AMAPRT
27	. KEY NOT FOUND
28	. DEFAULT VALUE IS: NONE N
29	
30	+++ TRAVER: SUCCESSFUL CALL TRACE +++
31	DIGIT TRANSLATION ROUTES
32	
33	1 VFG: EWHVFG 5188507777
34	
35	TREATMENT ROUTES. TREATMENT IS: GNCT
36	1 T120
37	+++ TRAVER: SUCCESSFUL CALL TRACE +++
38	
39	--->
40	---> RESOLVING VFG: EWHVFG Route with calling digits 5188507777
41	--->
42	
43	TABLE VIRTGRPS
44	EWHVFG SIZE 5 POTS 7777777777 0 N (IBNPIC) (TOLLRST)$
45	WARNING: LIBNPIC option is set
46	IBNXLA EA LPIC will be used
47	WARNING: TOLLRST option is set
48	TABLE LINEATTR
49	0 1FR NONE NT FR01 0 613 P621 L613 TSPS N 10 NIL

End

Service orders

A new SERVORD option, LPIC, is now supported for MDC. This option can be added to or deleted from standard MDC lines, data units, and MBS's through the use of the ADO, DEO, CHF, and NEW commands. A new field,

CARRIER, prompts for the name of the carrier selected as LPIC when LPIC is added to a line. The name of the carrier specified must be datafilled in table OCCNAME.

Service order prompts

The following table shows the SERVORD prompts used to add LPIC to a line and to specify the name of the carrier selected as LPIC.

Service order prompts for option LPIC

Prompt	Valid input	Explanation
DN_OR_ LEN	Valid DN or LEN	Enter the seven-digit DN or the LEN.
OPTION	LPIC	Enter LPIC to assign the option.
CARRIER	Carrier name as datafilled in table OCCNAME	Enter the carrier assigned as the LPIC.

The following sections give examples of SERVORD commands.

Adding LPIC to an MDC station

Adding an LPIC to an MDC 500/2500 set using SERVORD updates table IBNFEAT. Adding an LPIC to an MBS or a data unit using SERVORD updates table KSETFEAT. The following example shows LPIC being added to an MDC station using the ADO command.

Example of service orders

Input and response

*Input in **Prompt** mode*

```
>ADO
  SONUMBER:    NOW 86 1 2 PM
>$
  DN_OR_LEN:
>7211000
  OPTION:
>LPIC
  CARRIER:
>CARR1
  OPTION:
>$
```

-continued-

NTXF69AA - MDC Intra-LATA PIC in EAEO (end)

Example of service orders (continued) **Input and response**
*Input in **No-prompt** mode*
>ADO $ 7211000 LPIC CARR1 $
End

Deleting LPIC from an MDC station

The following example shows LPIC being deleted from an MDC station using the DEO command.

Example of service orders **Input and response**
*Input in **Prompt** mode*
>DEO SONUMBER: NOW 86 1 2 PM **>$** DN_OR_LEN: **>7211000** OPTION: **>LPIC** OPTION: **>$**
*Input in **No-prompt** mode*
>DEO $ 7211000 LPIC $

NTX888AA - Equal Access Operator Services Signaling

Package name

Equal Access Operator Services Signaling

Package number

NTX888AA

Feature number

The NTX888AA feature package consists of the following feature:

NTX888AA feature number and name

Feature number	Feature name
BR0633	Equal Access Operator Services Signaling

BCS applicability

BCS30 and up

Feature package prerequisites

This package requires the following feature packages:

Feature package prerequisites

Feature package	Feature package name
NTX000AA	Bilge
NTX001AA	Common Basic
NTX186AA or NTX186AB	Equal Access End Office

NTX888AA - Equal Access Operator Services Signaling (continued)

Description

The NTX888AA - Equal Access Operator Services Signaling feature package provides the Operator Services System (OSS) with all the information necessary to process calls arriving on a single combined trunk group. Equal Access operator services signaling (EAOSS) is a signaling type that allows the operating company to combine different types of traffic (operator and non-operator) on the same operator trunk group.

Theory of operation

This feature package implements EAOSS, which is FGD signaling with modified KP and start pulse (ST) signals. These modified signals are used by EAOSS to provide the operator system with all the information necessary to process the combined traffic.

A modified ST (ST') is now signaled on the first set of digits to inform the operating company that OSS processing is required. Other calls are signaled with ST.

The KP signals are also modified by this feature package. The new KP signals are KP prime (KP'), KP double prime (KP''), and KP triple prime (KP'''). These modified signals are sent at the start of the ANI sequences and are the same MF tones as the equivalent ST signals. The following table describes the KP signals.

Table 3-10
Definition of KP signals

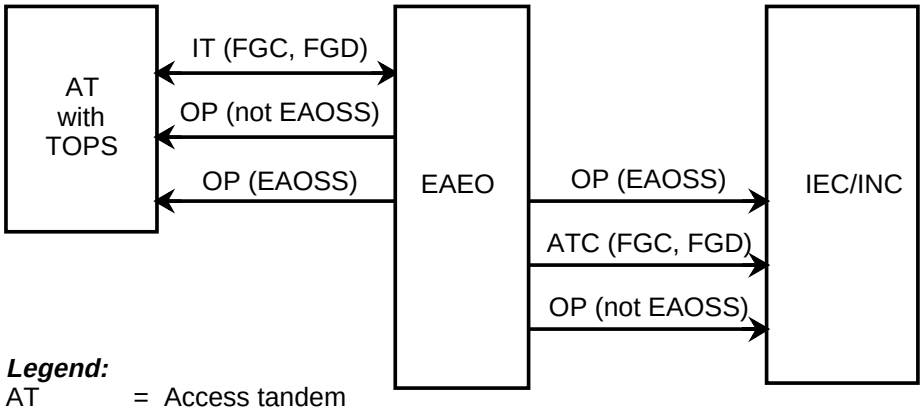
Signal	Call originated from	Meaning
KP	Rotary dial station	Customer did not dial the EAP prefix
KP'	Rotary dial station	Customer dialed the EAP prefix
KP''	Dual-tone MF station	Customer did not dial the EAP prefix
KP'''	Dual-tone MF station	Customer dialed the EAP prefix

Traffic signaled with EAOSS is routed from an EAEO to one of the following destinations:

- to an operating company OSS; for example, to an AT equipped with a TOPS
- directly to an IEC or INC operator system
- to an IEC or INC via a TOPS AT

Figure 3-11 shows the first two destinations.

Figure 3-11
Example of EAEO trunking arrangement with EAOSS



Legend:

AT	=	Access tandem
ATC	=	Access to carrier trunk group
EAEO	=	Equal Access end office
EAOSS	=	Exchange access operator services signaling
FGC	=	FGC signaling
FGD	=	FGD signaling
IEC	=	Interexchange carrier
INC	=	International carrier
IT	=	Intertoll trunk group
OP	=	Operator trunk group
TOPS	=	Traffic Operator Position System

Any or all of the following types of traffic can be combined on an operator trunk group and signaled with EAOSS:

- calls handled by the operating company, including the following:
  - non-operator services calls
  - toll and assistance (TA) calls
  - directory assistance (DA) calls
  - intercept calls
  - direct distance dialing (DDD)
  - new services traffic
- calls handled by the IEC/INC, including the following:
  - TA calls
  - DDD calls
  - new services traffic

This feature package is described in three parts. The first part describes how the feature works for calls to an AT equipped with OSS. The second part

describes how the feature works for calls routed directly to an IEC. The last part describes the datafill needed to implement this feature package.

Calls routed through an AT

Calls originating from the EAEO and routed over an OP trunk group using EAOSS are affected by this feature. The following sections give examples of the signaling used for these EAOSS calls:

- operating company calls (exchange operator services)
- operating company calls (non-operator services)
- domestic IEC calls (EAOSS)
- number services calls (EAOSS)
- international IEC calls (EAOSS)
- IEC calls not requiring operating company EAOSS

Operating company calls (exchange operator services)

The EAOSS scheme is used on the TA, listing services (for example, DA calls), and intercept calls completed by the operating company. These calls will normally be intra-LATA, but can sometimes be inter-LATA (for example, corridor calls). The signaling plan includes new STs and two ANI information digits.

Intercept signaling can still be used if intercept traffic remains on separate trunk groups, but new signaling should be used if intercept is combined with other types of traffic on common trunk groups. On intercept calls routed to an AT OSS over an operator trunk using EAOSS signaling, the following ANI information digits are used :

- 30 blank number intercept
- 31 trouble intercept
- 32 regular intercept

Table 3-11 describes the signaling sequences used on calls that originated from rotary dial stations. For calls originating from DTMF stations, a KP signal in the ANI sequences is replaced by a KP'' signal. See table 3-10 for a definition of KP signals.

NTX888AA - Equal Access Operator Services Signaling (continued)

Table 3-11
Signaling on operating company calls (exchange operator services)

Call type	EAEO outpulsing	AT outpulsing	EAEO outpulsing
0+ intra-LATA 0- corridor	KP + 0/3/7/10D + ST’	off-hook ANI request	KP + II + ANI + ST
1+ intra-LATA OSS (such as coin and hotel calls) corridor calls	KP + 3/7/10D + ST’’	off-hook ANI request	KP + II + ANI + ST
1+ listing services	KP + 411 + ST’’ KP + 555 + XXXX + ST’’ KP + NPA + 555 + XXXX + ST’’	off-hook ANI request	KP + II + ANI + ST
0+ listing services	KP + 411 + ST’ KP + 555 + XXXX + ST’ KP + NPA + 555 + XXXX + ST’	off-hook ANI request	KP + II + ANI + ST
intercept	KP + 10D + ST’’	off-hook ANI request	KP + II + ST

Legend:
ANI calling number
II information digits
ST’ 0- or 0+ was dialed
ST’’ the call requires OSS functions but 0- or 0+ was not dialed

Operating company calls (non-operator services)

The signaling for intra-LATA calls (including corridor calls) that do not require operator services is as follows:

- EAEO outpulses KP + 0/3/7/10D + ST to AT.
- AT routes call to trunk.

Domestic IEC calls (EAOSS)

All IEC calls are sent from the end office to the AT equipped with OSS using a different signaling scheme than operating company calls to allow overlap outpulsing. The AT equipped with OSS processes IEC by either

- providing complete operator services before routing the call to the appropriate IEC point of termination (POT)
- forwarding the call to the appropriate IEC POT without providing complete operator services
- forwarding the call to the appropriate IEC POT without providing any operator services

NTX888AA - Equal Access Operator Services Signaling (continued)

The signaling sequences described in table 3-12 are used on calls that originated from rotary dial stations. For calls originating from DTMF stations, a KP signal in the ANI sequences is replaced by a KP'' signal, and a KP' signal in the ANI sequences is replaced by a KP''' signal. See table 3-10 for a definition of KP signals. The station line data determines whether the call originated from a DTMF station. Note that the AT sends an acknowledgement wink or off-hook after the EAEO second outpulsing.

Table 3-12
Signaling on domestic IEC calls (EAOSS)

Call type	EAEO outpulsing	AT outpulsing	EAEO outpulsing
0+ inter-LATA (PIC)	KP + 0ZZ + XXX + ST'	wink	KP + II + ANI + ST + KP + 0 + called number + ST
10XXX+0+ inter-LATA	KP + 0ZZ + XXX + ST'	wink	KP' + II + ANI + ST + KP + 0 + called number + ST
1+ inter-LATA OSS (such as coin and hotel calls)	KP + 0ZZ + XXX + ST'	wink	KP + II + ANI + ST + KP + called number + ST
10XXX+1+ inter-LATA OSS (such as coin and hotel calls)	KP + 0ZZ + XXX + ST'	wink	KP' + II + ANI + ST + KP + called number + ST
00	KP + 0ZZ + XXX + ST'	wink	KP + II + ANI + ST + KP + 0 + ST
10XXX+0-	KP + 0ZZ + XXX + ST'	wink	KP' + II + ANI + ST + KP + 0 + ST

Legend:

ANI	calling number
II	information digits
ST'	the operating company provides EAOSS for the IEC
XXX	the CIC of the carrier
0ZZ	the call type for both DD and OA calls (for example, 080)

Number services calls (EAOSS)

The signaling on number services calls is as follows:

- EAEO outpulses KP + 0ZZ + XXX + ST'' to AT.
- AT sends wink.

- EAEO outpulses KP + II + ANI + ST + KP + 3/7/10D + ST to AT.
- AT sends acknowledgment wink.

Note: ST'' indicates a number services call. The 0 in 0ZZ tells the system this is a domestic IEC call. The ZZ provides carrier specific routing information. The XXX is the CIC that was dialed or presubscribed.

International IEC calls (EAOSS)

The signaling sequences described in table 3-13 are used on calls that originated from rotary dial stations. For calls originating from DTMF stations, a KP signal in the ANI sequences is replaced by a KP'' signal, and a KP' signal in the ANI sequences is replaced by a KP''' signal. See table 3-10 for a definition of KP signals. The stations line data determines whether the call originated from a DTMF station. Note that the AT sends an acknowledgement wink or off-hook after the EAEO second outpulsing.

Table 3-13
Signaling on international IEC calls (EAOSS)

Call type	EAEO outpulsing	AT outpulsing	EAEO outpulsing
01+ international PIC 011+ inter-LATA OSS	KP + 1N'X + XXX + CCC + ST'	wink	KP + II + ANI + ST + KP + CC + NN + ST
10XXX+ 01+ international	KP + 1N'X + XXX + CCC + ST'	wink	KP' + II + ANI + ST + KP + CC + NN + ST
011+ international OSS	KP + 1NX + XXX + CCC + ST'	wink	KP + II + ANI + ST + KP + CC + NN + ST
10XXX+011+ international OSS	KP + 1NX + XXX + CCC + ST'	wink	KP' + II + ANI + ST + KP + CC + NN + ST
00	KP + 1N'X + XXX + ST'	wink	KP + II + ANI + ST + KP + 0 + ST

-continued-

NTX888AA - Equal Access Operator Services Signaling (continued)

Table 3-13
Signaling on international IEC calls (EAOSS) (continued)

Call type	EAEO outpulsing	AT outpulsing	EAEO outpulsing
10XXX+0-	KP + 1N'X + XXX + ST'	wink	KP' + II + ANI + ST + KP + 0 + ST

Legend:

ANI	calling number
CC	country code digits
CCC	pseudo country code digits
II	information digits
NN	national number
ST'	the operating company provides EAOSS for the IEC
XXX	the CIC of the carrier
1NX	international DD identification digits
1N'X	international OA identification digits

End

IEC calls not requiring operating company EAOSS

Calls that do not require operating company EAOSS functions are outpulsed to the AT with an ST instead of an ST'. Calls where the CAC is dialed (10XXX and 00 calls) are signaled as described in tables 3-12 and 3-13. However, if the IEC provides operator services and does not want the operating company to handle explicitly dialed OSS calls, then these calls are signaled to the AT with an ST instead of an ST' (KP+0ZZ+XXX+ST).

Operator supervision on the explicitly dialed calls not handled by the operating company OSS is set on a trunk group basis, as determined by the 0ZZ digits outpulsed from the EAEO. The 0ZZ digits are used to select the route from the AT to the IEC. If the IEC provides operator services, then at least one trunk should be set up to provide operator supervision on calls routed to the IEC.

Calls routed directly to an IEC

Calls routed directly to an IEC on an operator trunk with EAOSS are affected by this feature. The signaling to the IEC differs from current signaling in two ways: the rotary dial/DTMF indication is sent only if requested, and an off-hook can be received instead of an acknowledgment wink to indicate OSS functions.

If the IEC provides OSS, then calls to this carrier are signaled using the Equal Access signaling described in feature package NTX186AA. The rotary dial/DTMF indication, if requested, is signaled on these calls.

If the IEC responds to the address sequence by returning a steady off-hook instead of an acknowledgment wink, this off-hook is interpreted by the EAEO as the signal to start the hold condition. If the operator trunk group was not set up for EAOSS and holdtype, then the EAEO returns an announcement to the calling party and releases the forward connection.

To prevent a trouble condition on a call requiring the hold function from holding a line out of service for an extended period, office parameter EA_OSS_HOLD_TIMEOUT_MINS is created. When the line goes on-hook and the IEC is in an off-hook condition, the timer is started. If the line remains on-hook and neither an on-hook or an expanded MF signal is received from the IEC within the value set for EA_OSS_HOLD_TIMEOUT_MINS, then the connection is released and a trouble record made. If an expanded MF signal is received, the timeout interval is reinitiated.

Datafill needed to implement feature package NTX888AA

For IEC calls routed through an AT equipped with OSS, the IEC can decide whether OSS traffic is handled by the AT OSS or by the IEC OSS. Field OPSERV is added to table OCCINFO to indicate whether the explicitly dialed OSS traffic is handled by the carrier.

Field DTMFIND in table OCCINFO must also be datafilled to indicate whether the IEC wishes the DTMF indication on explicitly dialed calls. This field must be datafilled for calls routed through an AT or calls routed directly to the carrier. If the IEC does not request the rotary dial/DTMF indication then the signaling is the same as for the rotary dial station.

Routing

A new conditional route enables the operating company to route calls dialed with the EAP prefix on a different route. If EAOSS is used, then the call needs to be routed on an operator trunk group that has been set up for EAOSS. Also, if the call is handled by the operating company OSS, then field RTEVIAAT in table TRKGRP needs to be set to Y. If the call is routed directly to the IEC on an operator trunk, then field RTEVIAAT should be set to N.

0+/01+ from non-presubscribed lines

To enable the operating company to route 0+ and 01+ inter-LATA calls from non-presubscribed lines, a special carrier must be set up to look like a valid carrier. The special carrier name (OSS) is added to table OCCNAME. Table OCCINFO is then datafilled for this special carrier.

Table STDPRTCT is then datafilled to send 0+ and 01+ inter-LATA calls to the special carrier (OSS). Other calls can be datafilled to route to carrier

NTX888AA - Equal Access Operator Services Signaling (continued)

OSS or to a treatment. This special carrier is then added to the non-presubscribed line(s) as the line(s) PIC.

Package limitations and restrictions

The following limitations and restrictions apply to feature package NTX888AA:

- The operating company must use operator trunk groups for all calls signaled with EAOSS.
- The only listing services numbers recognized by the EAEO are 411 and 555 (NPA-555-XXXX and 555-XXXX). If other numbers are used for listing services, they will not be recognized as listing services. These unrecognized numbers will not be signaled to the operating company OSS.
- If a carrier wants to provide operator services for EAOSS 10XXX+0 or 00 calls, that carrier must be able to accept FGD signaling. Note that normal OSS is not affected by EAOSS. That is, for FGC carriers that provide operator services, the TOPS AT will convert EAOSS to FGC signaling as long as OPSERV is set to N for that carrier.

Feature interactions

This feature package interacts with three-way calling and call waiting in that subscriber flashes can occur with all of these features. The treatment of a subscriber flash on an EAOSS call when the subscriber has other flash capabilities is the same as that currently provided on operating company operator calls.

Activation/deactivation by the end user

Activation/deactivation is not applicable for this feature package.

Billing

The EAEO does not produce billing records for calls signaled with an STP, that is, for calls routed to the operating company operator system. All other calls are billed as described in *Bellcore Format AMA Reference Manual*, 297-1001-830.

For calls routed directly from the EAEO to the IC/INC, operator system functions can be indicated by an off-hook instead of an acknowledgement wink from the IC/INC. If an off-hook is received at the EAEO, an AMA record is created. However, it cannot be used to bill the originating customer since answer supervision is not passed to the originating office when an off-hook is received on completion of outpulsing.

NTX888AA - Equal Access Operator Services Signaling (continued)

Datafilling office parameters

The following table lists the office parameters used by this feature package.

Office parameters used by Equal Access Operator Services Signaling

Table name **Parameter**	**Explanation and action**
OFCENG EA_OSS_HOLD_TIMEOUT_MINS	This office parameter specifies the EAOSS hold timeout (1, 2 ,3 or 4 minutes). This parameter prevents a trouble condition on a call requiring the hold function from holding a line out of service for an extended period. The parameter value is used when a line goes on-hook and the IEC is in an off-hook position. The value of this parameter is applicable only to calls originating from the EAEO and routed over an operator trunk group using EAOSS signaling.

Datafill sequence

The following tables require datafill to implement this feature package. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Equal Access Operator Services Signaling

Table	Form	NTP	Purpose of table
OCCNAME	2356A-B	297-1001-451	Table OCCNAME (other common carrier name) lists the connected carriers and establishes the spelling standard for other tables requiring the carrier name.
TRKGRP (OP)	2156H	297-1001-451	Table TRKGRP (OP) (outgoing and two way from local or toll to TOPS/TSPS trunk group) contains information about each operator trunk group.

- continued -

NTX888AA - Equal Access Operator Services Signaling (continued)

Datafill tables required for Equal Access Operator Services Signaling (continued)

Table	Form	NTP	Purpose of table
OCCINFO	2355A-B	297-1001-451	Table OCCINFO (other common carrier information) defines the attributes for the carriers serving a DMS switch and screens calls for carrier compatibility.
STDPRTCT. STDPRT	2467A-B	297-1001-451	Subtable STDPRTCT.STDPRT (standard pretranslator) is the first subtable indexed by the received leading digits when the originating line attribute (from table LINEATTR) or trunk (from table TRKGRP) specifies a pretranslator name.

End

Datafilling table OCCNAME

Table OCCNAME lists the carriers serving the EAEO. It also establishes the spelling standard for other tables requiring the carrier name (OCCINFO, TRKGRP, and STDPRTCT.STDPRT). This table must contain a dummy carrier name (OSS) to enable the operating company to route 0+ and 01+ inter-LATA calls from non-presubscribed lines.

The following procedure shows the datafill for table OCCNAME. See *Common Customer Data Schema*, 297-1001-451, for a detailed description of the table.

Datafilling table OCCNAME

Field	Subfield	Explanation and action
OCCNAME		*Other common carrier name* Enter the carrier name or a 1- to 16-character alphanumeric abbreviation of the carrier name.

Datafill example for table OCCNAME

The following example shows sample datafill for table OCCNAME. In this example, five carriers serve the EAEO. OSS is the dummy carrier.

Datafill example for table OCCNAME

Example of a MAP display:

```
OCCNAME

C111
C222
C333
C444
OSS
```

Datafilling table TRKGRP (OP)

Table TRKGRP (OP) contains data associated with each operator trunk group existing in the EAEO. The following procedure shows the datafill for table TRKGRP (OP). This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a detailed description of the other fields.

Datafilling table TRKGRP (OP)

Field	Subfield	Explanation and action
EADATA		*Equal Access data* This field is composed of the following subfields.
	EA	*Equal Access selector* Enter Y when Equal Access signaling (double ANI digits) is required. Otherwise, enter N.
	EAOSS	*Exchange access operator services signaling* Enter Y if EAOSS is to be used on the trunk. Otherwise, enter N. This field is displayed only when EA = Y.
	RTEVIAAT	*Route via access tandem* Enter Y if the trunk is between an EAEO and an AT equipped with OSS. For direct trunks between an EAEO and an IEC, enter N. This field is displayed only when EA = Y.

Datafill example for table TRKGRP (OP)

The following example shows sample datafill for table TRKGRP (OP). Trunk LNTOPS2 is located between an EAEO and a TOPS AT (RTEVIAAT = Y). It requires Equal Access signaling. The last three entries show the EA, EAOSS, and RTEVIAAT fields.

NTX888AA - Equal Access Operator Services Signaling (continued)

Datafill example for table TRKGRP (OP)

Example of a MAP display:

```
 GRPKEY
                                                          GRPINFO
-------------------------------------------------------------------

LNTOPS2
  OP 11 TLD NCRT SP MIDL NCN MIX REV TERMHOLD N OG Y Y Y $
```

Datafilling table OCCINFO

Table OCCINFO defines the attributes for carriers serving the end office and screens calls for carrier compatibility. For example, table OCCINFO allows international traffic to be sent only to carriers capable of handling such traffic.

Fields DTMFIND and OPSERV must be datafilled for every carrier associated with the end office using EAOSS. The dummy carrier OSS must also be datafilled in this table. Field DTMFIND is only needed for OSS calls routed directly to the carrier. Because OSS is a dummy carrier, field DTMFIND should be set to N. Field OPSERV should be set to N because all calls using this carrier need to be handled by the operating company OSS.

The following procedure shows the datafill for table OCCINFO. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table OCCINFO

Field	Subfield	Explanation and action
DTMFIND		*Rotary dial/DTMF indicator* Enter Y if the carrier has chosen to receive the rotary dial/DTMF indicator on operator services calls that are routed directly to the carrier. Otherwise, enter N. This field must be datafilled for every entry in table OCCINFO and is active only if feature package NTX888 is present.
OPSERV		*Operator services* Enter Y if the carrier accepts EAOSS calls where the CIC is explicitly dialed (for example, 0XXX+0+, 00, 10XXX+0+) and does not want the operating company to handle these calls. Otherwise, enter N. This field must be datafilled for every entry in table OCCINFO and is active only if feature package NTX888 is present.

NTX888AA - Equal Access Operator Services Signaling (continued)

Datafill example for table OCCINFO

The following example shows sample datafill for table OCCINFO. This example shows dummy carrier OSS. The CAC assigned to this carrier is 987 , DTMFIND is N, and OPSERV is N.

Datafill example for table OCCINFO

Example of a MAP display:

```
CARRNAME CARRNUM ACCESS INTER INTNTL INTRA ANI FANI ONISCRN AD1
OVERLAP INTERS INTRAS TERMREC OCCSEPNO OPSIG PICIND NOA950
INCCPN DTMFIND OPSERV CTDOA CMCMON SCRNWATS CRMCRA ATPINCL
INTRAOPR
```

```
OSS      987     EAP      Y      N    Y    Y    Y     Y    Y
  Y       y       y      LONG    0      FGRPD   N      N
  N       N     N      N      N        N      N    N
  N
```

Datafilling subtable STDPRTCT.STDPRT

Subtable STDPRTCT.STDPRT is the first subtable to be indexed by the received leading digits when the originating line attribute (from table LINEATTR) or trunk (from table TRKGRP) specifies a pretranslator name. This subtable must be datafilled to send 0+ and 01+ inter-LATA calls to dummy carrier OSS.

The following procedure shows the datafill for subtable STDPRTCT.STDPRT. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling subtable STDPRTCT.STDPRT

Field	Subfield	Explanation and action
FROMDIGS		*From digits* Enter the digit(s) to be translated. If the entry is a block of consecutive numbers, enter the first number in the block.
TODIGS		*To digits* If FROMDIGS is a block of consecutive numbers, enter the last number in the block. Otherwise this field equals FROMDIGS.

-continued-

NTX888AA - Equal Access Operator Services Signaling (continued)

Datafilling subtable STDPRTCT.STDPRT (continued)

Field	Subfield	Explanation and action
PRETRTE		*Pretranslation route* For Equal Access calls, this field is composed of subfields PRERTSEL, TYPCALL, NOPREDIG, XLA_INFO, CARRNAME, and RTEAREA.
	PRERTSEL	*Pretranslator route selector* Enter EA, the pretranslator route selector for Equal Access calls.
	TYPCALL	*Type of call* Enter the type of call: DD, NP (no prefix), or OA. ***Note:*** TYPCALL must be set to DD to enable call billing.
	NOPREDIG	*Number of prefix digits* Enter the number of prefix digits (0 to 7).
	XLA_INFO	*Equal Access translation information* This subfield is composed of subfield XLATYPE.
	XLATYPE	*Equal Access translation type* Enter one of the following values: N when no further digit translation or screening is required. A route must then be specified in subfield RTEAREA. P when further pretranslation is required. A pretranslator subtable name must be entered in subfield PRTNM. T when no further pretranslation is required. Translation then proceeds as determined by subfield TRANSYS.
	PRTNM	*Pretranslator subtable name* Enter the name of the pretranslator subtable that translation routes to for pretranslation of the remaining digits. This subfield is displayed when XLATYPE = P.
	TRANSYS	Translation system Enter one of the following values: NA when translation is to proceed to North American digit translations and screening. IN when translation is to proceed to international translations. NO when no further translation or screening is required. This subfield is displayed when XLATYPE = T.

-continued-

NTX888AA - Equal Access Operator Services Signaling (continued)

Datafilling subtable STDPRTCT.STDPRT (continued)		
Field	**Subfield**	**Explanation and action**
	CARRNAME	*Carrier name* Enter the name of the carrier, as defined in table OCCNAME, to which the call is offered.
	RTEAREA	*Route area* This subfield is composed of subfield RTEPRSNT.
	RTEPRSNT	*Route present* Enter Y to datafill subfields EXTRTEID, TABID, KEY, MINDIGSR, MAXDIGSR, and field OCS. Otherwise, enter N.
	EXTRTEID	*External route ID* This field is composed of subfields TABID and KEY.
	TABID	*Table identifier* Enter an office route table name (OFRT, OFR2, OFR3, OFR4).
	KEY	*Index* Enter the office route index (0 to 1023) that the translation is routed to.
	MINDIGSR	*Minimum digits received* Enter the minimum number of digits (1 to 18) to be collected before routing the call.
	MAXDIGSR	*Maximum digits received* Enter the maximum number of digits (1 to 24) to be collected before routing the call.
OCS		*Overlap carrier selection* If this field is set to Y and the carrier has field OVERLAP set to Y in table OCCINFO, then the call uses OCS. Otherwise, OCS is not used.
End		

Datafill example for subtable STDPRTCT.STDPRT

The following example shows sample datafill for subtable STDPRTCT.STDPRT.

NTX888AA - Equal Access Operator Services Signaling (continued)

Datafill example for subtable STDPRTCT.STDPRT

Example of a MAP display:

```
 FROMDIGS         TODIGS
                                         PRETRTE
_____________________________________________________
OSS1 (    1) (    0)
                08                 09
                                EA OA 1 T NA  OSS N
P621 (    1) (    0)
             10987              10987
           EA DD 5 P  OSS1  OSS Y  OFRT  887  6 20 Y
```

Translation verification tools

TRAVER

The following example shows the output from TRAVER when it is used to examine the translation and routing of a 0+ call from a line datafilled with a special carrier as the PIC. For more information about TRAVER, see *Command Reference Manual*, 297-1001-509.

In the TRAVER command shown in this example

- L — indicates the originator is a line
- 6211234 — is the DN originating the call
- 08881234 — is the DN receiving the call
- B — indicates that a report on both table entries and results is desired

TRAVER output example for NTX888AA - Equal Access Operator Services Signaling

Line	Output
	>TRAVER L 6211234 08881234 B
1	TABLE LINEATTR
2	0 1FR NONE NT FR01 0 613 P621 L613 TSPS N 10 NIL NILSFC LATA1 0 NIL NIL
3	TABLE STDPRTCT
4	P621 (1) (0)
5	. SUBTABLE STDPRT
6	. . 08 09 N OA 1 NA
7	. SUBTABLE AMAPRT
8	. KEY NOT FOUND
9	. DEFAULT VALUE IS: NONE

-continued-

NTX888AA - Equal Access Operator Services Signaling (continued)

TRAVER output example for NTX888AA - Equal Access Operator Services Signaling (continued)

Line	Output
10	TABLE HNPACONT
11	613 127 1 (49) (1) (84)
12	. SUBTABLE HNPACODE
13	. 888 888 LRTE 13
14	. SUBTABLE RTEREF
15	. 13 N D TOPOGNY 0 N N
16	. EXIT TABLE RTEREF
17	EXIT TABLE HNPACONT
18	TABLE LCASCRCN
19	613 L613 (12) MNDT N
20	. SUBTABLE LCASCR
21	. TUPLE NOT FOUND. DEFAULT IS NON-LOCAL
22	TABLE PFXTREAT
23	MNDT OA N OA UNDT
24	TABLE CLSVSCRC
25	613 FR01 OA 2 N NONE (1)
26	. SUBTABLE CLSVSCR
27	KEY NOT FOUND
28	DEFAULT IS TO LEAVE XLA RESULT UNCHANGED
29	OVERLAP CARRIER SELECTION (OCS) APPLIES
30	TABLE OCCINFO
31	OSS 987 EAP Y N Y Y Y Y Y Y LONG 0 FGRPD N N Y
32	TABLE EASAC
33	TUPLE NOT FOUND
34	TABLE LATAXLA
35	LATA1 613888 INTER INTER STD
36	TABLE STDPRTCT
37	P621 (1) (0)
38	. SUBTABLE STDPRT
39	. 10987 10987 EA DD 5 P OSS1 OSS Y OFRT 887 6 20 Y
40	. . TABLE OFRT
41	. . 887 CND EA CAC SK 2
42	. . N D LNTOPS 15 D019 N
43	. . CND ALWAYS SK 1
44	. . S D OGEACAR1
45	. . EXIT TABLE OFRT

-continued-

NTX888AA - Equal Access Operator Services Signaling (end)

TRAVER output example for NTX888AA - Equal Access Operator Services Signaling (continued)

Line	Output
46	. TABLE STDPRTCT
47	. OSS1 (1) (0)
48	. . SUBTABLE STDPRT
49	. . 08 09 EA OA 1 T NA OSS Y OFRT 887 8 11 Y
50	. . . TABLE OFRT
51	. . . 887 CND EA CAC SK 2
52	. . . N D LNTOPS 15 D019 N
53	. . . CND ALWAYS SK 1
54	. . . S D OGEACAR1
55	. . EXIT TABLE OFRT
56	+++ TRAVER: SUCCESSFUL CALL TRACE +++
57	DIGIT TRANSLATION ROUTES
58	1 LNTOPS D019 STP
59	TREATMENT ROUTES. TREATMENT IS: GNCT
60	1 *OFLO
61	2 LKOUT
62	+++ TRAVER: SUCCESSFUL CALL TRACE +++

End

Service orders

Service orders are not affected by EAOSS.

NTX803AA - Equal Access Alternate Switching Point

Package name

Equal Access Alternate Switching Point

Package number

NTX803AA

Feature number

The NTX803AA feature package consists of the following feature:

NTX803AA feature number and name

Feature number	Feature name
AL0229	Equal Access Alternate Switching Point

BCS applicability

BCS30 and up

Feature package prerequisites

This package requires the following feature packages:

Feature package prerequisites

Feature package	Feature package name
NTX000AA	Bilge
NTX001AA	Common Basic
NTX186AA or NTX186AB	Equal Access End Office

Description

The NTX803AA feature package establishes a special EAEO, called an EASP, that is used in emergency conditions to pass FGC and FGD calls from a typical EAEO to an AT or IEC. If the transmission facilities between the EAEO and the AT become damaged and an alternate route is required, Equal Access calls may then be routed through the EASP.

An EASP can also be used to pass FGC and FGD calls from a large business remote (LBR) to an AT or directly to an IEC. When an LBR is involved in an Equal Access call, the LBR host (which is an EAEO) is configured as an EASP.

NTX803AA - Equal Access Alternate Switching Point (continued)

Theory of operation

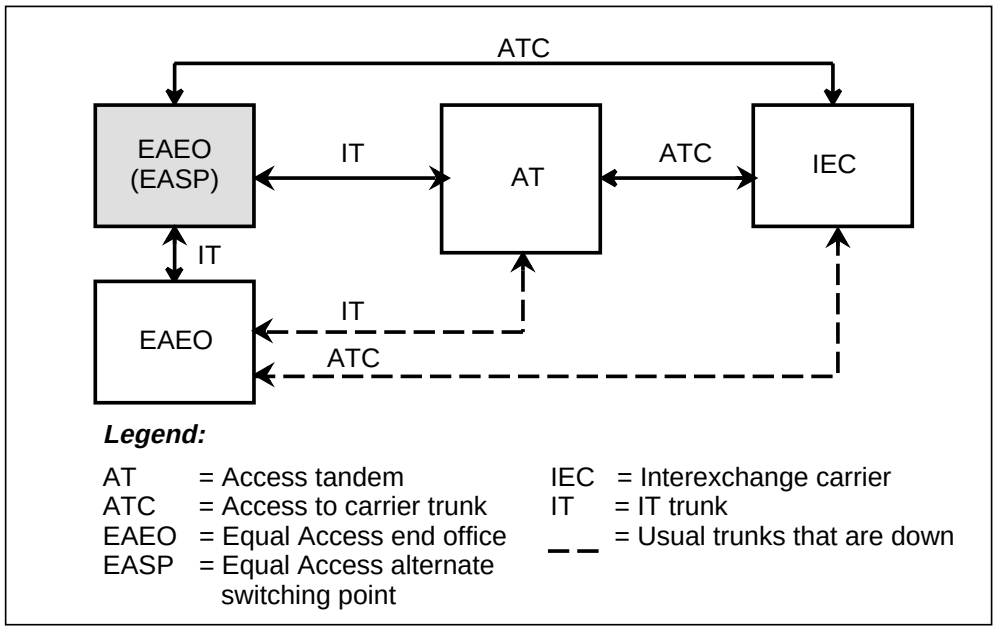
The following configurations, provided by this feature package, are described in this section:

- EASP to route FGD calls
- LBR to route FGD calls
- EASP to route FGC calls
- LBR to route FGC calls

EASP to route FGD calls

The FGD call configuration changes when an EASP is added as an alternative EAEO used in emergency situations. Figure 3-12 shows the possible EASP FGD switching configurations.

Figure 3-12
EASP (FGD configuration)



If the direct IT trunks between the EAEO and the AT are down, an FGD call can still be routed through the EASP. In this case, the FGD call leaves the EAEO on an IT trunk and also enters the EASP on an IT trunk. The trunk connection between the EASP and the AT is also IT to IT. When the FGD call leaves the AT for the IEC, the call leaves on an ATC trunk.

If the direct ATC trunks between the EAEO and and the IEC are down, an FGD call can be routed through the EASP. Direct trunking can also occur

from the EASP to the IEC. In this case, once the call enters the EASP from the EAEO, the call routes directly to the IEC over an ATC trunk.

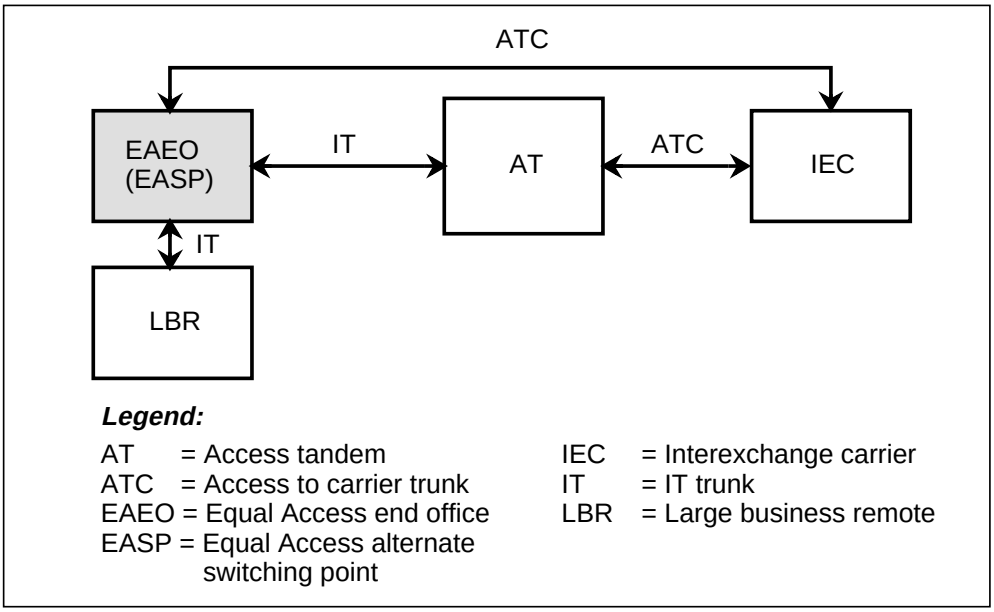
Successfully routing an FGD call through an EASP is accomplished by using the Equal Access tandem (ET) selector in subtable STDPRTCT.STDPRT. The ET selector identifies the call as an FGD Equal Access call and routes the call accordingly. Also, the pretranslator of the IT trunk groups between the EASP and the adjacent EAEO must be datafilled to recognize the new ET selector and the carrier selection digits from the adjacent EAEO.

Direct trunks from the EASP to the carrier should be datafilled as described in feature package NTX186AB - Equal Access End Office.

LBR to route FGD calls

The configuration for an FGD call when there is an LBR involved is different from the previously explained scenarios. Figure 3-13 shows the possible LBR FGD switching configurations.

Figure 3-13
LBR (FGD configuration)



FGD calls that originate in an LBR pass through an EASP before going through an AT or directly to an IEC.

NTX803AA - Equal Access Alternate Switching Point (continued)

An FGD call leaves the LBR over an IT trunk and enters the EASP on an IT trunk. The call can then proceed in one of the two following ways:

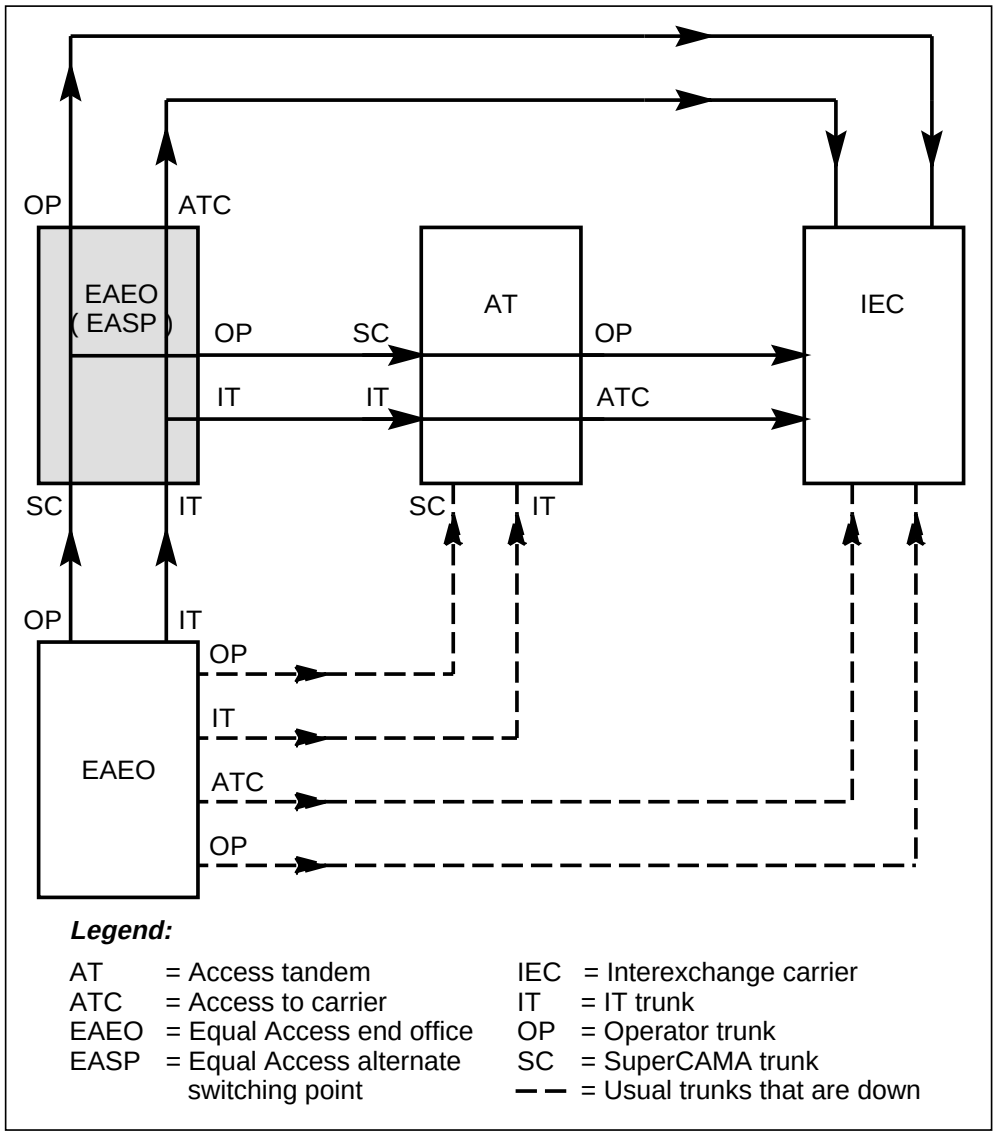
- The call can leave the EASP on an IT trunk and enter the AT on an IT trunk. The call then leaves the AT on an ATC trunk directly connected to an IEC.
- The call can leave the EASP over an ATC trunk directly connected to an IEC.

In an Equal Access environment, an LBR is connected to a host EAEO. This EAEO must be configured as an EASP to allow FGD calls to pass through the AT.

EASP to route FGC calls

There are changes to the FGC call configuration when an EASP is added as an alternative EAEO. Figure 3-14 shows the possible EASP FGC switching configurations.

Figure 3-14
EASP (FGC configuration)



There are two types of FGC calls: operator and IT. An FGC IT call enters the EASP on an IT trunk. The call can leave the EASP in one of the two following ways:

- If the call is routed through an AT, it leaves the EASP on an IT trunk. When the call leaves the AT, it is routed over an ATC trunk.
- If the call is routed directly to an IEC, it leaves the EASP on an ATC trunk.

NTX803AA - Equal Access Alternate Switching Point (continued)

For an FGC operator call, the call leaves the EAEO on an operator trunk and enters the EASP on an SC trunk. The call can leave the EASP in one of the two following ways:

- If the call is routed through an AT, it leaves the EASP on an operator trunk and enters the AT on an SC trunk. When the call leaves the AT, it is routed over an operator trunk.
- If the call is routed directly to the IEC, it leaves the EAEO on an operator trunk.

FGC operator calls in an EASP are routed to an outgoing operator trunk with no special treatment in subtable STDPRTCT.STDPRT.

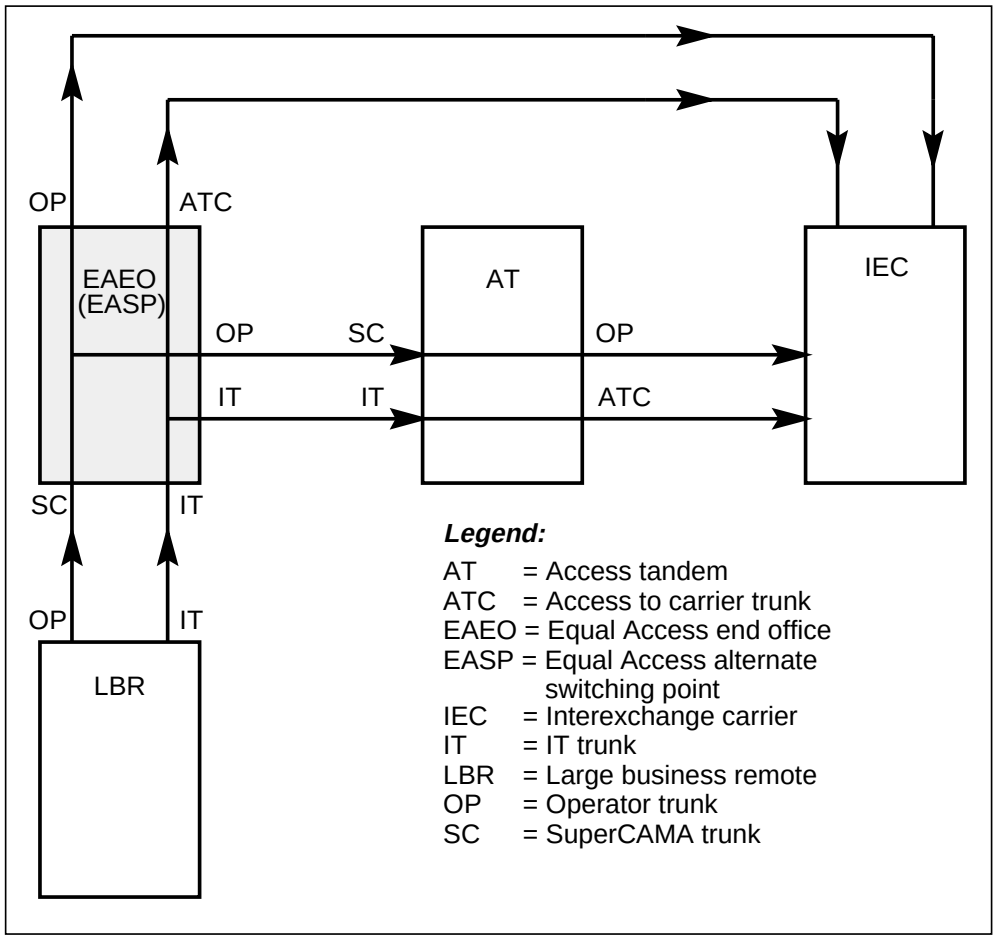
If double information digits are used, the SC trunk entering the EASP should be datafilled in table TRKGRP (SC) as follows: field SIGFMT should be set to BELL and field GRPTYPE should be set to OSS. See table TRKGRP (SC) for more information.

All IT and ATC trunk groups for FGC calls should be datafilled as described in feature package NTX186AB - Equal Access End Office.

LBR to route FGC calls

The configuration for an FGC call when there is an LBR involved differs from the previously explained FGC call scenarios. Figure 3-15 shows the possible LBR FGC switching configurations.

Figure 3-15
LBR (FGC configuration)



All FGC operator and IT calls originating in an LBR are passed through an EASP before going through an AT or directly to an IEC. An FGC IT call enters the EASP on an IT trunk. The call can leave the EASP in one of the two following ways:

- If the call is routed through an AT, it leaves the EASP on an IT trunk. When the call leaves the AT, it is routed over an ATC trunk.
- If the call is routed directly to an IEC, it leaves the EASP on an ATC trunk.

NTX803AA - Equal Access Alternate Switching Point (continued)

For an FGC operator call, the call leaves the LBR on an operator trunk and enters the EASP on an SC trunk. The call can leave the EASP in one of the two following ways.

- If the call is routed through an AT, it leaves the EASP on an operator trunk and enters the AT on an SC trunk. When the call leaves the AT, it is routed over an operator trunk.
- If the call is routed directly to the IEC, it leaves the EAEO on an operator trunk.

Package limitations and restrictions

The following limitations and restrictions apply to this feature package:

- In some cases, both local and Equal Access calls are carried by a single trunk group between an EAEO and an EASP. This traffic must be combined on an IT trunk group because local trunks (TI, TO, and T2) do not support Equal Access calls. The pad values used depend on the originator and the terminator of a call and must be set to the same value in the EAEO as in the EASP for both local and Equal Access calls. This restriction also applies in an LBR environment.
- On FGC OSS calls, outpulsing a single ANI information digit is not supported.

Feature interactions

Feature interactions are not applicable for this feature package.

Activation/deactivation by the end user

Activation/deactivation is not applicable for this feature package.

Billing

Equal Access billing requirements are not changed by the EASP. No billing is done in the EASP.

Datafilling office parameters

There are no office parameters associated with this feature package.

Datafill sequence

An EASP is a special type of EAEO and thus must be datafilled as an EAEO, as described in feature package NTX186AB - Equal Access End Office. The following tables require datafill specific to an EASP. The tables are listed in the order in which they are to be datafilled.

NTX803AA - Equal Access Alternate Switching Point (continued)

Datafill tables required for NTX803AA - Equal Access Alternate Switching Point			
Table	**Form**	**NTP**	**Purpose of table**
TRKGRP (IT)	2156F	297-1001-451	Table TRKGRP (IT) (IT trunk group) contains information about each IT trunk group in the office.
TRKGRP (OP)	2156H	297-1001-451	Table TRKGRP (OP) (outgoing and two way from local or toll to TOPS/TSPS trunk group) contains information about each operator trunk group.
TRKGRP (SC)	2156J	297-1001-451	Table TRKGRP (SC) (two way or incoming from North AMR5 and CAMA trunk group) is required in toll or combined local/toll switching units for SC trunk groups.
STDPRTCT.STDPRT	2467A-B	297-1001-451	Subtable STDPRTCT.STDPRT (standard pretranslator) is the first table to be indexed by the received leading digits when the originating line attribute (from table LINEATTR) or trunk (from table TRKGRP) specifies a pretranslator name.

Datafilling table TRKGRP (IT)

The following procedure shows the datafill for table TRKGRP (IT). This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields. Separate versions of this table must be completed for two-way and incoming IT trunks. See explanations of fields for details.

Datafilling table TRKGRP (IT)		
Field	**Subfield**	**Explanation and action**
GRPKEY		*Group key* This field contains subfield CLLI.
	CLLI	*Common language location identifier* Enter the code which represents the trunk group in table CLLI.
GRPINFO		*Variable group data* When GRPTYP=IT, this field consists of the following subfields.

-continued-

NTX803AA - Equal Access Alternate Switching Point (continued)

Datafilling table TRKGRP (IT) (continued)

Field	Subfield	Explanation and action
	GRPTYP	*Group type* Enter IT, the trunk group type.
	TRAFSNO	*Traffic separation number* For two-way IT, enter the incoming and outgoing traffic separation number (0 to 127) assigned to the trunk group. For incoming IT, enter the incoming traffic separation number (0 to 127). If not required, enter 0 (zero). If the two-way IT switching unit has the Traffic Separation Peg Count feature package, enter 1 to the lower value of parameters TFAN_IN_MAX_NUMBER and TFAN_OUT_MAX_NUMBER in table OFCENG. For an incoming IT unit, enter 1 to the value of parameter TFAN_IN_MAX_NUMBER in table OFCENG. For two-way IT switching units without the Traffic Separation Peg Count feature package, enter a number from 1 to 15. For incoming IT units, enter 0 to 15. It is recommended that incoming and outgoing traffic separation numbers 1 to 9 be reserved for generic traffic separation numbers.
	PADGRP	*Pad group* Enter the name of the pad group assigned to the trunk group in table PADDATA.
	NCCLS	*Operational measurements no circuit class* For two-way IT units, enter the operational measurements no circuit class to indicate which OM register is to increase when treatment GNCT occurs. The valid entries are: NCBN, NCID, NCIM, NCIT, NCLT, NCOF, NCON, NCOT, NCTC, or NOSC. For incoming IT units, this field is not required. Enter NCRT (no circuit). The initial value is NCRT.
	DIR	*Direction* Enter the direction of traffic flow, two way (2W) or incoming (IC). If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.

-continued-

NTX803AA - Equal Access Alternate Switching Point (continued)

Datafilling table TRKGRP (IT) (continued)

Field	Subfield	Explanation and action
	TRAFCLS	*Traffic usage class* Enter the traffic usage class assigned to the trunk group.
	SELSEQ	*Select sequence* For incoming trunks, enter MIDL. For two-way trunks, enter the selection sequence.
	CONNGNPA	*Connecting NPA* Enter the three-digit NPA code of the switching unit where the outpulsed digits are translated.
	PRTNM	*Standard pretranslator table name* Enter the name of the standard pretranslator table if standard pretranslation is required, otherwise enter NPRT. If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.
	SCRNCL	*Class of service screening table name* Enter the name of the screening table if class of service screening is required, otherwise enter NSCR.
	SNPA	*Serving NPA* Enter the three-digit serving NPA code for the trunk group. If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.
	TERMTC	*Terminating toll center* This field is not applicable for incoming IT trunks. Enter 000. For two-way trunks, if the end office where the outpulsed digits are translated is assigned a terminating toll center code, enter this code. Otherwise, enter 000.
	TOLLCOMP	*Toll completing* This field is not applicable for incoming IT trunks. Enter N. For two-way trunks, enter Y if the trunk group is toll completing. Otherwise, enter N.

-continued-

NTX803AA - Equal Access Alternate Switching Point (continued)

Datafilling table TRKGRP (IT) (continued)

Field	Subfield	Explanation and action
	CCWKVLD	Carrier connect wink Enter N to indicate that the carrier connect wink in Equal Access international calls should not be regenerated. Otherwise, enter N.
	OPTION	*Option* If applicable, enter the option assigned to this trunk group.

End

Datafill example for table TRKGRP (IT)

The following example shows sample datafill for table TRKGRP (IT).

Datafill example for table TRKGRP (IT)

Example of a MAP display:

```
GRPKEY
                                                    GRPINFO
-------------------------------------------------------------

TVEROG
    IT O TLA NCRT IC NIL MIDL 619 PEA NSCR 619 000 N N $
```

Datafilling table TRKGRP (OP)

The following procedure shows the datafill for table TRKGRP (OP). This procedure contains only those fields that apply to this package. See *Common Customer Data Schema,* 297-1001-451, for a description of the other fields.

Datafilling table TRKGRP (OP)

Field	Subfield	Explanation and action
EADATA		*Equal Access data* This field is composed of the following subfields.
	EA	*Equal Access selector* Enter Y when Equal Access signaling (double ANI digits) is required. Otherwise, enter N.

-continued-

Datafilling table TRKGRP (OP) (continued)		
Field	**Subfield**	**Explanation and action**
	EAOSS	*Exchange access operator services signaling* Enter Y if EAOSS is to be used on the trunk. Otherwise, enter N. This field is displayed only when EA = Y.
	RTEVIAAT	*Route via access tandem* Enter Y if the trunk is between an EAEO and a TOPS AT. Otherwise, enter N. This field is displayed only when EA = Y.
End		

Datafill example for table TRKGRP (OP)

The following example shows sample datafill for table TRKGRP (OP). Trunk LNTOPS2 is located between an EAEO and a TOPS AT (RTEVIAAT = Y). It requires Equal Access signaling. The last three entries show the EA, EAOSS, and RTEVIAAT fields.

Datafill example for table TRKGRP (OP

Example of a MAP display:

```
 GRPKEY
                                                          GRPINFO
-------------------------------------------------------------------
LNTOPS2
  OP 11 TLD NCRT SP MIDL NCN MIX REV TERMHOLD N OG Y Y Y $
```

Datafilling table TRKGRP (SC)

The following procedure shows the datafill for table TRKGRP (SC). This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

NTX803AA - Equal Access Alternate Switching Point (continued)

Datafilling table TRKGRP (SC) Field	Subfield	Explanation and action
GRPKEY		*Group key* This field contains subfield CLLI.
	CLLI	*Common language location identifier* Enter the code that represents the trunk group in table CLLI.
GRPINFO		*Variable group data* When GRPTYP=SC, this field consists of the following subfields.
	GRPTYP	*Group type* Enter SC, the trunk group type.
	TRAFSNO	*Traffic separation number* Enter the incoming or incoming and outgoing traffic separation number (0 to 127) assigned to the trunk group. If not required, enter 0 (zero). If the switching unit has the Traffic Separation Peg Count feature package, enter 1 to the lower value of parameters TFAN_IN_MAX_NUMBER and TFAN_OUT_MAX_NUMBER in table OFCENG. For switching units without the Traffic Separation Peg Count feature package, enter a number from 1 to 15. It is recommended that incoming and outgoing traffic separation numbers 1-9 be reserved for generic traffic separation numbers.
	PADGRP	*Pad group* Enter the name of the pad group assigned to the trunk group in table PADDATA.
	NCCLS	*Operational measurements no circuit class* Enter NCRT (no circuit). This field is not required for incoming trunk calls.
	TRAFCLS	*Traffic usage class* Enter the traffic usage class assigned to the trunk group.
	ONI	*Operator number identification* Enter Y when traffic on the trunk group is 100 percent ONI traffic. Otherwise, enter N.

-continued-

NTX803AA - Equal Access Alternate Switching Point (continued)

Datafilling table TRKGRP (SC) (continued)

Field	Subfield	Explanation and action
	SNPA	*Serving NPA* Enter the three-digit serving NPA code to which the trunk group belongs. If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.
	PRTNM	*Standard pretranslator table name* If standard pretranslation is required, enter the name of the standard pretranslator table to which digit translation is to route after the receipt of one digit. If pretranslation is not required, enter NPRT. If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.
	NODIGRTE	*No digit route* Enter the position (RTE1, RTE2, RTE3, or RTE4) in table POSITION to which all OA calls are routed. If the entry is NONE, all OA calls will be routed to the position CAMA in table POSITION. If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.
	NODIGCTP	*No digit call type* Enter the type of call to be assigned to calls with no incoming digits (seizure only): NP (no prefix), DD, or OA.
	TRTMTSUP	*Treatment supervision* Enter the type of supervision required when translation is routed to a treatment, tone, or announcement: off-hook (OFFHOOK), on-hook (ONHOOK), or off-hook wink (OFFHKWK).
	NPRETSUP	*No prefix return supervision* Enter the return supervision required on no prefix type of calls: off-hook (OFFHOOK), on-hook (ONHOOK), or off-hook wink (OFFHKWK).

-continued-

NTX803AA - Equal Access Alternate Switching Point (continued)

Datafilling table TRKGRP (SC) (continued)

Field	Subfield	Explanation and action
	NOBILLCD	*Number of bill codes* Enter the number of bill codes plus spares to be reserved in table BILLCODE.
	ANISEIZ	*ANI seizure timing* Enter the time in seconds (2 to 30) that the trunk has to wait for reception of first ANI digit or signal. If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.
	ANIPDIAL	*ANI partial dialing* Enter the time in seconds (2 to 30) that the trunk has to wait for reception of each ANI signal or digit but the first. If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.
	DIR	*Direction* Enter IC, the direction of the traffic flow. If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.
	SELSEQ	*Select sequence* Enter MIDL. When the trunk group is incoming (that is, when DIR=IC), sequential selection does not apply.
	DIGSOUT	*Digits outpulsed* Enter 0. This subfield is reserved for future use.
	SDATA	*Signaling data* This subfield consists of the following subfields.

-continued-

NTX803AA - Equal Access Alternate Switching Point (continued)

Datafilling table TRKGRP (SC) (continued)

Field	Subfield	Explanation and action
	SIGFMT	*Signaling format* Enter BELL, the signaling formation used for this feature package. If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.
	GRPTYPE	*Group type* Enter OSS if the start signal for DD calls is ST and two information digits are expected.
	DEFANIFL	*Default ANI fail* This field determines the route to be taken by translations when no ANI (ANI FAIL) is received. If the translation is to route to position CAMA in table POSITION, enter CAMA. If the translation is to route to position TSPS in table POSITION, enter TSPS. If the translation is to route to a hard-coded toll denied treatment, enter TREAT. This treatment will route originator to reorder.
	IC_ROUTE	*Independent carrier route* When GRPTYPE=OSS, enter the position, known to table POSITION field POS, to specify the route to be taken if the call is identified by the start signal as an independent IEC Equal Access call.
	ANITYPE	*ANI request signal* Enter the type of ANI request signal: wink (WK) or reversal (REV). If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.

-continued-

NTX803AA - Equal Access Alternate Switching Point (continued)

Datafilling table TRKGRP (SC) (continued)

Field	Subfield	Explanation and action
	RECORDNP	*Record calls of type NP* This field is not required for this feature package. Enter NP.
	SPLOOKUP	*Special lookup* If the non-EAEO is not capable of outpulsing the correct ANI information digit, and all incoming calls on the trunk group require a lookup in table SPLANIN, enter Y. Otherwise, enter N.
End		

Datafill example for table TRKGRP (SC)

The following example shows sample datafill for table TRKGRP (SC).

Datafill example for table TRKGRP (SC)

Example of a MAP display:

```
 GRPKEY
                                                          GRPINFO
-------------------------------------------------------------------

SCTRK
 SC 44 NPDGP NCRT NIL N 619 TCA3 TSPS DD ONHOOK ONHOOK 30 5 5 IC
    LIDL 0 BELL OSS CAMA NONE RTE2 REV Y NP N $
```

Datafilling subtable STDPRTCT.STDPRT

Subtable STDPRTCT.STDPRT is the first table to be indexed by the received leading digits when the originating line attribute (from table LINEATTR) or trunk (from table TRKGRP) specifies a pretranslator name.

The following procedure shows the datafill for subtable STDPRTCT.STDPRT. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

NTX803AA - Equal Access Alternate Switching Point (continued)

Datafilling subtable STDPRTCT.STDPRT

Field	Subfield	Explanation and action
FROMDIGS		*From digits* Enter the digit(s) to be translated. If the entry is a block of consecutive numbers, enter the first number in the block.
TODIGS		*To digits* If FROMDIGS is a block of consecutive numbers, enter the last number in the block. Otherwise this field equals FROMDIGS.
PRETRTE		*Pretranslation route* This field consists of the following subfields.
	PRERTSEL	*Pretranslator route selector* Enter ET, the pretranslator route selector for FGD calls in an EASP.
	TYPCALL	*Type of call* Enter NP, because no billing is done in the EASP.
	NOPREDIG	*Number of prefix digits* Enter the number of prefix digits (0 to 7).
	CARRNAME	*Carrier name* Enter the name of the carrier, as defined in table OCCNAME, to which the call is offered.
	RTEAREA	*Route area* This subfield is composed of subfield RTEPRSNT.
	RTEPRSNT	*Route present* Enter Y to datafill subfields EXTRTEID, TABID, KEY, MINDIGSR, and MAXDIGSR. Otherwise, enter N.
	EXTRTEID	*External route ID* This subfield is composed of subfields TABID and KEY.
	TABID	*Table identifier* Enter an office route table name for further call routing.
	KEY	*Index* Enter the office route index (0 to 1023) that the translation is routed to.

-continued-

NTX803AA - Equal Access Alternate Switching Point (end)

Datafilling subtable STDPRTCT.STDPRT (continued)

Field	Subfield	Explanation and action
	MINDIGSR	*Minimum digits received* Enter the minimum number of digits (1 to 18) to be collected before routing the call.
	MAXDIGSR	*Maximum digits received* Enter the maximum number of digits (1 to 24) to be collected before routing the call.
		End

Datafill example for subtable STDPRTCT.STDPRT

The following example shows sample datafill for subtable STDPRTCT.STDPRT.

Datafill example for table STDPRTCT.STDPRT

Example of a MAP display:

```
      FROMDIGS        TODIGS
                                                PRETRTE
________________________________________________________
        099777        099777
                   ET NP 0  CARR1  Y   OFRT 777  6 6
```

Translation verification tools

Translation verification tools are not applicable for this package.

Service orders

Service orders are not applicable for this package.

NTX735AA - Flexible ANI

Package name

Flexible ANI

Package number

NTX735AA

Feature number

The NTX735AA feature package consists of the following feature:

NTX735AA feature number and name

Feature number	Feature name
BR0713	Flexible ANI Information Digit Assignment

BCS applicability

BCS34 and up

Feature package prerequisites

The NTX735AA - Flexible ANI requires the following feature packages:

Feature package prerequisites

Feature package	Feature package name
NTX000AA	Bilge
NTX001AA	Common Basic
NTX901AA	Local Features I

Description

Feature package NTX735AA - Flexible ANI implements the flexible ANI (FANI) option. With this option, an end office can let the IEC or OSS know which feature is associated with an originating line by assigning ANI information digits (two-digit code) to an originating station. The digits are then transmitted to an IEC or OSS as part of the ANI sequence.

NTX735AA - Flexible ANI (continued)

Theory of operation

To indicate that the IEC or OSS wants to receive the FANI digits, field FANI in table OCCINFO is set to Y. The FANI digits are stored in field FANIDIGS in table LINEATTR. This field contains the ANI digit pairs that IECs associate with lines.

The translation process for this feature package is as follows. If a call is identified as Equal Access, the end office looks up table OCCINFO for the IEC or OSS specified to see if field FANI is checked. If FANI is set to Y, the ANI information digits are modified to include the FANI digits and are then sent to the carrier. Otherwise, normal ANI (non-FANI) digits are sent. If an IEC or OSS is currently datafilled not to receive ANI (field ANI = N), then FANI digits cannot be sent (FANI = N).

The FANI option can be assigned with SERVORD if the originator is a non-MDC line. SERVORD then assigns a line attribute index with the FANI digits datafilled in field FANIDIGS of table LINEATTR.

Option FANI applies to outgoing Equal Access FGD calls, intra-LATA corridor calls, calls with OSS signaling, and calls with modified OSS signaling. It does not apply to AMR5 calls.

Package limitations and restrictions

The following limitations and restrictions apply to the NTX735AA - Flexible ANI feature package:

- If a FANI digit pair is associated with a VFG but the IEC or OSS for the VFG cannot receive FANI digits, then the original ANI pair associated with the originating station is sent instead. However, because there are no ANI digits associated with MDC lines, the default pair ‘00’ is sent.
- This feature does not allow FANI information digit pairs to be assigned to individual MDC lines. FANI digit pairs for MDC lines are picked up through their associated VFGs or by routing through the POTS network.
- LEAS calls do not receive FANI capabilities through this feature.
- P2/PX trunks from a PBX are not supported, and will not receive FANI capabilities through this feature.
- Field FANI in table OCCINFO cannot be set to Y if field ANI is set to N.

Feature interactions

There are no feature interactions for this feature package.

NTX735AA - Flexible ANI (continued)

Activation/deactivation by the end user

The user implements the FANI capability by adding option FANI with SERVORD.

Billing

NTX735AA - Flexible ANI does not affect billing.

Datafilling office parameters

NTX735AA - Flexible ANI does not affect office parameters.

Datafill sequence

The following tables require datafill to implement this feature package. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for NTX735AA - Flexible ANI

Table	Form	NTP	Purpose of table
OCCINFO	2355A-B	297-1001-451	Table OCCINFO (other common carrier information) defines the attributes for the carriers serving a DMS switch and screens calls for carrier compatibility.
LINEATTR	2208A-B	297-2101-451	Table LINEATTR (line attribute) defines the line attribute indexes that are applicable to an office. Line attributes are actually assigned to regular lines in table LENLINES, and to MDC lines and attendant consoles in table IBNXLA.

Datafilling table OCCINFO

Table OCCINFO defines the attributes for carriers serving the end office and screens calls for carrier compatibility. For example, table OCCINFO allows international traffic to be sent only to carriers capable of handling such traffic.

The following procedure shows the datafill for table OCCINFO. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

NTX735AA - Flexible ANI (continued)

Datafilling table OCCINFO

Field	Subfield	Explanation and action
FANI		*Flexible ANI* Enter Y if the carrier can receive flexible ANI information digits instead of standard ANI information digits. Otherwise, enter N. This field must be set to N if field ANI = N.

Datafill example for table OCCINFO

The following example shows sample datafill for table OCCINFO. In this example, two carriers are serving the EAEO, C111 and C222. Both carriers are assigned the FANI option.

Datafill example for table OCCINFO

Example of a MAP display:

```
CARRNAME CARRNUM ACCESS ORIGCARR INTER INTNTL INTRA ANI FANI
ONISCRN AD1 OVERLAP INTERS INTRAS TERMREC OCCSEPNO OPSIG PICIND
NOA950 INCCPN DTMFIND OPSERV CACBLOCK CTDOA CMCMON SCRNWATS
CRMCRA ATPINCL INTRAOPR
-------------------------------------------------------------------
 C111    0111   EAP     Y      Y      Y     N   Y    Y
N     Y      Y     Y      Y    LONG       O    FGRPC    Y
 N      N     N       N       N      N      N      N
  Y    N        N
 C222    0222   EAP     Y      Y      N     Y   N    Y
N    N       Y     Y      N    SHORT      O    FGRPC    N
 N    N       N       N       N      N      N      N
  Y    N        N
```

Datafilling table LINEATTR

The following procedure shows the datafill for table LINEATTR. This procedure contains only those fields that apply to this package. See *Local Customer Data Schema*, 297-2101-451, for a description of the other fields.

Datafilling table LINEATTR

Field	Subfield	Explanation and Action
FANIDIGS		*FANI digits* Enter the FANI digits (00 to 99) associated with a feature. The default is 00.

Datafill example for table LINEATTR

The following example shows sample datafill.

```
Table LINEATTR

LAIDX      LCC
CHGCLSS COST SCRNCL LTG STS  PRTNM LCANAME LCABILL
ZEROMPOS HOT TRAFSNO MRSA  SFC   LATANM  MDI IXNAME
DGCLNAME FANIDIGS RESINF
-------------------------------------------------------
    0      1FR
 NONE    NT   SPOT   0  619   POT1   LPOT     N
 RTE4     N     0    NIL  NILSFC NILLATA   0   NIL
  NIL       00       N
```

Translation verification tools

There is no translation verification tool available for this package.

Service orders

A new SERVORD option, FANI, is now supported and can be added to a new or changed line. Option FANI associates the FANI digits with a line via line class codes. The FANI digits to be associated with that line are entered in subfield DIGITS.

If a line has no associated FANI digit pair, 00 should be entered as the default. Digits 00 is a signal to call processing to use normal ANI digits.

Any two-digit pair in the range 00 to 99 may be used as FANI digits even if that digit pair is already used to signify a different ANI code. The operating company should coordinate what FANI codes are used and for what purpose.

The user may enter the FANI digit pair as an option. When the FANI option is entered, the digits are used as additional criteria to search for the corresponding LINEATTR index. If the FANI option is not entered, the default digits 00 are used for the search.

Service order prompts

The following table shows the SERVORD prompts used to add option FANI. For more information about service orders, see *SERVORD Service Order and Query System Reference Manual*, 297-2101-808, and *Integrated Services Digital Network Service Orders for ISDN Terminals Reference Manual*, 297-2401-310.

NTX735AA - Flexible ANI (continued)

Service order prompts for option FANI		
Prompt	**Valid input**	**Explanation**
OPTION	FANI	When used with the NEW, ADO, CHF, or DEO command, this input assigns or deletes FANI to or from non-MDC lines.
DIGITS	00-99	This input specifies the FANI digits to be associated with the line. These digits are then stored in field FANIDIGS in table LINEATTR. If no FANI digits are to be assigned, enter 00, the default. Regular ANI digits are the sent.

Adding FANI to a non-MDC line

The following example shows FANI being added to a non-MDC station using the ADO command.

Adding FANI to a non-MDC line using SERVORD

Input and response

*Input in **Prompt** mode*

```
>ADO
 SONUMBER:      NOW  90  1  2 AM
>$
 DN_OR_LEN:
>7211000
 OPTION:
>FANI
 DIGITS:
>98
 OPTION:
>$
```

*Input in **No-prompt** mode*

```
>ADO $ 7211000 FANI 98 $
```

Deleting FANI to a non-MDC line

The following example shows FANI being deleted from a non-MDC line using the DEO command.

Deleting FANI to a non-MDC line using SERVORD

Input and response

*Input in **Prompt** mode*

```
> DEO
 SONUMBER:     NOW  90  1  2 AM
>$
 DN_OR_LEN:
>7211000
 OPTION:
>FANI
 OPTION:
>$
```

*Input in **No-prompt** mode*

```
>DEO $ 7211000 FANI $
```

Datafilling an access tandem office

This chapter describes Equal Access packages that are available for access tandem offices and explains how to datafill them. Table 4-1 lists the software packages described in this chapter.

Table 4-1
Access tandem office software

Feature number	Feature name
NTX386AB	Access Tandem Switch
NTX710AB	LATA Equal Access System
NTXE14AB	CCS7 ISUP Inter-LATA Connection AT
NTX829AA	Intra-LATA PIC for LEAS
NTX211AB	FGB AMA Tandem (ATT Format)
NTX843AB	Cellular Interconnect
NTXE67AA	Equal Access Intermediate Tandem

NTX386AB - Access Tandem Switch

Package name

Access Tandem Switch

Package number

NTX386AB

Feature numbers

The NTX386AB feature package consists of the following features:

NTX386AB feature numbers and names

Feature number	Feature name
AL0425	ATC Tandem
BC1028	Equal Access: Access Tandem - Translations and Carrier Screening
BC1029	Equal Access: Access Tandem - Trunk to/from Equal Access End Office
BC1030	Equal Access: Access Tandem - Trunk to/from Interexchange Carrier
BC1031	Equal Access: Access Tandem - Terminating Billing
BC1032	Equal Access: Access Tandem - New Treatments
BC1034	Equal Access: Access Tandem - New Logs
BC1035	Equal Access: Access Tandem - Operational Measurements
BC1380	Equal Access CC Real Time Improvement
NC0335	FGD Carrier Identification Code Expansion
NC0428	FGD Carrier Identification Code Expansion

BCS applicability

BCS36 and up

NTX386AB - Access Tandem Switch (continued)

Feature package prerequisites

This package requires the following feature packages:

Feature package prerequisites

Feature package	Feature package name
NTX000AA	Bilge
NTX001AA	Common Basic
NTX044AA	Central Automatic Message Accounting
NTX098AA	Bellcore CAMA Format
NTX290AA	Tandeming/Supervision and Treatment
NTX801AA	Toll Features I

Description

The NTX386AB - Access Tandem Switch feature package allows DMS-200 switches (access tandems (AT)) to originate, route, and bill calls to interexchange carriers (IEC) and international carriers (INC) in accordance with the Equal Access plan (EAP).

Theory of operation

The following capabilities, provided by the NTX386AB - Access Tandem Switch feature package, are described in this section:

- translations and carrier screening
- trunking
- terminating billing
- treatments
- logs
- operational measurements (OM)
- access-to-carrier (ATC) tandem
- carrier identification code (CIC) expansion

Translations and carrier screening

This feature package provides the DMS-200 switch with digit translations and carrier screening capabilities for the Equal Access environment. The AT can receive and translate EAP signaling from an Equal Access end office (EAEO), and provide access to EAP carriers. The AT can also provide connected EAEOs and non-EAEOs with access to interim, transitional, and feature group C (FGC) carriers.

See chapter 4 of *Equal Access Product Guide*, 297-2101-011, for a description of the outpulsing for Equal Access calls as well as a description of the digits that the AT expects to receive from a connected EAEO.

Trunking

This feature package implements Equal Access trunk groups between the end office and the AT. Equal Access traffic from the end office to the AT is carried over three types of trunk groups:

- intertoll (IT)
- SuperCAMA (SC)
- Traffic Operator Position System (TOPS)

These trunk groups are combined trunk groups; they can handle Equal Access traffic as well as the type of traffic the trunk groups normally handle. For each call, the AT determines if the call is Equal Access.

This feature package also implements Equal Access trunk groups between the AT and the carrier. These new trunk groups, called ATC trunk groups, are necessary because the EAP requires different intersystem signaling. The differences include additional winks, regeneration of these winks to end offices, and recognition of winks of non-standard duration and timing. Dedicated trunk groups are required between the AT and the carrier for Equal Access traffic.

Terminating billing

This feature package implements terminating billing for Equal Access calls. Terminating access records are created for all completed Equal Access calls routed to the AT from an IEC or INC. All the billing records produced are in the standard automatic message accounting (AMA) format. Terminating billing is described in the billing section on page 4-13.

Treatments

This feature package provides the AT with treatments for call failures and trunk failures in the Equal Access environment. Treatments are provided for failures between the AT and the IEC/INC, and the AT and the EAEO.

> ***Note:*** This document distinguishes between a treatment and a disposition for the treatment. A treatment is a software-generated reaction to a call-failure condition; a disposition is a user-defined action in response to a problem.

Logs

This feature package provides the AT with the required log reports for the Equal Access environment. A log is generated when the AT does not

NTX386AB - Access Tandem Switch (continued)

receive the first start pulsing wink on IEC calls and either the first or second start pulsing winks on INC calls. Also, logs are generated when the state changes on the trunk between the AT and the IEC or INC. See *Equal Access Maintenance Guide*, 297-2101-500, for a list of log reports specific to Equal Access. See *Log Report Reference Manual*, 297-1001-840, for a description of log reports.

Operational measurements

This feature package provides the AT with the required OM for the Equal Access environment. In the Equal Access environment, OM are generated for each carrier. OM needed on the trunks between offices are handled by the existing trunk measurements. See *Equal Access Administration Guide*, 297-2101-300, for a list of OM specific to Equal Access.

Access-to-carrier tandem

This feature prevents package NTX186AB - Equal Access End Office from tandeming an incoming feature group D (FGD) call to an outgoing or two-way ATC trunk. This feature is implemented by preventing the EAEO from outpulsing the incoming digits. This feature also disables the billing function and reports an error when an attempt to tandem an FGD call is made in an end office not equipped with the NTX386AB - Access Tandem Switch feature package.

Carrier identification code expansion

Currently, each carrier is identified by a three-digit code, called the CIC. Because CICs in the series 10X, 15X, and 16X are not used, only up to 970 CICs can be assigned to an FGD carrier.

To prepare for the expected exhaustion of available CICs, this feature package expands the number of assignable CICs to 10 000. The format of the carrier access code (CAC), which is the dialing sequence used to access the carrier, is expanded from 10XXX to 101XXXX, where XXX and XXXX are the CICs. This feature package supports the CIC expansion for plain old telephone service (POTS) and Meridian Digital Centrex environments. It also supports ISDN subscribers which follow standard Equal Access translations.

The transition from three- to four-digit CICs is implemented in three phases. They are described in table 4-2.

Table 4-2
Conversion phases to implement four-digit CICs

Conversion period		Valid CACs	Invalid CACs	Number of CICs available
Current		10XXX	1010X 1015X 1016X	970
Permissive	(part 1)	10XXX 1010XXX	1010X 1015X 1016X	970
	(part 2)	10XXX 1010XXX 1015XXX 1016XXX	1010X 1015X 1016X	2970
Final		101XXXX	10XXX	10 000

During the first part of the permissive period, the AT can process CACs of the form 10XXX and 1010XXX. The three-digit CIC assigned to each carrier is expanded to four digits by adding a leading zero. In this period, CACs of the form 1010X, 1015X, 1016X, 1015XXX, and 1016XXX are unassigned. If the subscriber dials an unassigned code, the call is sent to treatment.

In the second part of the permissive period, CACs of the form 1015XXX and 1016XXX are assigned. Also, CACs of the form 1010X, 1015X, and 1016X are still unassigned to help the AT distinguish between three- and four-digit CICs. When 10, 15, or 16 appears as digits 3 and 4 in the CAC, the AT assumes that a four-digit CIC has been dialed. Any other sequence is assumed to be a three-digit CIC.

In the final period, only four-digit CICs are accepted by the AT. Any call with a three-digit CIC is sent to treatment. Note that these changes are transparent to subscribers who use their primary inter-LATA carriers (PIC) to complete interexchange calls.

Network changes

The network changes for the CIC expansion are implemented in a specific order. Some of these changes are done by switch, while some changes are done by trunk group or by service control point (SCP) and signaling transfer point (STP) link. For example, an end office may be converted to accept four-digit CICs but an AT may have only a few trunk groups that accept four-digit CICs.

NTX386AB - Access Tandem Switch (continued)

The changes introduced by this feature package affect ATs only. However, other elements in the network, such as EAEOs and SCPs, will have to be updated. The following procedure lists the network changes that have to be implemented.

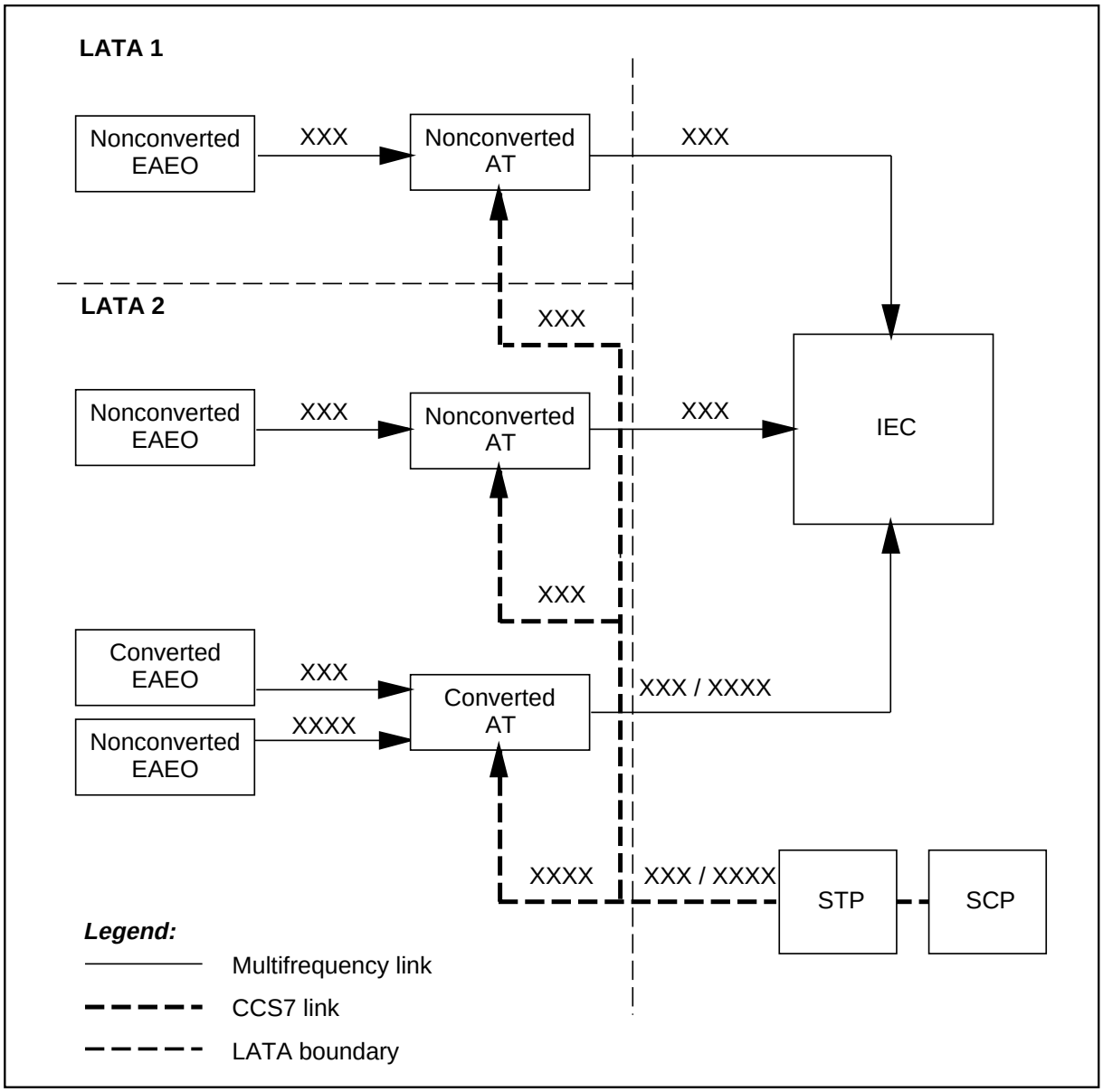
Network changes to implement Equal Access

Step	Action
1	Convert the SCP database and the service management system to store both three- and four-digit CICs and to respond with either three- or four-digit CICs.
2	Convert ATs, trunk group by trunk group, to accept four-digit CICs on trunk groups from upgraded EAEOs and also accept three-digit CICs from non-upgraded ones.
3	Convert EAEOs to accept three- and four-digit CICs during a permissive period and then accept only four-digit CICs when that period ends.
4	Convert EAEOs to transmit four-digit CICs on upgraded trunk groups to the AT.
5	For international calls only, convert IEC switches to accept four-digit CICs from upgraded trunk groups.

This feature package covers step 2. Steps 3 and 4 are described in chapter 3 of this document. Steps 1 and 5 are listed in the procedure to provide the operating company with a complete picture of the changes required.

An overview of a network undergoing conversion is shown in figure 4-1. In LATA 1, none of the EAEOs, ATs, or trunk groups have been converted to four-digit CICs. In LATA 2, one EAEO and one AT have been converted. A converted office is an office that accepts permissive or full four-digit CICs or has some trunk groups or STP/SCP links that carry four-digit CICs.

Figure 4-1
Network undergoing conversion



NTX386AB - Access Tandem Switch (continued)

Implementing four-digit CICs in an AT

During the permissive period, the AT must be able to receive both three-digit CICs from non-converted EAEOs and four-digit CICs from converted EAEOs. However, because the AT should not receive both three- and four-digit CICs on the same trunk group, it will be converted trunk group by trunk group. This feature package supports the conversion of the following trunk group types:

- IT
- SC
- TOPS

Table CICSIZE4 contains the trunk groups which use four-digit CICs. Trunk groups that do not appear in this table are assumed to use three-digit CICs. When the AT receives a CIC, it verifies that table CICSIZE4 contains the trunk group. If a four-digit CIC is received on a trunk not datafilled in table CICSIZE4, log DFIL145 is produced. If a three-digit CIC is received on a trunk group datafilled in table CICSIZE4, log DFIL146 is produced.

For calls routed to an IEC or INC, the converted AT transmits either three- or four-digit CICs, depending on whether the trunk group is datafilled in table CICSIZE4.

When full four-digit CIC conversion is achieved, all trunks at the AT carry four-digit CICs. Table CICSIZE4 then becomes useless and does not need to be consulted during translation. Office parameter EA_TAB_CICSIZE4_OBSOLETE is then set to Y to specify that table CICSIZE4 is no longer required.

Implementing the permissive dialing phase

The following table lists the actions required to implement the permissive dialing phase of the CIC expansion.

Implementing the permissive dialing phase

Step	Action
1	If there is an entry in subtable STDPRTCT.STDPRT that uses the NSC selector, datafill a corresponding entry for four-digit CICs.
2	Add tuples to subtable STDPRTCT.STDPRT for the four-digit CICs to be translated. See the example that follows this table for more information.
3	Add the trunk name to table CICSIZE4 for the trunk groups that carry four-digit CICs.

The following table shows a tuple added to subtable STDPRTCT.STDPRT. In this example, CIC 123 has been expanded to 0123.

Datafill example for subtable STDPRTCT.STDPRT

Example of a MAP display:

```
Current      080123      080123
entry             T NP 6  OFRT  202   6   6   NONE

New          0800123     0800123
entry             T NP 7  OFRT  202   7   7   NONE
```

Implementing the final dialing phase

The following table lists the actions required to implement the final dialing phase of the CIC expansion.

Implementing the permissive dialing phase

Step	Action
1	If there is an entry in subtable STDPRTCT.STDPRT that uses the NSC selector, datafill a corresponding entry for four-digit CICs.
2	Add tuples to subtable STDPRTCT.STDPRT for the four-digit CICs to be translated. See the example that follows this table for more information.
3	Revise table CICSIZE4 to add the trunk groups which carry four-digit CICs. If all trunks have been converted to carry four-digit CICs, set office parameter EA_TAB_CICSIZE4_OBSOLETE to Y. In this case, you do not need to datafill table CICSIZE4.

The following table shows a tuple added to subtable STDPRTCT.STDPRT. In this example, CIC 222 has been expanded to 0222.

NTX386AB - Access Tandem Switch (continued)

Datafill example for subtable STDPRTCT.STDPRT

Example of a MAP display:

```
Current      080222      080222
entry             T NP 6  OFRT  202   6   6   NONE


New          0800222     0800222
entry             T NP 7  OFRT  202   7   7   NONE
```

Impact of the CIC expansion

Expanding the CIC to four digits affects E800 and private virtual network (PVN) calls. A converted EAEO will be able to outpulse a four-digit CIC for E800 and PVN calls that are routed to the AT service switching point (SSP) so that the database query can be performed.

The AT SSP translates the 0ZZXXX received using the NSC selector in subtable STDPRTCT.STDPRT. The selector identifies the call as either E800 or PVN. The maximum number of digits in fields FROMDIGS and TODIGS is updated from 6 to 7 when field PRESEL = NSC. Calls of the form 0ZZXXX and 0ZZ0XXX can then be datafilled.

Office parameter SSP_NSC_CARRIER_ID holds the CIC datafilled in table OCCINFO. For 0ZZ0XXX incoming at the AT, the leading CIC digit must be stripped off before the CIC is compared with office parameter SSP_NSC_CARRIER_ID.

Package limitations and restrictions

The following limitations and restrictions apply to this feature package:

- Modifying digit translation means that the size of table LMOVCODE, which is used to determine which NXX codes do not require OCX, is reduced by 8 bytes. If the digit collection table is greater than 256 bytes, table LMOVCODE entries should be deleted to allow the data to fit.
- An international call from a rotary phone can time-out and go to reorder. This situation occurs for Equal Access multifrequency (MF) to ISUP interworking calls when feature overlap carrier selection (OCS) is enabled in the EAEO. This problem can be prevented by disabling OCS in the EAEO.

The limitations and restrictions described in the following sections apply to the NTX386AB - Access Tandem Switch feature package. They are applicable to the Canadian networks only.

800+ feature (Canada)

Equal Access is not compatible with the Canadian 800+ feature. The 800+ feature differs from the traditional 800 feature. Routing translation for 800+ calls is done in the network database outside the switch. The network database stores all the 800 numbers to simplify administration. Without the 800+ feature, an 800 number has to be entered in the translation tables of all DMS toll switches serving this number.

Note: The 800+ service is different from the enhanced 800 (E800) service.

Dynamically controlled routing (Canada)

Dynamically controlled routing (DCR) reserves idle trunks in trunk groups to provide routes for overflowing traffic. The trunks are separated by one or two links from an originating toll switch. The objective of DCR is to optimize the use of the DMS switch and trunks. With Equal Access, DCR is practically useless. Because more than one carrier will be using the operating company trunks, the switch cannot control the traffic.

Toll Call Management Services (Canada)

Toll Call Management Services (CMS) is equivalent to CLASS in the United States. It is a set of services that capitalize on the fact that information can be transmitted to the subscriber on both the calling and called line numbers. Toll CMS is primarily targeted at single-line users, such as small business and residential, giving subscribers more control over their calls. Toll CMS should not be used with Equal Access because its functionality is provided over a toll network, thus interacting directly with Equal Access.

Feature interactions

Feature interactions are not applicable for this feature package.

Activation/deactivation by the end user

Activation/deactivation is not applicable for this feature package.

Billing

Billing for NTX386AB - Access Tandem Switch is described in the following sections.

NTX386AB - Access Tandem Switch (continued)

Terminating billing

In the Equal Access environment, the AT generates terminating access records only. They are created for all Equal Access calls completed and routed directly to the AT from an IEC/INC on ATC trunk groups with field SIGTYPE set to value EAPLAN, BELLI, or BELLII. Terminating records are also created for unanswered calls, calls sent to a treatment, and calls blocked by network management under the following conditions:

- Table AMAOPTS has the OPTION field set to UNANSTOLL.
- Call codes are in the BCCODES table.

The DMS switch uses call code 119 and the associated structure codes to produce terminating access records for Equal Access calls. Structure codes are associated with each call code. The length of the call (normal or long duration) and the datafill in field TERMREC of table OCCINFO determine the structure code to be used. A call is a normal duration call when it is disconnected *before* the second midnight after it was initiated. A call is a long duration call when it is disconnected *after* the second midnight after it was initiated.

> ***Note:*** All access records produced for Equal Access calls are in the Equal Access standard AMA format.

FGD CIC expansion

The IEC/INC prefix field of the standard interexchange AMA record is modified to accommodate four-digit CICs by defining characters 1 to 4 as the IEC/INC identification. Previously, the first character was defined as padding (0). The billing records that include the IEC/INC prefix are the following:

- 110 inter-LATA station paid
- 111 inter-LATA WATS station detail
- 113 inter-LATA WATS AFR to WATS
- 114 inter-LATA WATS billing number
- 115 inter-LATA WATS AFR to DDD
- 117 inter-LATA CSDC
- 119 terminating access record
- 120 originating LATA overflow counts
- 121 CSDC terminating access record

Following is an example AMA record for an originating FGD call from a POTS line. The IEC/INC PREFIX field contains the four-digit code.

```
HEX ID:AA  STRUCTURE CODE:00625C  CALL CODE:110C
SENSOR TYPE:036C  SENSOR ID:0000000C  REC OFFICE TYPE:036C
REC OFFICE ID:0000000C  DATE:00604C  TIMING IND:00000C
STUDY IND:0000000C  ANSWER:0C  SERVICE OBSERVED:0C
OPER ACTION:0C  SERVICE FEATURE:000C  ORIG NPA:613C
ORIG NUMBER:6211233C  OVERSEAS IND:1C  TERM NPA:00613C
TERM NUMBER:8881234C  ANSWER TIME:1423651C
ELAPSED TIME:000000015C  IEC/INC PREFIX:12341C  CC
DATE:00504C
CC TIME:1345623C  ELAPSED CC:000000023C IEC/INC
EVENT STATUS:010C TRUNK GROUP NUMBER:00230C
ROUTING INDICATOR:0C DIALING INDICATOR:7C  ANI INDICATOR:1C
```

Originating overflow counts

The AT generates call code 120 (originating LATA overflow counts) for calls that cannot be completed because no outgoing trunk is available. Records are produced periodically, according to the needs of the operating company. Overflow counts are kept for each IEC and INC. An overflow count is increased whenever the system software encounters the pseudo common language location identifier (CLLI) named EAPEG in a route list, such as in table OFRT. Call code 120 contains information for up to four IECs and INCs. Structure code 00955 is used.

The EAPEG tuple always follows direct routes to the carrier. The following is an example tuple with an EAPEG entry:

```
201  (S D ATCTOINC) (S D EAPEG) $
```

A COLD RESTART must be performed after the EAPEG tuple is datafilled in table CLLI.

Billing for FGC calls

For ATC trunk groups, field SIGTYPE is set to EAPLAN in table TRKGRP to get terminating access record (call code 119) for FGC.

Billing for feature group B calls

Field FGBTRAFC is set to Y in table TRKGRP for feature group B (FGB) calls to a non-TOPS AT to get terminating billing records (call code 135). See *Automatic Message Accounting - Northern Telecom Format*, 297-1001-119, for detailed information.

NTX386AB - Access Tandem Switch (continued)

Datafilling office parameters

The following table identifies the datafill for the office parameters.

Office parameters used by Access Tandem Switch	
Table name **Parameter**	**Explanation and action**
OFCENG EA_TAB_CICSIZE4_OBSOLETE	This office parameter specifies whether table CICSIZE4 is required. Set this parameter to N during the permissive phase of the CIC expansion. During this phase, table CICSIZE4 contains trunk groups with 4-digit CICs. When all CICs are converted to 4 digits, set this parameter to Y. Table CICSIZE4 is not used when this parameter is set to Y.
OFCSTD EAEO_REC_1ST_PRE_WK_TIME	This parameter specifies the time (1 to 255), in 160-ms intervals, of the first pre-wink delay associated with outpulsing from an EAEO. The default is 100 (16 s).
OFCSTD EAEO_REC_2ND_PRE_WK_TIME	This parameter specifies the time (1 to 255), in 160-ms intervals, of the second pre-wink delay associated with outpulsing from an EAEO. The default is 175 (28 s).
OFCSTD EA_REC_MAX_WK_TIME	This parameter specifies the maximum time (1 to 255), in 160-ms intervals, for recognition of wink.
OFCVAR EA_TEST_CALL_SPILL	This parameter specifies the number, up to a maximum of 15 digits, which will be spilled on a test call and should consist of the following: ▪ 2 information digits (95 for test call) ▪ 3 digits for calling NPA ▪ 7 digits for calling number
OFCENG SSP_NSC_CARRIER_ID	This parameter holds the carrier identification code datafilled in table OCCINFO. For an incoming NSC call (NSC selector in subtable STDPRTCT.STDPRT) at the AT, the CIC is compared with this parameter.

Datafill sequence

The following tables require datafill to implement this feature package. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Access Tandem Switch

Table	Form	NTP	Purpose of table
OCCNAME	2356A-B	297-1001-451	Table OCCNAME (other common carrier name) lists the connected carriers and establishes the spelling standard for other tables requiring the carrier name.
TRKGRP (ATC)	2156AI	297-1001-451	Table TRKGRP (ATC) (AT to carrier trunk group) contains information about each ATC trunk group in the AT.
TRKGRP (IT)	2156F	297-1001-451	Table TRKGRP (IT) (IT trunk group) contains information about each IT trunk group in the AT.
TRKGRP (SC)	2156J	297-1001-451	Table TRKGRP (SC) (two-way or incoming from North America 5 and CAMA trunk group) is required in toll or combined local/toll switching units for SC trunk groups.
TRKGRP (OP)	2156H	297-1001-451	Table TRKGRP (OP) (outgoing and two way from local or toll to TOPS/TSPS trunk group) contains information about each OP trunk group.
TRKSGRP	2151A-F	297-1001-451	Table TRKSGRP (trunk subgroup) lists supplementary information for each subgroup assigned to one of the trunk groups listed in table TRKGRP.
OFRT	2431A-C	297-1001-451	Table OFRT (office route) contains route lists that are pointed to from tables other than the home numbering plan area (NPA) code subtable (HNPACONT.HNPACODE) or the foreign NPA code subtable (FNPACONT.FNPACODE).
OCCINFO	2355A-B	297-1001-451	Table OCCINFO (other common carrier information) defines the attributes for the carriers serving a DMS switch and screens calls for carrier compatibility.

- continued -

NTX386AB - Access Tandem Switch (continued)

Datafill tables required for Access Tandem Switch (continued)			
Table	**Form**	**NTP**	**Purpose of table**
STDPRTCT	2465	297-1001-451	Table STDPRTCT (standard pretranslator control) lists the name of each standard pretranslator subtable defined by the operating company.
STDPRTCT. STDPRT	2467A-B	297-1001-451	Subtable STDPRTCT.STDPRT (standard pretranslator) is the first table to be indexed by the received leading digits when the originating line attribute (from table LINEATTR) or trunk (from table TRKGRP) specifies a pretranslator name.
CICSIZE4		297-1001-451	Table CICSIZE4 (carrier identification codes with 4 digits) identifies trunk groups with 4-digit CICs. This table is used only during CIC expansion transitional phase.
End			

Datafilling table OCCNAME

Table OCCNAME lists the carriers serving the AT. It also establishes the spelling standard for other tables requiring the carrier name (OCCINFO, TRKGRP, and STDPRTCT.STDPRT). The following procedure shows the datafill for table OCCNAME. See *Common Customer Data Schema*, 297-1001-451, for a detailed description of the table.

Datafilling table OCCNAME		
Field	**Subfield**	**Explanation and action**
OCCNAME		*Other common carrier name* Enter the carrier name or a 1- to 16-character alphanumeric abbreviation of the carrier name.

Datafill example for table OCCNAME

The following example shows sample datafill for table OCCNAME. In this example, four carriers serve the AT.

Datafill example for table OCCNAME

Example of a MAP display:

```
OCCNAME

C111
C222
C333
C444
```

Datafilling table TRKGRP (ATC)

Table TRKGRP (ATC) contains data associated with each ATC trunk group existing in the AT. An ATC trunk can be incoming, outgoing, or two-way. The following procedure shows the datafill for table TRKGRP (ATC). See *Common Customer Data Schema*, 297-1001-451, for a detailed description of the table.

Datafilling table TRKGRP (ATC)

Field	Subfield	Explanation and action
GRPKEY		*Group key* This field contains subfield CLLI.
	CLLI	*Common language location identifier* Enter the code that represents the trunk group in table CLLI.
GRPTYP		*Group type* Enter ATC, the trunk group type.

-continued-

NTX386AB - Access Tandem Switch (continued)

Datafilling table TRKGRP (ATC) (continued)

Field	Subfield	Explanation and action
TRAFSNO		*Traffic separation number* For incoming ATC trunks, enter the incoming traffic separation number (0 to 127) assigned to the trunk group. For outgoing ATC trunks, enter the outgoing traffic separation number (0 to 127) assigned to the trunk group. For two-way trunks, enter both numbers. If traffic separation is not required, enter 0 (zero). If the AT has the NTX085AA - Traffic Separation Peg Count feature package, parameter TFAN_IN_MAX_NUMBER in table OFCENG must be set to 1. For ATs without the NTX085AA - Traffic Separation Peg Count feature package, enter a number from 0 to 15. It is recommended that incoming and outgoing traffic separation numbers 1 to 9 be reserved for generic traffic separation numbers. See table TFANINT for more information.
PADGRP		*Pad group* Enter the name of the pad group assigned to the trunk group in table PADDATA.
NCCLS		*OM no circuit class* For incoming trunk groups, enter NCRT. For outgoing and two-way trunks, enter the OM no circuit class that indicates which OM register is increased when treatment GNTC occurs.
GRPINFO		*Variable group data* This field is made up of the following subfields.
	DIR	*Direction* Enter the direction of traffic flow, incoming (IC), outgoing (OG), or two way (2W).
	TRAFCLS	*Traffic usage class* Enter the traffic usage class assigned to the trunk group.

-continued-

NTX386AB - Access Tandem Switch (continued)

Datafilling table TRKGRP (ATC) (continued)

Field	Subfield	Explanation and action
	SELSEQ	*Select sequence* For incoming trunks, enter MIDL. For outgoing and two-way trunks, enter the selection sequence (LIDL or MIDL).
	PRTNM	*Standard pretranslator table name* For incoming and two-way trunks, enter the name of the standard pretranslation table if standard pretranslation is required; otherwise enter NPRT. For outgoing trunks, enter NPRT.
	SCRNCL	*Class of service screening table name* For incoming and two-way trunks, enter the name of the screening table if class of service screening is required; otherwise enter NSCR. For outgoing trunks, enter NSCR.
	SNPA	*Serving NPA* Enter the three-digit serving NPA code for the trunk group.
	CARRNM	*Carrier name* Enter a carrier name as defined in table OCCINFO.
	ANI	*Automatic number identification* When the trunk group direction is incoming, this field is not required. Enter N. For outgoing and two-way trunks, enter Y if the trunk is to send automatic number identification (ANI) digits; otherwise enter N.
	SIGTYPE	*ANI signaling type* Enter the signaling type (BELLI, BELLII, EAPLAN, or FGB) for this trunk group.
	STNCLS	*Station class signaling* This field is not required for ATs. Enter COMB.
	OSIND	*Operator services indicator* For incoming trunk groups, enter N. For outgoing and two-way trunk groups, enter Y when the carrier is to receive an ANI digit indication that operator services are provided. Otherwise enter N.
End		

NTX386AB - Access Tandem Switch (continued)

Datafill example for table TRKGRP (ATC)

The following example shows sample datafill for table TRKGRP (ATC). Trunk ISUP2WC111 is a two-way ATC trunk. Signaling used on this trunk is FGD EAP. Carrier name field (CARRNM) is set to C111 and SIGTYPE is set to EAPLAN.

Datafill example for table TRKGRP (ATC)

Example of a MAP display:

```
    GRPKEY
                                                              GRPINFO
-------------------------------------------------------------------------

ISUP2WC111
 ATC 0 NPDGP NCRT 2W TM MIDL NPRT NSCR 619 C111 Y EAPLAN Y N
COMB N $
```

Datafilling table TRKGRP (IT)

The following procedure shows the datafill for table TRKGRP (IT). This procedure contains only those fields that apply to this package. See *Common Customer Data Schema,* 297-1001-451, for a description of the other fields. Separate versions of this table must be completed for two-way and incoming IT trunks. See explanations of fields for details.

Datafilling table TRKGRP (IT)

Field	Subfield	Explanation and action
GRPKEY		*Group key* This field contains subfield CLLI.
	CLLI	*Common language location identifier* Enter the code that represents the trunk group in table CLLI.
GRPINFO		*Variable group data* When GRPTYP=IT, this field consists of the following subfields.
	GRPTYP	*Group type* Enter IT, the trunk group type.

-continued-

Datafilling table TRKGRP (IT) (continued)

Field	Subfield	Explanation and action
	TRAFSNO	*Traffic separation number* For two-way IT, enter the incoming and outgoing traffic separation number (0 to 127) assigned to the trunk group. For incoming IT, enter the incoming traffic separation number (0 to 127). If not required, enter 0 (zero). If the two-way IT switching unit has the NTX085AA - Traffic Separation Peg Count feature package, enter 1 to the lower value of parameters TFAN_IN_MAX_NUMBER and TFAN_OUT_MAX_NUMBER in table OFCENG. For an incoming IT unit, enter 1 to the value of parameter TFAN_IN_MAX_NUMBER in table OFCENG. For two-way IT switching units without the NTX085AA - Traffic Separation Peg Count feature package, enter a number from 1 to 15. For incoming IT units, enter 0 to 15. It is recommended that incoming and outgoing traffic separation numbers 1 to 9 be reserved for generic traffic separation numbers.
	PADGRP	*Pad group* Enter the name of the pad group assigned to the trunk group in table PADDATA.
	NCCLS	*OM no circuit class* For two-way IT units, enter the OM no circuit class to indicate which OM register is increased when treatment GNCT occurs. The valid entries are: NCBN, NCID, NCIM, NCIT, NCLT, NCOF, NCON, NCOT, NCTC, and NOSC. For incoming IT units, this field is not required. Enter NCRT (no circuit). The initial value is NCRT.
	DIR	*Direction* Enter the direction of traffic flow, two way (2W), or incoming (IC). If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.
	TRAFCLS	*Traffic usage class* Enter the traffic usage class assigned to the trunk group.

-continued-

NTX386AB - Access Tandem Switch (continued)

Datafilling table TRKGRP (IT) (continued)

Field	Subfield	Explanation and action
	SELSEQ	*Select sequence* For incoming trunks, enter MIDL. For two-way trunks, enter the selection sequence.
	CONNGNPA	*Connecting NPA* Enter the three-digit NPA code of the switching unit where the outpulsed digits are translated.
	PRTNM	*Standard pretranslator table name* Enter the name of the standard pretranslation table if standard pretranslation is required; otherwise enter NPRT. If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.
	SCRNCL	*Class of service screening table name* Enter the name of the screening table if class of service screening is required; otherwise enter NSCR.
	SNPA	*Serving NPA* Enter the three-digit serving NPA code for the trunk group. If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.
	TERMTC	*Terminating toll center* This field is not applicable for incoming IT trunks. Enter 000. For two-way trunks, if the end office where the outpulsed digits are translated is assigned a terminating toll center code, enter this code. Otherwise, enter 000.
	TOLLCOMP	*Toll completing* This field is not applicable for incoming IT trunks. Enter N. For two-way trunks, enter Y if the trunk group is toll completing. Otherwise, enter N.

-continued-

Datafilling table TRKGRP (IT) (continued)		
Field	**Subfield**	**Explanation and action**
	CCWKVLD	Carrier connect wink Enter N to indicate that the carrier connect wink in Equal Access international calls should not be regenerated. Otherwise, enter N.
	OPTION	*Option* If applicable, enter the option assigned to this trunk group.
End		

Datafill example for table TRKGRP (IT)

The following example shows sample datafill for table TRKGRP (IT).

Datafill example for table TRKGRP (IT)

Example of a MAP display:

```
GRPKEY                                                    GRPINFO
-------------------------------------------------------------------

TVEROG
    IT O TLA NCRT IC NIL MIDL 619 PEA NSCR 619 000 N N $
```

Datafilling table TRKGRP (SC)

The following procedure shows the datafill for table TRKGRP (SC). This procedure contains only those fields that apply to this package. See *Common Customer Data Schema,* 297-1001-451, for a description of the other fields.

Datafilling table TRKGRP (SC)		
Field	**Subfield**	**Explanation and action**
GRPKEY		*Group key* This field contains subfield CLLI.
	CLLI	*Common language location identifier* Enter the code that represents the trunk group in table CLLI.
GRPINFO		*Variable group data* When GRPTYP=SC, this field consists of the following subfields.
-continued-		

NTX386AB - Access Tandem Switch (continued)

Datafilling table TRKGRP (SC) (continued)

Field	Subfield	Explanation and action
	GRPTYP	*Group type* Enter SC, the trunk group type.
	TRAFSNO	*Traffic separation number* Enter the incoming or incoming and outgoing traffic separation number (0 to 127) assigned to the trunk group. If not required, enter 0 (zero). If the switching unit has the NTX085AA - Traffic Separation Peg Count feature package, enter 1 to the lower value of parameters TFAN_IN_MAX_NUMBER and TFAN_OUT_MAX_NUMBER in table OFCENG. For switching units without the NTX085AA - Traffic Separation Peg Count feature package, enter a number from 1 to 15. It is recommended that incoming and outgoing traffic separation numbers 1-9 be reserved for generic traffic separation numbers.
	PADGRP	*Pad group* Enter the name of the pad group assigned to the trunk group in table PADDATA.
	NCCLS	*OM no circuit class* Enter NCRT (no circuit). This field is not required for incoming trunk calls.
	TRAFCLS	*Traffic usage class* Enter the traffic usage class assigned to the trunk group.
	ONI	*Operator number identification* Enter Y when traffic on the trunk group is 100 percent ONI traffic. Otherwise, enter N.
	SNPA	*Serving NPA* Enter the three-digit serving NPA code to which the trunk group belongs. If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.

-continued-

Datafilling table TRKGRP (SC) (continued)		
Field	**Subfield**	**Explanation and action**
	PRTNM	*Standard pretranslator table name* If standard pretranslation is required, enter the name of the standard pretranslator table to which digit translation is to route after the receipt of one digit. If pretranslation is not required, enter NPRT. If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.
	NODIGRTE	*No digit route* Enter the position (RTE1, RTE2, RTE3, or RTE4) in table POSITION to which all operator assisted (OA) calls are routed. If the entry is NONE, all OA calls will be routed to position CAMA in table POSITION. If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.
	NODIGCTP	*No digit call type* Enter the type of call to be assigned to calls with no incoming digits (seizure only): NP (no prefix), DD, or OA.
	TRTMTSUP	*Treatment supervision* Enter the type of supervision required when translation is routed to a treatment, tone, or announcement: off-hook (OFFHOOK), on-hook (ONHOOK), or off-hook wink (OFFHKWK).
	NPRETSUP	*No prefix return supervision* Enter the return supervision required on no prefix type of calls: off-hook (OFFHOOK), on-hook (ONHOOK), or off-hook wink (OFFHKWK).
	NOBILLCD	*Number of bill codes* Enter the number of bill codes plus spares to be reserved in table BILLCODE.

-continued-

NTX386AB - Access Tandem Switch (continued)

Datafilling table TRKGRP (SC) (continued)

Field	Subfield	Explanation and action
	ANISEIZ	*ANI seizure timing* Enter the time in seconds (2 to 30) that the trunk has to wait for reception of first ANI digit or signal. If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.
	ANIPDIAL	*ANI partial dialing* Enter the time in seconds (2 to 30) that the trunk has to wait for reception of each ANI signal or digit but the first. If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.
	DIR	*Direction* Enter IC, the direction of the traffic flow. If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.
	SELSEQ	*Select sequence* Enter MIDL. When the trunk group is incoming (that is, when DIR=IC), sequential selection does not apply.
	DIGSOUT	*Digits outpulsed* Enter 0 (zero). This field is reserved for future use.
	SDATA	*Signaling data* This subfield consists of the following subfields.
	SIGFMT	*Signaling format* Enter BELL, the signaling formation used for this feature package. If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.

-continued-

Datafilling table TRKGRP (SC) (continued)		
Field	**Subfield**	**Explanation and action**
	GRPTYPE	*Group type* Enter OSS if the start signal for DD calls is ST and two information digits are expected.
	DEFANIFL	*Default ANI fail* This field determines the route to be taken by translations when no ANI (ANI FAIL) is received. If the translation is to route to position CAMA in table POSITION, enter CAMA. If the translation is to route to position TSPS in table POSITION, enter TSPS. If the translation is to route to a hard-coded TOLL DENIED treatment, enter TREAT. This treatment will route originator to reorder.
	IC_ROUTE	*Independent carrier route* When GRPTYPE=OSS, enter the position, known to table POSITION field POS, to specify the route to be taken if the call is identified by the start signal as an independent IEC Equal Access call.
	ANITYPE	*ANI request signal* Enter the type of ANI request signal: wink (WK) or reversal (REV). If parameter TRK_OOS_CHK_ON in the variable office parameter table is set to Y, all trunks in the group must be busied out before changing the value of this field by data modification order.
	RECORDNP	*Record calls of type NP* This field is not required for this feature package. Enter NP.
	SPLOOKUP	*Special lookup* If the non-EAEO is not capable of outpulsing the correct ANI information digit, and all incoming calls on the trunk group require a lookup in table SPLANIN, enter Y. Otherwise, enter N.
End		

Datafill example for table TRKGRP (SC)

The following example shows sample datafill for table TRKGRP (SC).

NTX386AB - Access Tandem Switch (continued)

Datafill example for table TRKGRP (SC)

Example of a MAP display:

```
 GRPKEY
                                                          GRPINFO
-------------------------------------------------------------------

SCTRK
 SC 44 NPDGP NCRT NIL N 619 TCA3 TSPS DD ONHOOK ONHOOK 30 5 5 IC
    LIDL 0 BELL OSS CAMA NONE RTE2 REV Y NP N $
```

Datafilling table TRKGRP (OP)

The following procedure shows the datafill for table TRKGRP (OP). This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table TRKGRP (OP)

Field	Subfield	Explanation and action
EADATA		*Equal Access data* This field is composed of subfields EA, EAOSS, and RTEVIAAT.
	EA	*Equal Access selector* Enter Y when Equal Access signaling (double ANI digits) is required. Otherwise, enter N.
	EAOSS	*Equal access operator services signaling* Enter Y if EAOSS is used on the trunk. Otherwise, enter N. This field is displayed only when EA = Y.
	RTEVIAAT	*Route via access tandem* Enter Y if the trunk is between an EAEO and a TOPS AT. Otherwise, enter N. This field is displayed only when EA = Y.

Datafill example for table TRKGRP (OP)

The following example shows sample datafill for table TRKGRP (OP). Trunk LNTOPS2 is located between an EAEO and a TOPS AT (RTEVIAAT = Y). It requires Equal Access signaling. The last three entries show the EA, EAOSS, and RTEVIAAT fields.

Datafill example for table TRKGRP (OP)

Example of a MAP display:

```
 GRPKEY
                                                          GRPINFO
-------------------------------------------------------------------

LNTOPS2
  OP 11 TLD NCRT NIL MIDL COMB MIX REV TERMHOLD N OG Y Y Y $
```

Datafilling table TRKSGRP

The following procedure shows the datafill for table TRKSGRP. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema,* 297-1001-451, for a description of the other fields.

Datafilling table TRKSGRP

Field	Subfield	Explanation and action
	SIGDATA	*Signaling data* Enter STD for standard signaling.
	DIR	*Direction* Enter the trunk group direction, incoming (IC), outgoing (OG), or two way (2W). Where trunk GRPTYPE = TPS101, only direction IC or OG can be used.
	IPULSTYP	*Incoming type of pulsing* For ATC trunks, enter MF.
	ISTARTSG	*Incoming start dial signal* For ATC trunks, enter WK to indicate that the type of start dial signal required is wink.
	OSTARTSG	*Outgoing start dial signal* For ATC trunks, enter WK to indicate that the type of start dial signal required is wink.

Datafill example for table TRKSGRP

The following example shows sample datafill for table TRKSGRP.

NTX386AB - Access Tandem Switch (continued)

Datafill example for table TRKSGRP

Example of a MAP display:

```
SGRPKEY   CARDCODE                                                SGRPVAR
-------------------------------------------------------------------------
   DAC 0    DS1SIG
         STD OG    MF      WK   7 0 NO     NO N N N  70   UNEQ
```

Datafilling table OFRT

Table OFRT contains route lists that are pointed to from tables other than the home NPA code subtable (HNPACONT.HNPACODE) or the foreign NPA code subtable (FNPACONT.FNPACODE).

The following procedure shows the datafill for table OFRT. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table OFRT

Field	Subfield	Explanation and action
RTESEL		*Route selector* Enter CND to specify a condition before routing. If the condition is met, then the instructions of this route element are executed. Otherwise, they are skipped and translation will look for instructions in the next route element.
RTELIST		*Route list* This field consists of the following subfields.
	CNDSEL	*Condition selector* Enter EA as the type of condition to be tested.
	EA_CND_RTE	*Condition subselector* Enter one of the following values: CAC for an Equal Access call where 10XXX is dialed INTNL for an Equal Access international call PIC for an Equal Access call

Datafill example for table OFRT

The following example shows sample datafill for table OFRT.

NTX386AB - Access Tandem Switch (continued)

Datafill example for table OFRT

Example of a MAP display:

RTE	RTELIST
1	CND EA CAC SK 3

Datafilling table OCCINFO

Table OCCINFO defines the attributes for carriers serving the AT and screens calls for carrier compatibility. For example, table OCCINFO allows international traffic to be sent only to carriers capable of handling such traffic.

The following procedure shows the datafill for table OCCINFO. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table OCCINFO

Field	Subfield	Explanation and action
CARRNAME		*Carrier name* Enter the carrier name or a 1- to 16-character alphanumeric abbreviation of the carrier name as defined in table OCCNAME. This table must have a tuple with the carrier name NILC to handle subscribers who want a null PIC.
CARRNUM		*Carrier number* Enter the CIC (0000 to 9999). The CIC is equal to the XXXX digits in the Equal Access prefixes (101XXXX or 950-WXXX). ***Note 1:*** Only 256 entries by office are accepted. ***Note 2:*** Although N is included in the range of values, it is not a valid entry for this field.

-continued-

NTX386AB - Access Tandem Switch (continued)

Datafilling table OCCINFO (continued)

Field	Subfield	Explanation and action
ACCESS		*Access arrangement* Enter one of the following access types accepted by the carrier to handle a call: NONE no access INTERIM interim dialing over FGD signaling EAP EAP dialing over FGD signaling OTC FGC dialing over FGC signaling (local billing) TRANS both interim and EAP dialing over FGD signaling FGC FGC dialing over FGC signaling (FGD billing) ***Note 1:*** In order for the EACARR OM group to record OM data, this field must be set to EAP, INTERIM, TRANS, or FGC. If the ACCESS field is set to NONE, none of the EACARR registers will be pegged. ***Note 2:*** This field must be set to NONE for the NILC tuple.
ORIGCARR		*Original carrier* This field specifies the carrier as original or duplicate when more than one carrier is entered with the same carrier number (field CARRNUM). Only one carrier of a group of carriers with the same CARRNUM can be the original carrier. Enter Y if the carrier is the original carrier. Otherwise, enter N. Default is N.
INTER		*Inter-LATA* Enter Y if the carrier can handle inter-LATA traffic. Otherwise, enter N.
INTNTL		*International* Enter Y if the carrier can handle international traffic. Otherwise, enter N.
INTRA		*Intra-LATA* Enter Y if the carrier can handle intra-LATA traffic. Otherwise, enter N.
ANI		*Automatic number identification* Enter Y if the carrier wants ANI digits sent with the called number. Otherwise, enter N.
FANI		*Flexible ANI* Enter Y if the carrier can receive flexible ANI information digits instead of standard ANI information digits. Otherwise, enter N.

-continued-

Datafilling table OCCINFO (continued)		
Field	**Subfield**	**Explanation and action**
ONISCRN		*Operator number identification screening* Enter Y if ONI traffic requires screening by an operator or CAMA position before outpulsing to the carrier. Otherwise, enter N.
AD1		*Abbreviated dialing number one* Enter Y if the carrier can be accessed using abbreviated dialing. Otherwise, enter N.
OVERLAP		*Overlap* Enter Y if the carrier wants to receive digits from the AT or the EAEO using overlap outpulsing. Otherwise, enter N.
INTERS		*Inter-state* Enter Y if the carrier can handle traffic between states. Otherwise, enter N.
INTRAS		*Intra-state* Enter Y if the carrier can handle traffic within the same state. Otherwise, enter N.
TERMREC		*Terminating access record* Enter the length (LONG or SHORT) of the terminating access record produced for the carrier. Default value is SHORT. ***Note:*** Access records are produced only when the OCCTERM option in table AMAOPTS is set to ON.
OCCSEPNO		*Other common carrier separation number* Enter the separation number (0 to 127) for the carrier in the Traffic Separations Measurement System.
OPSIG		*Operator signaling* Enter the type of operator signaling provided by the carrier. Enter FGRPC for FGD carriers that require FGC operator signaling. Enter NONE for all other FGD carriers. This entry is ignored for FGC carriers.
PICIND		*Presubscription indication* Enter Y if the carrier has chosen to receive the presubscription indicator; otherwise enter N. This field must be datafilled for every entry in table OCCINFO.

-continued-

NTX386AB - Access Tandem Switch (continued)

Datafilling table OCCINFO (continued)

Field	Subfield	Explanation and action
NOA950		*Nature of address indicator* Enter Y to show that the nature of address indicator in the calling party number parameter is set to 1111110. This binary values means that the call is a network specific, 950+ call from public station or hotel/motel line or non-EAEO. Enter N to show that the nature of address indicator in the calling party number parameter is set to the usual value. ***Note:*** The default value of N will cause no change in the existing operation of the switch.
INCCPN		*Include calling party number* Enter N to indicate that the calling party number parameter is to be removed from any initial address message (IAM) sent to this carrier. Otherwise enter Y, the default value.
CTDOA		*Carrier toll deny operator assisted* Enter Y to block OA calls to this carrier when the subscriber has the carrier toll denied (CTD) line option applied for this carrier. Otherwise, enter N, the default value.
CRMCRA		*Circuit reservation and acknowledgement messages* Enter Y if the following conditions are met: ▪ a circuit reservation message (CRM) should be sent from an AT to an IEC on FGD calls outgoing over common channel signaling 7 (CCS7) ATC trunk groups ▪ a subsequent circuit reservation acknowledgement (CRA) message should be received at the AT from the IEC on FGD calls incoming to the AT on either MF IT or SC trunks. Otherwise, enter N.
End		

Datafill example for table OCCINFO

The following example shows sample datafill for table OCCINFO. In this example, two carriers are serving the AT, C111 and C222.

Datafill example for table OCCINFO

Example of a MAP display:

```
CARRNAME CARRNUM ACCESS ORIGCARR INTER INTNTL INTRA ANI FANI
ONISCRN AD1 OVERLAP INTERS INTRAS TERMREC OCCSEPNO OPSIG PICIND
NOA950 INCCPN DTMFIND OPSERV CACBLOCK CTDOA CMCMON SCRNWATS
CRMCRA ATPINCL INTRAOPR
-------------------------------------------------------------------
 C111    0111   EAP     Y      Y      Y     N   Y    N
N     Y       Y     Y       Y    LONG       O    FGRPC    Y
 N       N     N        N       N      N      N       N
  Y    N         N
 C222    0222   EAP     Y      Y      N     Y   N    N
N    N        Y     Y       N    SHORT      O    FGRPC    N
 N    N        N       N       N      N      N       N
  Y    N         N
```

Datafilling table STDPRTCT

Table STDPRTCT lists the name of each standard pretranslator subtable defined by the operating company. The following procedure shows the datafill for table STDPRTCT. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table STDPRTCT

Field	Subfield	Explanation and action
EXTPRTNM		*External standard pretranslator subtable name* Enter the name defined by the operating company to represent the standard pretranslator subtable. Note that standard pretranslator name C7PT is automatically used by ISDN user part (ISUP) trunks on test calls in offices with ISUP capability.

Datafill example for table STDPRTCT

The following example shows sample datafill for table STDPRTCT. In this example, information is provided for six pretranslator subtables.

NTX386AB - Access Tandem Switch (continued)

Datafill example for table STDPRTCT

Example of a MAP display:

```
 EXTPRTNM   STDPRT   AMAPRT
-------------------------------
      EAFR (    1) (    0)
      EAOS (    1) (    0)
      POT1 (    1) (    1)
      INC1 (    1) (    0)
      OWT1 (    1) (    0)
      EACN (    1) (    0)
```

Datafilling subtable STDPRTCT.STDPRT

Subtable STDPRTCT.STDPRT is the first table to be indexed by the received leading digits when the originating line attribute (from table LINEATTR) or trunk (from table TRKGRP) specifies a pretranslator name.

The following procedure shows the datafill for subtable STDPRTCT.STDPRT. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling subtable STDPRTCT

Field	Subfield	Explanation and action
FROMDIGS		*From digits* Enter the digit(s) to be translated. If the entry is a block of consecutive numbers, enter the first number in the block. When field PRESEL = NSC, the number of digits for field FROMDIGS is changed to 6 or 7.
TODIGS		*To digits* If FROMDIGS is a block of consecutive numbers, enter the last number in the block. Otherwise, this field equals FROMDIGS. When field PRESEL = NSC, the number of digits for field TODIGS is changed to 6 or 7.

Datafill example for subtable STDPRTCT.STDPRT

The following example shows sample datafill for subtable STDPRTCT.STDPRT.

NTX386AB - Access Tandem Switch (end)

Datafill example for subtable STDPRTCT.STDPRT

Example of a MAP display:

```
 FROMDIGS          TODIGS
                                                PRETRTE
 092110             092110      NSC   DD 6   6   PFN   NA
0920110            0920110      NSC   DD 7   7   PFN   NA
```

Datafilling table CICSIZE4

Table CICSIZE4 contains the trunk groups which use four-digit CICs. Trunk groups that do not appear in this table are assumed to use three-digit CICs. The following procedure shows the datafill for table CICSIZE4. See *Common Customer Data Schema,* 297-1001-451, for additional information.

Datafilling table CICSIZE4

Field	Subfield	Explanation and action
TRUNKGRP		Enter the trunk groups that use a 4-digit CIC. This table is datafilled only during the permissive phase, when office parameter EA_TAB_CICSIZE4_OBSOLETE is set to N. When this parameter is set to Y, table CICSIZE4 is not used.

Datafill example for table CICSIZE4

The following example shows sample datafill for table CICSIZE4.

Datafill example for table CICSIZE4

Example of a MAP display:

```
TRUNKGRP

TGRPX
TGRPY
TGRPZ
```

Translation verification tools

Translation verification tools are not applicable for this feature package.

Service orders

Service orders are not applicable for this feature package.

NTX710AB - LATA Equal Access System

Package name

LATA Equal Access System

Package number

NTX710AB

Feature numbers

The NTX710AB feature package consists of the following features:

NTX710AB feature numbers and names

Feature number	Feature name
BC1701	Incoming Trunk Call Processing
BC1702	Translation and Routing
BC1703	Signaling Conversion
BC1704	Originating Billing
BC1705	Database System Enhancements
BC1706	Database Reporting
AF0305	DNPIC Bulk DMO Tool
AF0306	SC Traver Handling
AF1453	LEAS - Special Directory Number Identification
AN0174	Carrier Code Expansion for LEAS

BCS applicability

BCS35 and up

Feature package prerequisites

This package requires the following feature packages:

Feature package prerequisites

Feature package	Feature package name
NTX000AA	Bilge
NTX001AA	Common Basic
NTX072AA	International Direct Distance Dialing
NTX386AA or NTX386AB	Access Tandem Switch
NTX801AA	Toll Features I
NTX187AA	TOPS Equal Access (if incoming TOPS trunks)

NTX710AB - LATA Equal Access System (continued)

Description

Equal Access allows subscribers to access several competitive carriers or to select one primary carrier through presubscription for all long distance calls. An end office that does not provide these Equal Access services is called a non-EAEO. Feature package NTX710AB allows a DMS-200 AT to provide Equal Access-like services to subscribers served by non-EAEOs.

With a LATA Equal Access system (LEAS), the non-EAEO subscriber can access an IEC or INC by selecting a PIC or dialing the CAC.

This feature package also expands the FGD CIC from three to four digits for LEAS calls.

Theory of operation

To provide Equal Access-like services, the LEAS AT stores Equal Access subscriber data in the LEAS database. The LEAS database consists of tables DNPIC and PICNAME, and contains the following data:

- subscriber PIC
- carriers that have denied service to the subscriber (CTD feature)
- attribute that indicates whether the subscriber can use CACs to select specific carriers

Table DNPIC is accessed by the NPA and directory number (DN) of the calling party. A LEAS call dialed by a non-EAEO subscriber must then enter the AT switch on a trunk capable of spilling ANI digits or allowing operator number identification (ONI).

The LEAS AT accepts either MF or dial pulse (DP) incoming signals and performs the following tasks:

- collects the called digit streams sent from the non-EAEO. Although 20 digits plus key-pulse (KP) and start pulse (ST) digits is the longest digit stream LEAS supports, this feature package allows the LEAS to collect up to 24 digits plus KP and ST digits for both MF and DP digit collection
- obtains and formats the calling DN using ANI or ONI
- performs Equal Access service checks (LATA screening as well as subscriber and carrier service checks)
- converts traditional (FGC) signaling to the signaling required by the IEC or INC
- regenerates the ANI or ONI information to a carrier if required
- performs CAMA billing for all LEAS calls

Dialing

Any dialing pattern accepted at the EAEO (with the exception of abbreviated dialing 2 and 3) is accepted at the non-EAEO. However, the dialing plan for the non-EAEO subscriber depends on the capabilities of the end office. Some offices may require a dialing plan modification to allow outpulsing of all Equal Access dialing sequences. If a dialing plan modification is not performed by the operating company, the subscriber may use FGB dialing to achieve carrier selection for each call. Presubscription dialing is allowed and does not require a dialing plan modification. The subscriber dialing patterns accepted by LEAS are

- 10XXX + 0/1 + NPA + 7 digits
- 10XXX + 01/011 + country code + national number
- 10XXX + 0(0/#)
- 10XXX + #
- 0/1 + 950-WXXX
- 10XXX + 0/1 + 911
- 0/1 + service access code (SAC) + 7 digits

LEAS trunking arrangements

The primary requirement for LEAS is that trunk groups between the non-EAEO and the LEAS AT provide ANI or ONI capability.

Incoming trunks can be one-way or two-way trunks; the AT to IEC and INC trunks can be ATC or operator trunks and can be one-way or two-way. LEAS can combine all direct dialed (DD) and OA calls on one trunk group.

Because of the requirement for ANI and ONI capability, LEAS traffic must be carried over incoming TOPS or SC trunk groups. The recommended trunking arrangement for LEAS depends on whether the LEAS AT has the TOPS capability.

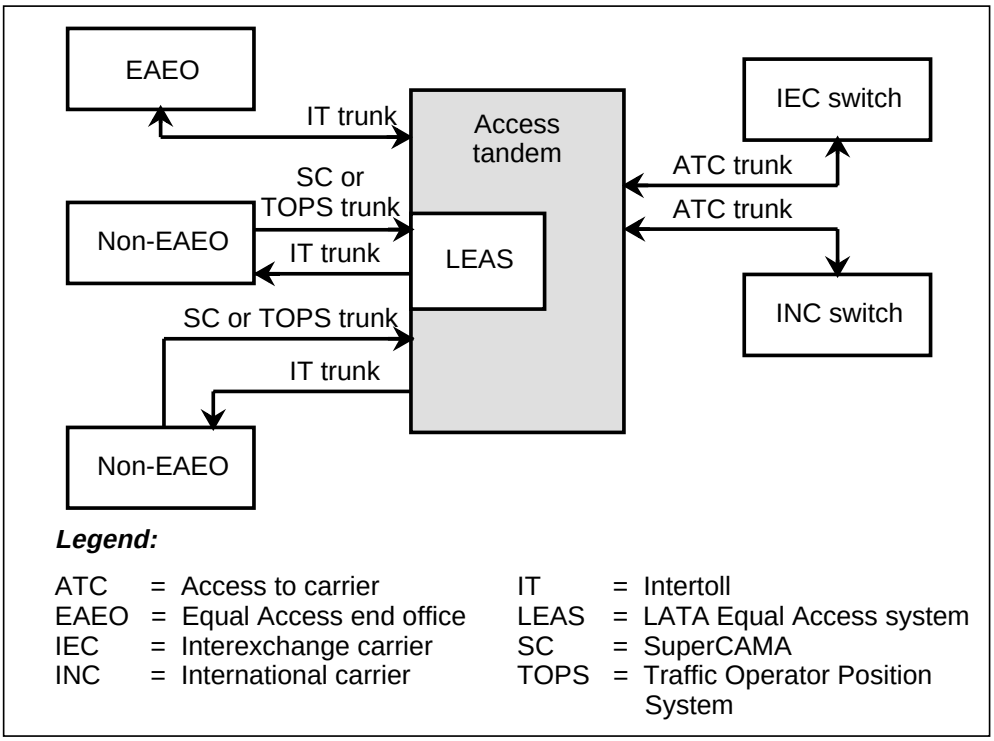
If the LEAS AT does not provide TOPS, all traffic from the non-EAEO must be routed to the AT over SC trunk groups. If the LEAS AT provides TOPS, incoming LEAS traffic can be routed over incoming TOPS or SC trunk groups. There are three possible trunking arrangements:

- all traffic is routed over incoming TOPS trunk groups
- all traffic is routed over incoming SC trunk groups
- OA calls are routed over incoming TOPS trunk groups and DD calls are routed over incoming SC trunk groups

Figure 4-2 shows the LEAS switching arrangement.

NTX710AB - LATA Equal Access System (continued)

Figure 4-2
Example of a LEAS configuration



Treatments for 10XXX intra-LATA calls

Formerly, when Equal Access calls failed because they could not be completed by the carrier (according to table OCCINFO), they were routed to vacant code (VACT). The treatment given is now dependent upon the call type and the carrier datafill in table OCCINFO. Table 4-3 lists the treatments applicable to LEAS calls.

Table 4-3
Failure conditions - new treatments

Failure condition	Treat-ment	Disposition
Inter-LATA restriction (INTER = N (no) in table OCCINFO for carrier)	CACE	CAC in error announcement
Intra-LATA restriction (INTRA = N in table OCCINFO for carrier)	NACD	Do not dial 10XXX announcement

-continued-

Table 4-3
Failure conditions - new treatments (continued)

Failure condition	Treat-ment	Disposition
Interstate restriction (INTERS = N in table OCCINFO for carrier)	CACE	CAC in error announcement
Intrastate restriction (INTRAS = N in table OCCINFO for carrier)	CACE	CAC in error announcement
International restriction (INTNTL = N in table OCCINFO for carrier)	CACE	CAC in error announcement
AD1 dialed (AD = N in table OCCINFO for carrier)	CACE	CAC in error announcement
End		

The translation verification (TRAVER) tool is updated to reflect the changed Equal Access treatments. When used with the trace option, TRAVER gives the reason for failed carrier checks, such as “This carrier does not handle inter-LATA traffic.” Then TRAVER shows a lookup of the treatment in table TMTCNTL. When used with the no trace option, TRAVER shows the treatment route for failed calls.

Carrier identification code expansion

Currently, each carrier is identified by a three-digit code, called the CIC. Because CICs in the series 10X, 15X, and 16X are not used, only up to 970 CICs can be assigned to an FGD carrier.

To prepare for the expected exhaustion of available CICs, this feature package expands the number of assignable CICs to 10 000. The format of the CAC, which is the dialing sequence used to access the carrier, is expanded from 10XXX to 101XXXX, where XXX and XXXX are the CICs. This feature package supports the CIC expansion for LEAS calls.

The transition from three- to four-digit CICs is implemented in three phases. They are described in table 4-4.

NTX710AB - LATA Equal Access System (continued)

Table 4-4
Conversion phases to implement four-digit CICs

Conversion period		Valid CACs	Invalid CACs	Number of CICs available
Current		10XXX	1010X 1015X 1016X	970
Permissive	(part 1)	10XXX 1010XXX	1010X 1015X 1016X	970
	(part 2)	10XXX 1010XXX 1015XXX 1016XXX	1010X 1015X 1016X	2970
Final		101XXXX	10XXX	10 000

During the first part of the permissive period, the LEAS can process CACs of the form 10XXX and 1010XXX. The three-digit CIC assigned to each carrier is expanded to four digits by adding a leading zero. In this period, CACs of the form 1010X, 1015X, 1016X, 1015XXX, and 1016XXX are unassigned. If the subscriber dials an unassigned code, the call is sent to treatment.

In the second part of the permissive period, CACs of the form 1015XXX and 1016XXX are assigned. CACs of the form 1010X, 1015X, and 1016X remain unassigned to help the LEAS distinguish between three- and four-digit CICs. When 10, 15, or 16 appears as digits 3 and 4 in the CAC, the LEAS assumes that a four-digit CIC has been dialed. Any other sequence is assumed to be a three-digit CIC.

In the final period, only four-digit CICs are accepted by the LEAS. Any call with a three-digit CIC is sent to treatment. Note that these changes are transparent to subscribers who use their PIC to complete interexchange calls.

Implementing four-digit CICs in a LEAS

During the permissive period, the LEAS must be able to receive both three-digit CICs from non-converted EAEOs and four-digit CICs from converted EAEOs. However, because the LEAS should not receive both three- and four-digit CICs on the same trunk group, it will be converted trunk group by trunk group.

Table CICSIZE4 contains the trunk groups which use four-digit CICs. Trunk groups that do not appear in this table are assumed to use three-digit CICs. When the LEAS receives a CIC, it verifies that table CICSIZE4

contains the trunk group. If the LEAS receives a three-digit CIC from the subscriber, it appends a leading zero before outpulsing. If the LEAS receives a four-digit CIC not datafilled in table CICSIZE4 and the leading digit is not zero, the LEAS produces log DFIL147.

For calls routed to an IEC or INC, the converted LEAS transmits either three- or four-digit CICs, depending on whether the trunk group is datafilled in table CICSIZE4.

When full four-digit CIC conversion is achieved, all trunks at the LEAS carry four-digit CICs. Table CICSIZE4 is then no longer required and does not need to be consulted during translation. Office parameter EA_TAB_CICSIZE4_OBSOLETE is then set to Y to specify that table CICSIZE4 is no longer required.

Implementing the permissive dialing phase

The following table lists the actions required to implement the permissive dialing phase of the CIC expansion.

Implementing the permissive dialing phase

Step	Action
1	Add tuples to the standard pretranslator for the seven-digit CACs to be translated.
2	Set office parameter LEAS_FOUR_DIGIT_CIC_STATUS to PERMISSIVE.
3	Add the trunk name to table CICSIZE4 for the trunk groups that carry four-digit CICs.

The following table shows a tuple added to subtable STDPRTCT.STDPRT. In this example, CIC 123 has been expanded to 0123.

Datafill example for subtable STDPRTCT.STDPRT

Example of a MAP display:

```
Current      080123      080123
entry             T NP 6  OFRT  202   6   6   NONE

New          0800123     0800123
entry             T NP 7  OFRT  202   7   7   NONE
```

NTX710AB - LATA Equal Access System (continued)

Implementing the final dialing phase

The following table lists the actions required to implement the final dialing phase of the CIC expansion.

Implementing the permissive dialing phase

Step	Action
1	Make sure all four-digit CICs are datafilled in table OCCINFO.
2	Change the standard pretranslator in table STDPRTCT to translate seven-digit CACs.
3	Set office parameter LEAS_FOUR_DIGIT_CIC_STATUS to FOURDIG.
4	Revise table CICSIZE4 to add the trunk groups which carry four-digit CICs. If all trunks have been converted to carry four-digit CICs, set office parameter EA_TAB_CICSIZE4_OBSOLETE to Y. In this case, you do not need to datafill table CICSIZE4.

The following table shows a tuple added to subtable STDPRTCT.STDPRT. In this example, CIC 222 has been expanded to 0222.

Datafill example for subtable STDPRTCT.STDPRT

Example of a MAP display:

```
Current      080222      080222
entry             T NP 6  OFRT  202   6   6   NONE


New          0800222     0800222
entry             T NP 7  OFRT  202   7   7   NONE
```

Impact of the CIC expansion

Expanding the CIC reduces the number of digits in a LEAS calls by 2; the maximum number of digits in a LEAS call is thus 22, including the KP and ST digits.

NTX710AB - LATA Equal Access System (continued)

Package limitations and restrictions

The following limitations and restrictions apply to this feature package:

- LEAS does not support the AMA billing call codes 111 (inter-LATA WATS (wide area telephone service), station detail), 114 (inter-LATA WATS, billing number), and 117 (inter-LATA Datapath). Call code 120 (originating overflow counts for ATC trunks) is not generated if the call comes over a TOPS trunk group. Long duration calls over TOPS trunk groups do not generate A, B, C, or D records.
- Carrier toll denial is limited to three carriers by subscriber.
- SC TRAVER handling only supports incoming SC trunks and Bellcore traditional signaling. It does not support incoming TOPS trunks or AMR signaling. Parameters entered must conform to Bellcore traditional signaling or the TRAVER will not give the expected results.
- AF1453 only impacts SC trunks incoming to LEAS ATs without TOPS from non-EAEOs. These end offices do not have the capability of outpulsing ANI information digits which indicate coin, hotel, and coinless public lines.
- If the signaling is AMR5, the lookup in table SPLANILN is not supported.
- Prior to this BCS, if an EA selector was used with 10XXX or 950-WXXX dialing on a non-LEAS TOPS trunk, a SWERR indication was produced to indicate the datafill error. A SWERR is not an acceptable datafill error indicator. Log DFIL149 is now generated whenever a 10XXX or 950-WXXX call is attempted using an EA selector via a non LEAS TOPS trunk. This problem occurs only when a TOPS trunk is datafilled in table TOPEATRK as originating from a non-conforming end office and field DNLOOK in table TOPEATRK is set to Y.
- AD1 (10XXX + #) is supported by LEAS, however, AD2 (10XXX + SC1/SC2) and AD3 (SC1/SC2) are not supported.
- Editing large bulk data modification order files (greater than 5000 records) is not supported by the support operating system editor.
- All tuples in a bulk data modification order file have the same PIC and the same value for the CHOICE field. The user cannot supply a value for the CTD field of the DNPIC tuple; the default value N is always supplied by the feature.
- Individual subscribers of multiparty lines that cannot be identified by the non-EAEO are identified by an operator and are assigned unique PIC, CTD, and CHOICE fields per party.

NTX710AB - LATA Equal Access System (continued)

- Lines that have a special billing number share the same PIC, CTD, and CHOICE data as other lines with the same billing number. To convert the received calling digits to the special billing number, the following datafill is required:
  - for SC trunks: table BILLCODE
  - for TOPS trunks: tables TOPSBC, SPLDNID, and FXDNMAP .
- Since DNs are not assigned to all members of a multiline hunt group (a DN is assigned to the first member of this group), the LEAS data used for calls from these lines is that of the first member.

Feature interactions

Feature interactions are not applicable for this feature package.

Activation/deactivation by the end user

Activation/deactivation is not applicable for this feature package.

Billing

Equal Access originating billing is accomplished at the EAEO in a local automatic message accounting (LAMA) environment. Since LEAS performs Equal Access-like functions for non-EAEOs, billing functions must be performed at the AT.

The LEAS provides the DMS-200 AT with the ability to generate originating access charge and subscriber billing records in Bellcore format for LEAS calls. Specifically, call codes 110, 119, 120, 121, and 251, as well as appropriate call codes with 47XX series structure codes, are supported.

The billing for these calls, which arrive over SC and TOPS trunk groups, is accomplished at the LEAS AT using CAMA for SC trunk groups and the TOPS biller for TOPS trunk groups.

Without LEAS, an AT can provide the following:

- terminating access charge billing (call code 119) when an Equal Access call terminates in the LATA
- terminating access charge billing for Equal Access Datapath calls (call code 121)
- originating overflow counts for ATC trunk groups (call code 120)

The LEAS adds the capability to produce inter-LATA station paid (call code 110) records and the corresponding DMS-100 supported structure codes (625 inter-LATA and 627 inter-LATA, long duration) for calls over SC trunk groups. There is no corresponding structure code for long duration calls over TOPS trunk groups.

The LEAS package does not support the following call codes:

- 111 - inter-LATA OUTWATS station detail
- 114 - inter-LATA OUTWATS billing number
- 117 - inter-LATA Datapath

These calls are billed with structure code 625 over SC trunk groups. Since CAMA billing is performed at a DMS-200 office, certain call attributes required by billing cannot be determined at the AT.

Billing calls over TOPS trunk groups

Equal Access calls coming over TOPS trunk groups to an AT currently generate call code 251, structure code 734 (an access record) or call code 006 with the 47XX series structure codes (a billing record) for CAMA calls, depending on the CAMABILL option in table TOPEACAR. LEAS calls arriving over TOPS trunk groups that do not stop at a TOPS position and are not processed by mechanized calling card service or automatic coin toll service create call code 110, structure code 625 (regardless of the TOPEACAR option CAMABILL).

Datafilling office parameters

Office parameters help the operating company prepare office-dependent data for the switching unit. The following table identifies office parameters that must be datafilled for LEAS.

Wink timeout values and wink duration are governed by office parameters. These parameters are not created by LEAS, but are described here because the value settings of these parameters affect signaling at the LEAS AT.

NTX710AB - LATA Equal Access System (continued)

Office parameters used by LATA Equal Access System	
Table name **Parameter**	**Explanation and action**
OFCENG EA_TAB_CICSIZE4_OBSOLETE	This office parameter specifies whether table CICSIZE4 is required. Set this parameter to N during the permissive phase of the CIC expansion. During this phase, table CICSIZE4 contains trunk groups with 4-digit CICs. When all CICs are converted to 4 digits, set this parameter to Y. Table CICSIZE4 is not used when this parameter is set to Y.
OFCENG LEAS_FOUR_DIGIT_CIC_STATUS	This parameter indicates the transitional phases of the CIC expansion. Values are: ▪ THREEDIG (initial state) Only 3-digit CICs (CACs of the form 10XXX) are valid. ▪ PERMISSIVE (transitional phase) Both 3- and 4-digit CICs (CACs of the form 10XXX, 1010XXX, 1015XXX, and 1016XXX) are valid. ▪ FOURDIG (final phase) Only 4-digit CICs are valid. As of BCS35, the restart requirement is removed when you make changes.
OFCSTD EAEO_REC_1ST_PRE_WK_TIME	This parameter specifies the time (1 to 255), in 160-ms intervals, of the first pre-wink delay associated with outpulsing from an EAEO. The default is 100 (16 s).
OFCSTD EAEO_REC_2ND_PRE_WK_TIME	This parameter specifies the time (1 to 255), in 160-ms intervals, of the second pre-wink delay associated with outpulsing from an EAEO. The default is 175 (28 s).
OFCSTD EA_REC_MAX_WK_TIME	This parameter specifies the maximum time (1 to 255), in 160-ms intervals, for wink recognition.
OFCSTD REC_MIN_WK_TIME	This parameter specifies the minimum time (1 to 255), in 10-ms intervals, for wink recognition. The default is 10.

NTX710AB - LATA Equal Access System (continued)

Datafill sequence

The following tables require datafill to implement the feature package. The tables are listed in the order in which they are to be datafilled.

Note: Only the tables specific to a LEAS AT that does not provide TOPS are described in this chapter. See TOPS documentation in the 297-2271, 297-2281, and 297-2291 layers for more information about how to datafill a LEAS AT that provides TOPS.

Datafill tables required for LATA Equal Access System

Table	Form	NTP	Purpose of table
OCCNAME	2356A-B	297-1001-451	Table OCCNAME (other common carrier name) lists the connected carriers and establishes the spelling standard for other tables requiring the carrier name.
OCCINFO	2355A-B	297-1001-451	Table OCCINFO (other common carrier information) defines the attributes for the carriers serving a DMS switch and screens calls for carrier compatibility.
HNPACONT	2400A, B	297-1001-451	Table HNPACONT (HNPA code subtables) lists the home or serving NPAs and the service translation schemes (STS).
HNPACONT. HNPACODE	2401A, B	297-1001-451	Subtable HNPACONT.HNPACODE (home NPA code) specifies the route, table, or treatment to which translation must route for each exchange within each NPA or STS defined in table HNPACONT.
STDPRTCT	2465	297-1001-451	Table STDPRTCT (standard pretranslator control) lists the name of each standard pretranslator subtable defined by the operating company.
STDPRTCT. STDPRT	2467A-B	297-1001-451	Subtable STDPRTCT.STDPRT (standard pretranslator) is the first table to be indexed by the received leading digits when the originating line attribute (from table LINEATTR) or trunk (from table TRKGRP) specifies a pretranslator name.

- continued -

NTX710AB - LATA Equal Access System (continued)

Datafill tables required for LATA Equal Access System (continued)

Table	Form	NTP	Purpose of table
LATANAME	2358A-B	297-1001-451	Table LATANAME (LATA name) lists the names of the LATAs served by the DMS switch.
TRKGRP (SC)	2156J	297-1001-451	Table TRKGRP (SC) (SuperCAMA trunk group) defines characteristics for incoming and two-way CAMA trunk groups required in a toll or combined local/toll office.
BILLCODE	2143A-B	297-2201-451	Table BILLCODE (billing code) lists information for each NNX central office code, special billing code, and WATS originating code allowed to originate DDD calls over incoming North American 5 or CAMA trunk groups.
OFRT	2431A-C	297-1001-451	Table OFRT (office route) contains route lists that are pointed to from tables other than the home NPA code subtable (HNPACONT.HNPACODE) or the foreign NPA code subtable (FNPACONT.FNPACODE).
CLSVSCRC	2463A-B	297-1001-451	Table CLSVSCRC (class of service screening control) is provided so the switch can be arranged for screening by serving NPA code, class of service, type of call, and digits dialed, if needed.
TMTCNTL	2440A-B	297-1001-451	Table TMTCNTL (treatment codes) provides route lists for a preset list of treatments.
OCCRDIG	2357A-B	297-1001-451	Table OCCRDIG (other common carrier regional digit) provides the regional code for outpulsing to the INC for calls to an NPA within World Zone 1, but outside the continental United States.
LATAXLA	2359A-B	297-1001-451	Table LATAXLA (Equal Access LATA translation) defines the attributes of domestic calls (inter-LATA or intra-LATA, interstate or intrastate).
PICNAME	2894	297-2271-451	Table PICNAME (primary inter-LATA carrier name) lists the names of the carriers serving the DMS switch.

- continued -

Datafill tables required for LATA Equal Access System (continued)

Table	Form	NTP	Purpose of table
DNPIC	2893	297-2271-451	Table DNPIC (directory number primary inter-LATA carrier) lists the DNs of PICs.
SPLANILN	2755A-B	297-2271-451	Table SPLANILN (special automatic number identification line) contains the DNs of coin, hotel, coinless public, and restricted coin lines, and identifies these line types to the non-TOPS LEAS.
TRKLATA	2036A-B	297-1001-451	Table TRKLATA (trunk LATA) allows an operating company to determine the originating LATA of a call.
FXDNMAP	2883	297-2271-451	Table FXDNMAP (foreign exchange directory number map) maps the foreign exchange (FX) line numbers received (from hotels or restricted stations) to the actual DNs, which are then used for billing.
EASAC	2102	297-1001-451	Table EASAC (Equal Access service access codes) allows the operating company to specify the N0X and N1X codes that are to be treated as SACs.
CICSIZE4		297-1001-451	Table CICSIZE4 (carrier identification codes with 4 digits) identifies trunk groups with 4-digit CICs. This table is used only during CIC expansion transitional phase.

End

Datafilling table OCCNAME

The following procedure shows the datafill for table OCCNAME. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table OCCNAME

Field	Subfield	Explanation and action
OCCNAME		*Other common carrier name* Enter the carrier name or a 1- to 16-character alphanumeric abbreviation of the carrier name.

NTX710AB - LATA Equal Access System (continued)

Datafill example for table OCCNAME

The following example shows sample datafill for table OCCNAME.

Datafill example for table OCCNAME

Example of a MAP display:

```
       OCCNAME
________________________________________
          C111
```

Datafilling table OCCINFO

Table OCCINFO defines the attributes for carriers serving the AT and screens calls for carrier compatibility. For example, table OCCINFO allows international traffic to be sent only to carriers capable of handling such traffic.

The following procedure shows the datafill for table OCCINFO. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table OCCINFO

Field	Subfield	Explanation and action
CARRNAME		*Carrier name* Enter the carrier name or a 1- to 16-character alphanumeric abbreviation of the carrier name as defined in table OCCNAME. This table must have a tuple with the carrier name NILC to handle subscribers who want a null PIC.
CARRNUM		*Carrier number* Enter the CIC (0000 to 9999). The CIC is equal to the XXXX digits in the Equal Access prefixes (101XXXX or 950-WXXX). ***Note 1:*** Only 256 entries by office are accepted. ***Note 2:*** Although N is included in the range of values, it is not a valid entry for this field.

-continued-

NTX710AB - LATA Equal Access System (continued)

Datafilling table OCCINFO (continued)

Field	Subfield	Explanation and action
ACCESS		*Access arrangement* Enter one of the following access types accepted by the carrier to handle a call: NONE no access INTERIM interim dialing over FGD signaling EAP EAP dialing over FGD signaling OTC FGC dialing over FGC signaling (local billing) TRANS both interim and EAP dialing over FGD signaling FGC FGC dialing over FGC signaling (FGD billing) ***Note 1:*** In order for the EACARR OM group to record OM data, this field must be set to EAP, INTERIM, TRANS, or FGC. If the ACCESS field is set to NONE, none of the EACARR registers will be pegged. ***Note 2:*** This field must be set to NONE for the NILC tuple.
ORIGCARR		*Original carrier* This field specifies the carrier as original or duplicate when more than one carrier is entered with the same carrier number (field CARRNUM). Only one carrier of a group of carriers with the same CARRNUM can be the original carrier. Enter Y if the carrier is the original carrier. Otherwise, enter N. Default is N.
INTER		*Inter-LATA* Enter Y if the carrier can handle inter-LATA traffic. Otherwise, enter N.
INTNTL		*International* Enter Y if the carrier can handle international traffic. Otherwise, enter N.
INTRA		*Intra-LATA* Enter Y if the carrier can handle intra-LATA traffic. Otherwise, enter N.
ANI		*Automatic number identification* Enter Y if the carrier wants ANI digits sent with the called number. Otherwise, enter N.
FANI		*Flexible ANI* Enter Y if the carrier can receive flexible ANI information digits instead of standard ANI information digits. Otherwise, enter N.

-continued-

NTX710AB - LATA Equal Access System (continued)

Datafilling table OCCINFO (continued)		
Field	**Subfield**	**Explanation and action**
ONISCRN		*Operator number identification screening* Enter Y if ONI traffic requires screening by an operator or CAMA position before outpulsing to the carrier. Otherwise, enter N.
AD1		*Abbreviated dialing number one* Enter Y if the carrier can be accessed using abbreviated dialing. Otherwise, enter N.
OVERLAP		*Overlap* Not used with LEAS.
INTERS		*Inter-state* Enter Y if the carrier can handle traffic between states. Otherwise, enter N.
INTRAS		*Intra-state* Enter Y if the carrier can handle traffic within the same state. Otherwise, enter N.
TERMREC		*Terminating access record* Enter the length (LONG or SHORT) of the terminating access record produced for the carrier. Default value is SHORT. ***Note:*** Access records are produced only when the OCCTERM option in table AMAOPTS is set to ON.
OCCSEPNO		*Other common carrier separation number* Enter the separation number (0 to 127) for the carrier in the Traffic Separations Measurement System.
OPSIG		*Operator signaling* Enter the type of operator signaling provided by the carrier. Enter FGRPC for FGD carriers that require FGC operator signaling. Enter NONE for all other FGD carriers. This entry is ignored for FGC carriers.
PICIND		*Presubscription indication* Enter Y if the carrier has chosen to receive the presubscription indicator; otherwise enter N. This field must be datafilled for every entry in table OCCINFO.
		-continued-

Datafilling table OCCINFO (continued)		
Field	**Subfield**	**Explanation and action**
NOA950		*Nature of address indicator* Enter Y to show that the nature of address indicator in the calling party number parameter is set to 1111110. This binary values means that the call is a network specific, 950+ call from public station or hotel/motel line or non-EAEO. Enter N to show that the nature of address indicator in the calling party number parameter is set to the usual value. ***Note:*** The default value of N will cause no change in the existing operation of the switch.
INCCPN		*Include calling party number* Enter N to indicate that the calling party number parameter is to be removed from any IAM sent to this carrier. Otherwise enter Y, the default value.
CTDOA		*Carrier toll deny operator assisted* Enter Y to block OA calls to this carrier when the subscriber has the CTD line option applied for this carrier. Otherwise, enter N, the default value.
CRMCRA		*Circuit reservation and acknowledgement messages* Enter Y if the following conditions are met: ▪ a CRM should be sent from an AT to an IEC on FGD calls outgoing over CCS7 ATC trunk groups ▪ a subsequent CRA message should be received at the AT from the IEC on FGD calls incoming to the AT on either MF IT or SC trunks. Otherwise, enter N.
End		

Datafill example for table OCCINFO

The following example shows sample datafill for table OCCINFO.

NTX710AB - LATA Equal Access System (continued)

Datafill example for table OCCINFO

Example of a MAP display:

```
CARRNAME CARRNUM ACCESS INTER INTNTL INTRA ANI FANI ONISCRN AD1
OVERLAP INTERS INTRAS TERMREC OCCSEPNO OPSIG PICIND NOA950
INCCPN DTMFIND OPSERV CACBLOCK CTDOA CMCMON SCRNWATS CRMCRA
ATPINCL INTRAOPR
```

```
    C111      111   EAP     Y      Y     N   Y    N         N  Y
    Y        Y      Y    LONG       O  FGRPC      Y       N
     N       N      N        N     N      N        N       Y
      N        N
```

Datafilling table HNPACONT

The following procedure shows the datafill for table HNPACONT. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table HNPACONT

Field	Subfield	Explanation and action
NPA		*Serving translation scheme* Enter the three-digit SNPA or STS code. ***Note:*** An HNPA or SNPA must have 1 or 0 (zero) as its middle digit and must be datafilled in one of the first 16 positions. Only SNPAs may be used in line data, POTS virtual facility group (VFG) data, private branch exchange (PBX) trunk data, and tables DN, WRDN, and THOUGRP. STS codes other than SNPA may be datafilled in any position. However, to provide for the addition of SNPAs after the initial datafill, space may be reserved for them in the first 16 positions of table HNPACONT. Reserve space by adding dummy SNPAs before STS's other than SNPA are entered.
MAXRTE		*Number of route references* Enter 2 for the quantity of route reference numbers. This field is automatically extended to the highest route index (1 to 1023) used in subtable HNPACONT.RTEREF.
NOAMBIGC		*Number of ambiguous codes* Enter the number of ambiguous codes required (0 to 159).

Datafill example for table HNPACONT

The following example shows sample datafill for table HNPACONT. Datafill for digits 911 must be included in table HNPACONT to allow routing to the operating company for 911 emergency calls. All 10XXX+0+911 or 0+911 calls route to the operating company operator system.

Datafill example for table HNPACONT

Example of a MAP display:

```
NPA MAXRTE NOAMBIGC RTEREF HNPACODE ATTRIB RTEMAP
---------------------------------------------------
407    809        8 (  32) (     1) (   0) (   0)
```

NTX710AB - LATA Equal Access System (continued)

Datafilling subtable HNPACONT.HNPACODE

The following procedure shows the datafill for subtable HNPACONT.HNPACODE. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling subtable HNPACONT.HNPACODE

Field	Subfield	Explanation and action
FROMDIGS		*From digits* Enter a numeric string where the leading three digits represent an office code within the home NPA. This number may represent a single code or the first in a block of consecutive codes which have the same input data.
TODIGS		*To digits* If field FROMDIGS represents a single code, enter the same single code as in FROMDIGS. If field FROMDIGS represents the first number of a block of consecutive numbers, enter the last number in the block.
CDRRTMT		*Code type, route reference and treatment* This field consists of the following subfields.
	CD	*Code type* Enter LRTE for local route.
	RR	*Route reference index* Enter the route reference index number (1 to 1023) associated with this SNPA.

Datafill example for subtable HNPACONT.HNPACODE

The following example shows sample datafill for subtable HNPACONT.HNPACODE.

Datafill example for subtable HNPACONT.HNPACODE

Example of a MAP display:

```
           FROMDIGS              TODIGS
                                    CDRRTMT
--------------------------------------------------------
                022                 022
                                   TTC     1
```

Datafilling table STDPRTCT

Table STDPRTCT lists the name of each standard pretranslator subtable defined by the operating company. The following procedure shows the datafill for table STDPRTCT. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table STDPRTCT

Field	Subfield	Explanation and action
EXTPRTNM		*External standard pretranslator subtable name* Enter the name defined by the operating company to represent the standard pretranslator subtable. Note that standard pretranslator name C7PT is automatically used by ISUP trunks on test calls in offices with ISUP capability.

Datafill example for table STDPRTCT

The following example shows sample datafill for table STDPRTCT.

Datafill example for subtable STDPRTCT

Example of a MAP display:

```
EXTPRTNM   STDPRT   AMAPRT
-------------------------------
     POT1 (    1) (    1)
```

Datafilling subtable STDPRTCT.STDPRT

Subtable STDPRTCT.STDPRT is the first table to be indexed by the received leading digits when the originating line attribute (from table LINEATTR) or trunk (from table TRKGRP) specifies a pretranslator name.

The following procedure shows the datafill for subtable STDPRTCT.STDPRT. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

NTX710AB - LATA Equal Access System (continued)

Datafilling subtable STDPRTCT.STDPRT		
Field	**Subfield**	**Explanation and action**
FROMDIGS		*From digits* Enter the digit(s) to be translated. If the entry is a block of consecutive numbers, enter the first number in the block.
TODIGS		*To digits* If FROMDIGS is a block of consecutive numbers, enter the last number in the block. Otherwise, this field equals FROMDIGS.
PRETRTE		*Pretranslation route* For Equal Access calls, this field is composed of the following subfields.
	PRERTSEL	*Pretranslator route selector* Enter EA, the pretranslator route selector for Equal Access calls.
	TYPCALL	*Type of call* Enter the type of call: DD, NP (no prefix), or OA. ***Note:*** TYPCALL must be set to DD to enable call billing.
	NOPREDIG	*Number of prefix digits* Enter the number of prefix digits (0 to 7).
	XLA_INFO	*Equal Access translation information* This subfield is composed of subfield XLATYPE.
	XLATYPE	*Equal Access translation type* Enter one of the following values: N when no further digit translation or screening is required. A route must then be specified in subfield RTEAREA. P when further pretranslation is required. A pretranslator subtable name must be entered in subfield PRTNM. T when no further pretranslation is required. Translation then proceeds as determined by subfield TRANSYS.
	PRTNM	*Pretranslator subtable name* Enter the name of the pretranslator subtable that translation routes to for pretranslation of the remaining digits. This field is displayed when XLATYPE = P.

-continued-

NTX710AB - LATA Equal Access System (continued)

Datafilling subtable STDPRTCT.STDPRT (continued)

Field	Subfield	Explanation and action
	TRANSYS	*Translation system* Enter one of the following values: NA when translation is to proceed to North American digit translations and screening. IN when translation is to proceed to international translations. NO when no further translation or screening is required. This field is displayed when XLATYPE = T.
	CARRNAME	*Carrier name* Enter the name of the carrier, as defined in table OCCNAME, to which the call is offered.
	RTEAREA	*Route area* This field is composed of subfield RTEPRSNT.
	RTEPRSNT	*Route present* Enter Y to datafill the following fields. Otherwise, enter N.
	EXTRTEID	*External route ID* This subfield is composed of subfields TABID and KEY.
	TABID	*Table identifier* Enter an office route table name (OFRT, OFR2, OFR3, or OFR4).
	KEY	*Index* Enter the office route index (0 to 1023) that the translation is routed to.
	MINDIGSR	*Minimum digits received* Enter the minimum number of digits (1 to 18) to be collected before routing the call.

-continued-

NTX710AB - LATA Equal Access System (continued)

Datafilling subtable STDPRTCT.STDPRT (continued)		
Field	**Subfield**	**Explanation and action**
	MAXDIGSR	*Maximum digits received* Enter the maximum number of digits (1 to 24) to be collected before routing the call.
OCS		*Overlap carrier selection* If this field is set to Y and the carrier has field OVERLAP set to Y in table OCCINFO, then the call uses OCS. Otherwise, OCS is not used.
		End

Datafill example for subtable STDPRTCT.STDPRT - SAC using the F selector

The following example shows sample datafill for subtable STDPRTCT.STDPRT - SAC using the F selector.

Datafill example for subtable STDPRTCT.STDPRT - SAC using F selector

Example of a MAP display:

```
    FROMDIGS       TODIGS                    PRETRTE
-------------------------------------------------------

   163164555          555
            EA DD 0 T NA      OCCTRANS222 N

   626           626
                                              EA
DD 0 T NA   OCCFGC444   N
```

Datafill example for subtable STDPRTCT.STDPRT - incoming SC trunks

The following example shows sample datafill for subtable STDPRTCT.STDPRT - incoming SC trunks.

Datafill example for subtable STDPRTCT.STDPRT - incoming SC trunks

Example of a MAP display:

```
 EXTPRTNM  STDPRT  AMAPRT
-------------------------------------------------------

     POT1 (    1) (    1)
```

Datafill example for subtable STDPRTCT.STDPRT - separating OA and DD traffic

The following example shows sample datafill for subtable STDPRTCT.STDPRT - separating OA and DD traffic.

NTX710AB - LATA Equal Access System (continued)

Datafill example for subtable STDPRTCT.STDPRT - separating OA and DD traffic

Example of a MAP display:

```
    FROMDIGS       TODIGS                      PRETRTE
  ____________________________________________________
  00                 00
           EA OA 1 T NO OCCFGC444 Y      OFRT
```

Datafill example for subtable STDPRTCT.STDPRT - combining OA and DD traffic

The following example shows sample datafill for subtable STDPRTCT.STDPRT - combining OA and DD traffic.

Datafill example for subtable STDPRTCT.STDPRT - combining OA and DD traffic

Example of a MAP display:

```
    FROMDIGS       TODIGS                      PRETRTE
  ____________________________________________________
16900              00
                   EA OA 1 T NO OCCTRABS222 Y    OFRT
 889  2  2 N

          011               011
                                                 EA
TRANS222  N
```

Datafilling table LATANAME

Table LATANAME lists the name, defined by the operating company, of the LATAs served by the end office. Up to 31 LATAs can be entered. A null LATA (NILLATA) is added internally as the first LATA in the list. This tuple does not appear in the table printout. The following procedure shows the datafill for table LATANAME. See *Common Customer Data Schema,* 297-1001-451, for a detailed description of the table.

Datafilling table LATANAME

Field	Subfield	Explanation and action
LATANAME		*LATA name* Enter the 1- to 16-character alphanumeric name of the LATAs used in this office.
LATANUM		*LATA number* Enter the LATA number (000 to 999) for the LATANAME.

NTX710AB - LATA Equal Access System (continued)

Datafill example for table LATANAME

The following example shows sample datafill for table LATANAME. In this example, four LATAs are used in the AT.

Datafill example for table LATANAME

Example of a MAP display:

```
LATANAME      LATANUM
-------------------------
L123          123
L456          456
LATA1         789
LATA2         759
```

Datafilling table TRKGRP (SC)

The following procedure shows the datafill for table TRKGRP for incoming SC trunks. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table TRKGRP (SC)

Field	Subfield	Explanation and action
GRPKEY		*Group key* This field contains subfield CLLI.
	CLLI	*Common language location identifier* Enter the code that represents the trunk group in table CLLI.
GRPINFO		*Variable group data* When GRPTYP is SC, this field consists of the following subfields.
	GRPTYP	*Group type* Enter SC, the trunk group type.
	TRAFSNO	*Traffic separation number* Enter the incoming or incoming and outgoing traffic separation number (0-127) assigned to the trunk group. If not required, enter 0 (zero).
	PADGRP	*Pad group* Enter the name of the pad group assigned to the trunk group in table PADDATA.

-continued-

NTX710AB - LATA Equal Access System (continued)

Datafilling table TRKGRP (SC) (continued)

Field	Subfield	Explanation and action
	NCCLS	*OM no circuit class* Enter the OM no circuit class to indicate which OM register is increased when treatment GNCT occurs. The initial value is NCRT: no circuit.
	TRAFCLS	*Traffic usage class* Enter the traffic usage class (IN, OG, or 2W) assigned to the trunk group.
		End

Datafill example for table TRKGRP (SC)

The following example shows sample datafill for table TRKGRP (SC) for incoming SC trunks.

Datafill example for table TRKGRP (SC)

Example of a MAP display:

```
        GRPKEY
                                                    GRPINFO
________________________________________________________________
      TEST0400
            SC 0 ELO NCRT IC MIDL 919 POT1 NLCA NSCR N NIL
        COMBINED N N 0 3333 ONI 12 NT N N
```

Datafilling table BILLCODE

CAMA verification is done with table BILLCODE for calls incoming on SC trunk groups. During CAMA verification, the NPA-NXX digits given in table BILLCODE become part of the calling digits, overwriting the NXX received with ANI or ONI. The verification process allows conversion to special billing numbers when required.

The following procedure shows the datafill for table BILLCODE. This procedure contains only those fields that apply to this package. See *Toll Customer Data Schema*, 297-2201-451, for a description of the other fields.

NTX710AB - LATA Equal Access System (continued)

Datafilling table BILLCODE Field	Subfield	Explanation and action
CLLI		*Common language location identifier* Enter the code assigned to the trunk group in table CLLI.
BILLCODE		*Billing code* This field should include all central office NXX codes, special billing codes, and WATS originating codes that are allowed to originate DDD calls over the trunk group. For ONI screening, enter 000.
LCANAME		*Local calling area screening table name* Where screening of local NXX codes is required, enter the name of the local calling area screening subtable which lists the local codes. Where screening of local NXX codes is not required, enter NLCA.
SCRNCL		*Class of service screening table name* Where screening by class of service is required, enter the name of the class of service screening subtable assigned to the trunk group. Where screening by class of service is not required, enter NSCR. (See table CLSVSCRC.)
ACTUALBC		*Actual billing code* Enter the actual 6-digit billing code (NPA + NNX) to be entered on the AMA tape. For ONI screening, enter 000000.
CHGCLSS		*Charge class* Enter the charge class in the toll entry code table to which the billing code is assigned. For ONI screening, enter NONE.

Datafill example for table BILLCODE

The following example shows sample datafill for table BILLCODE.

Datafill example for table BILLCODE

Example of a MAP display:

```
        CLLI
          BILLCODE LCANAME SCRNCL ACTUALBC CHGCLSS
-------------------------------------------------------
ICAMDCM
             621     HULL   TCA9   613621    CAMO
```

Datafilling table OFRT

Table OFRT contains route lists that are pointed to from tables other than the home NPA code subtable (HNPACONT.HNPACODE) or the foreign NPA code subtable (FNPACONT.FNPACODE).

The following procedure shows the datafill for table OFRT. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table OFRT

Field	Subfield	Explanation and action
RTESEL		*Route selector* Enter CND to specify a condition before routing. If the condition is met, then the instructions of this route element are executed. Otherwise, they are skipped and translation will look for instructions in the next route element.
RTELIST		*Route list* This field consists of the following subfields.
	CNDSEL	*Condition selector* Enter EA as the type of condition to be tested.
	EA_CND_RTE	*Condition subselector* Enter one of the following values: CAC for an Equal Access call where 10XXX is dialed INTNL for an Equal Access international call PIC for an Equal Access call

Datafill example for table OFRT

The following example shows sample datafill for table OFRT.

Datafill example for table OFRT

Example of a MAP display:

```
RTE                                  RTELIST
--------------------------------------------
  1                          CND EA CAC SK 3
```

Datafilling table CLSVSCRC

The following procedure shows the datafill for table CLSVSCRC. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

NTX710AB - LATA Equal Access System (continued)

Datafilling table CLSVSCRC		
Field	**Subfield**	**Explanation and action**
NPASCTYP		*STS screening class and type of call* This field consists of the following subfields.
	STS	*Serving translation scheme* Enter the serving HNPA for a given trunk group or line attribute.
	SCRNCL	*Screening class* Enter the class of service screening subtable name assigned to the trunk group, line attribute, or CAMA or AMR5 billing code.
	TYPCALL	*Type of call* Enter the type of call. Valid options are DD, OA, or NP.

Datafill example for table CLSVSCRC

The following example shows sample datafill for table CLSVSCRC.

Datafill example for table CLSVSCRC

Example of a MAP display:

```
     NPASCTYP NORSLTS       TMTOFRT CLSVSCR
------------------------------------------------
    407 STER DD     2    N      NONE (     1)
```

Datafilling table TMTCNTL

Table TMTCNTL defines the tones, announcements, or states sent to the originator of a call when a treatment code is encountered during translation.

The following procedure shows the datafill for table TMTCNTL. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table TMTCNTL		
Field	**Subfield**	**Explanation and action**
EXTTMTNM		Enter OFFTREAT.
TREATMT		*Treatment* Enter the treatment name.

-continued-

Datafilling table TMTCNTL (continued)		
Field	**Subfield**	**Explanation and action**
LOG		*Log* Enter Y to print a trunk or line message 138 when translation is routed to a treatment. Otherwise, enter N.
FSTRTE		*First route* This field consists of the following subfields.
	FSTRTSEL	*First route selector* Enter T, the first route selector.
	TABID	*Table name* Enter the office route table name.
	KEY	*Key* Enter the index (1 to 1023) into the office route table which defines the route list for the treatment.
End		

Datafill example for table TMTCNTL

The following example shows sample datafill for table TMTCNTL.

Datafill example for table TMTCNTL

Example of a MAP display:

```
EXTTMTNM     TREAT
-------------------------------------------------------------------------------
OFFTREAT    ( 137)
```

Datafill example for subtable TMTCNTL.OFFTREAT

The following example shows sample datafill for subtable TMTCNTL.OFFTREAT. For each EXTTMTNM field in table TMTCNTL, there is a subtable that includes an entry for each valid treatment for the type of origination corresponding to that subtable.

NTX710AB - LATA Equal Access System (continued)

Datafill example for subtable TMTCNTL.OFFTREAT

Example of a MAP display:

```
 TREATMT      LOG                  FSTRTE
-------------------------------------------
UNDT          Y     T              OFRT  30
PDIL          Y     T              OFRT  25
PSIG          Y     T              OFRT  25
VACT          Y     T              OFRT  28
NCRT          Y     T              OFRT  24
CACE          Y     T              OFRT  50
DACD          Y     T              OFRT  51
D950          Y     T              OFRT  52
N950          Y     T              OFRT  53
NACD          Y     T              OFRT  54
ILRS          Y     T              OFRT  55
IVCC          Y     T              OFRT  56
```

Datafilling table OCCRDIG

Table OCCRDIG provides the regional code for outpulsing to the INC for calls to an NPA within World Zone 1, but outside the continental United States. The regional code is a single digit prefixed by 01. The code is written in the generic form 01R and it follows the CAC during the first stage of outpulsing.

The following procedure shows the datafill for table OCCRDIG. See *Common Customer Data Schema*, 297-1001-451, for a detailed description of the table.

Datafilling table OCCRDIG Field	Subfield	Explanation and action
OCCRSNPA		*Other common carrier R digit serving NPA* Enter a valid NPA within World Zone 1, but outside the continental United States. The NPA must be datafilled in table HNPACONT.
OCCRDIG		*Other common carrier R digit* Enter the digit of the region where the NPA defined in field OCCRSNPA is located. The valid digits are as follows: 0 reserved NPA 3 Canada 5 Mexico 7 Alaska 8 Hawaii 9 Caribbean The default value is 1.
OUTCNUS		*Outside continental United States* Specify whether the region defined in field OCCRDIG is outside the continental United States by entering N or Y. Enter N if the NPA defined in field OCCRSNPA is reserved (700, 800, or 900) and is not within a specific region. Enter Y if the NPA defined in field OCCRSNPA is not reserved and is within a specific region outside the continental U.S.

Datafill example for table OCCRDIG

The following example shows sample datafill for table OCCRDIG. In this table, NPA 403 is defined as located in Canada, thus outside the continental United States.

Datafill example for table OCCRDIG

Example of a MAP display:

```
OCCRSNPA OCCRDIG OUTCNUS
---------------------------
     403      3       Y
```

Datafilling table LATAXLA

The following procedure shows the datafill for table LATAXLA. This table defines the attributes of domestic calls (inter-LATA or intra-LATA, interstate or intrastate). These attributes are then compared with those of the carriers in table OCCINFO to determine which carriers should handle the calls. See

NTX710AB - LATA Equal Access System (continued)

Common Customer Data Schema, 297-1001-451, for a detailed description of the table.

Datafilling table LATAXLA

Field	Subfield	Explanation and action
LATACODE		*LATA code* This key field consists of the following subfields.
	LATANM	*Calling LATA name* Enter the LATA name as defined in table LATANAME.
	DIGITS	*Dialed digits* This field contains the 1 to 18 digits that can be dialed to access the LATA. Enter only those digits for which one of the following sets of attributes applies: ▪ intra-LATA, interstate ▪ inter-LATA, interstate ▪ inter-LATA, intrastate The DMS switch assumes that any code not defined in the DIGITS field has the intra-LATA, intrastate attributes (default entry). The DIGITS field allows the DMS switch to distinguish between NPA and ambiguous codes while determining the call attributes for carrier screening.
LATA		*LATA call attribute* Enter INTER or INTRA to define a code as inter-LATA or intra-LATA.
STATE		*STATE call attribute* Enter INTER or INTRA to define a code as interstate or intrastate.
EATYPE		*Equal Access type call* Enter the appropriate Equal Access call type to identify the call as standard (STD), CORRIDOR, PRIVILEGE, or NON_EA. Only inter-LATA calls can be identified as CORRIDOR or PRIVILEGE. Only intra-LATA calls can be identified as NON_EA.

Datafill example for table LATAXLA

The following example shows sample datafill for table LATAXLA.

Datafill example for table LATAXLA

Example of a MAP display:

```
                    LATACODE   LATA   STATE      EATYPE

        L123             203 INTER  INTER          STD
```

Datafilling table PICNAME

The following procedure shows the datafill for table PICNAME. This procedure contains only those fields that apply to this package. See *TOPS Customer Data Schema,* 297-2271-451, for a description of the other fields.

Datafilling table PICNAME

Field	Subfield	Explanation and action
PICNAME		*Carrier name* Enter the valid PIC name as defined in table OCCNAME.

Datafill example for table PICNAME

The following example shows sample datafill for table PICNAME.

Datafill example for table PICNAME

Example of a MAP display:

```
     PICNAME

  NOCAR
  CARR1
```

Datafilling table DNPIC

The following procedure shows the datafill for table DNPIC. This procedure contains only those fields that apply to this package. See *TOPS Customer Data Schema,* 297-2271-451, for a description of the other fields.

Datafilling table DNPIC

Field	Subfield	Explanation and action
DNKEY		*Directory number key* Enter the value for the DN, which has four parts: an NPA code, an NXX code, and two XX codes (line number).
DNPIC		*Directory number primary inter-LATA carrier* Enter a carrier name as datafilled in table PICNAME.

-continued-

NTX710AB - LATA Equal Access System (continued)

Datafilling table DNPIC (continued)

Field	Subfield	Explanation and action
CHOICE		*Choice* Enter Y if the subscriber can use 10XXX dialing. Otherwise, enter N.
CTD		*Carrier toll denied* The CTD field consists of the following subfields.
	CTDSEL	*CTD selection* Enter Y if one or more carriers have denied service to this subscriber; otherwise enter N. If this feature package is not present, CTDSEL must be N.
	CARRIERS	*List of carriers* If CTDSEL = Y, enter one, two, or three carriers that have denied service to this subscriber. Enter a dollar sign ($) after the last carrier name.

End

Datafill example for table DNPIC

The following example shows sample datafill for table DNPIC.

Datafill example for table DNPIC

Example of a MAP display:

```
         DNKEY   DNPIC CHOICE                                        CTD
-------------------------------------------------------------------------
619 239 11 11   C111       Y                                          N
```

Datafilling table SPLANILN

The following procedure shows the datafill for table SPLANILN. This procedure contains only those fields that apply to this package. See *TOPS Customer Data Schema,* 297-2271-451, for a description of the other fields.

Datafilling table SPLANILN Field	Subfield	Explanation and action
DNKEY		*Directory number key* Enter the SNPA and the DN of each of the special lines.
LINEINFO		*Line information* Enter the appropriate line type that corresponds to the DN of the originating line: COIN for coin line, HOT for hotel line, RSP for restricted coinless public line, or RSPCO for restricted coin line.

Datafill example for table SPLANILN

The following example shows sample datafill for table SPLANILN.

Datafill example for table SPLANILN

Example of a MAP display:

```
 DNKEY                                        LINEINFO
-------------------------------------------------------
613   228   11    89    COIN
613   228   84    50    HOT
613   245   65    66    COIN
613   841   11    11     RSP
613   841   11    12    RSP
613   841   11    14     HOT
613   841   99    99    RSPCO
```

Datafilling table TRKLATA

The incoming trunk group CLLI and calling NPA or NPA-NXX are used by table TRKLATA to determine the originating LATA of the call. This table must contain at least one tuple for each incoming trunk for which the INTERLATA conditional route selector is used. Failure to datafill an incoming trunk group and the associated calling digits results in the call being treated as an intra-LATA call.

The following procedure shows the datafill for table TRKLATA. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema,* 297-1001-451, for a description of the other fields.

NTX710AB - LATA Equal Access System (continued)

Datafilling table TRKLATA Field	Subfield	Explanation and action
ORIGKEY		*Originating key* This field consists of the following subfields.
	TRUNKNM	*Trunk name* Enter the name of the trunk group as defined in table CLLI. There is no default.
	CLGCODE	*Calling code* Enter the NPA or NPA-XXX of the calling number in an incoming call. There is no default.
ORIGLATA		*Originating LATA name* Enter the name of the LATA for the originating non-EAEO. This LATA must be defined in table LATANAME. There is no default.
LEASTRNK		*LEAS trunk* This field indicates whether or not a trunk carries LEAS traffic, and specifies the default carrier or treatment for that trunk. See subfields LEASTRK and CARRTRMT.
	LEASTRK	*LEAS trunk selector* Enter Y in LEAS offices for SC trunks. Enter Y if TOPS trunks have field ENDOFFICE in table TOPEATRK set to NCONFORM. Otherwise, enter N.
	CARRTRMT	*Carrier or treatment selector* Enter Y to specify the default disposition for the LEAS trunk group, either a carrier or a treatment. Enter C to indicate carrier, and the CARRIER field follows. Enter T to indicate treatment, and the TREAT field follows.
CARRIER		*Carrier name* Enter the name of the IEC or INC as defined in table OCCNAME.
TREAT		*Treatment name* Enter the name of the treatment used as the default disposition. The recommended treatment is DACD, which should tell subscribers to dial 10XXX.

Datafill example for table TRKLATA

The following example shows sample datafill for table TRKLATA.

NTX710AB - LATA Equal Access System (continued)

Datafill example for table TRKLATA

Example of a MAP display:

```
 ORIGKEY              ORIGLATA        LEASTRNK
 ___________________________________________________________
  ICTOPS1     000      LATA2          Y  C       CAR1
```

Datafilling table FXDNMAP

The following procedure shows the datafill for table FXDNMAP. This procedure contains only those fields that apply to this package. See *TOPS Customer Data Schema*, 297-2271-451, for a description of the other fields.

Datafilling table FXDNMAP

Field	Subfield	Explanation and action
FXNUM		*Foreign exchange line number* Enter any valid 10-digit foreign exchange number.
ACTLNUM		*Actual number* Enter any 10-digit hotel or restricted number to which the call is billed.

Datafill example for table FXDNMAP

The following example shows sample datafill for table FXDNMAP.

Datafill example for table FXDNMAP

Example of a MAP display:

```
        FXNUM
                                  ACTLNUM
 ___________________________________________________________
  8197851416                        6133290411
```

Datafilling table EASAC

Table EASAC lists the N0/1X codes that are to be treated as SACs. The table has one field, SAC. Every code that is to be a SAC must be entered in table EASAC. Codes can be added to or deleted from table EASAC, but no tuple can be changed.

The following procedure shows the datafill for table EASAC. This procedure only contains information that applies to this package. See *Common Customer Data Schema*, 297-1001-451, for additional information.

NTX710AB - LATA Equal Access System (continued)

Datafilling table EASAC		
Field	**Subfield**	**Explanation and action**
SAC		*Service access code* Enter each N0/1X code that is to be treated as a SAC. No N11 codes (such as 411, 611, and 911) are allowed.

Datafill example for table EASAC

The following example shows sample datafill for table EASAC.

Datafill example for table EASAC

Example of a MAP display:

```
SAC
---

800
```

Datafilling table CICSIZE4

Table CICSIZE4 contains the trunk groups which use four-digit CICs. Trunk groups that do not appear in this table are assumed to use three-digit CICs. The following procedure shows the datafill for table CICSIZE4. See *Common Customer Data Schema*, 297-1001-451, for additional information.

Datafilling table CICSIZE4		
Field	**Subfield**	**Explanation and action**
TRUNKGRP		Enter the trunk groups that use a 4-digit CIC. This table is datafilled only during the permissive phase, when office parameter EA_TAB_CICSIZE4_OBSOLETE is set to N. When this parameter is set to Y, table CACSIZE4 is not used.

Datafill example for table CICSIZE4

The following example shows sample datafill for table CICSIZE4.

Datafill example for table CICSIZE4

Example of a MAP display:

```
TRUNKGRP
--------

TGRPX
TGRPY
TGRPZ
```

NTX710AB - LATA Equal Access System (end)

Translation verification tools

TRAVER

TRAVER mimics LEAS translation and routing in a DMS-200 AT. Depending on the command parameters used, TRAVER can produce any one of the following types of output for a call:

- all translation and routing tables
- all route lists
- both tables and route lists

Although LEAS handles incoming calls from both TOPS and SC trunks, the LEAS TRAVER tool only supports incoming SC call processing.

Service orders

Service orders are not applicable for this package.

NTXE14AB - CCS7 ISUP Inter-LATA Connection AT

Package name

CCS7 ISUP Inter-LATA Connection AT

Package number

NTXE14AB

Feature numbers

The NTXE14AB feature package consists of the following features:

NTXE14AB feature numbers and names

Feature number	Feature name
AG1254	ISUP Access Tandem FGD Signaling
AF2331	TOPS Trunks Interworking with CCS7 Trunks
AF2105	FGB Interworking with CCS7
AF2361	LEAS Interworking with CCS7
AG1539	ISUP Operations Administration and Maintenance Enhancements
AG1576	ISUP AT FGD Signaling II

BCS applicability

BCS31 and up

Feature package prerequisites

This package requires the following feature packages:

Feature package prerequisites

Feature package	Feature package name
NTX000AA	Bilge
NTX001AA	Common Basic
NTXE66AA	CCS7 ISUP Option Controls
NTX801AA	Toll Features I
NTX041AB or NTXR72AA	CCS7 MTP/SCCP
NTX167AB	CCS7 Trunk Signaling
NTX386AA or NTX386AB	Access Tandem Switch

NTXE14AB - CCS7 ISUP Inter-LATA Connection AT (continued)

Description

Feature package NTX386AB - Access Tandem Switch implemented Equal Access connections using MF signaling, also known as inband signaling. The NTXE14AB - CCS7 ISUP Inter-LATA Connection AT feature package implements the following capabilities:

- routing of incoming Equal Access calls over CCS7 trunks to a CCS7 or an MF IEC
- mixing of intra-LATA traffic and inter-LATA or international traffic
- routing of IEC calls to the EAEO over CCS7 trunks
- interworking of incoming TOPS MF trunks with CCS7 ATC trunks
- DP signaling on incoming TOPS trunks to ATC CCS7 trunks

Theory of operation

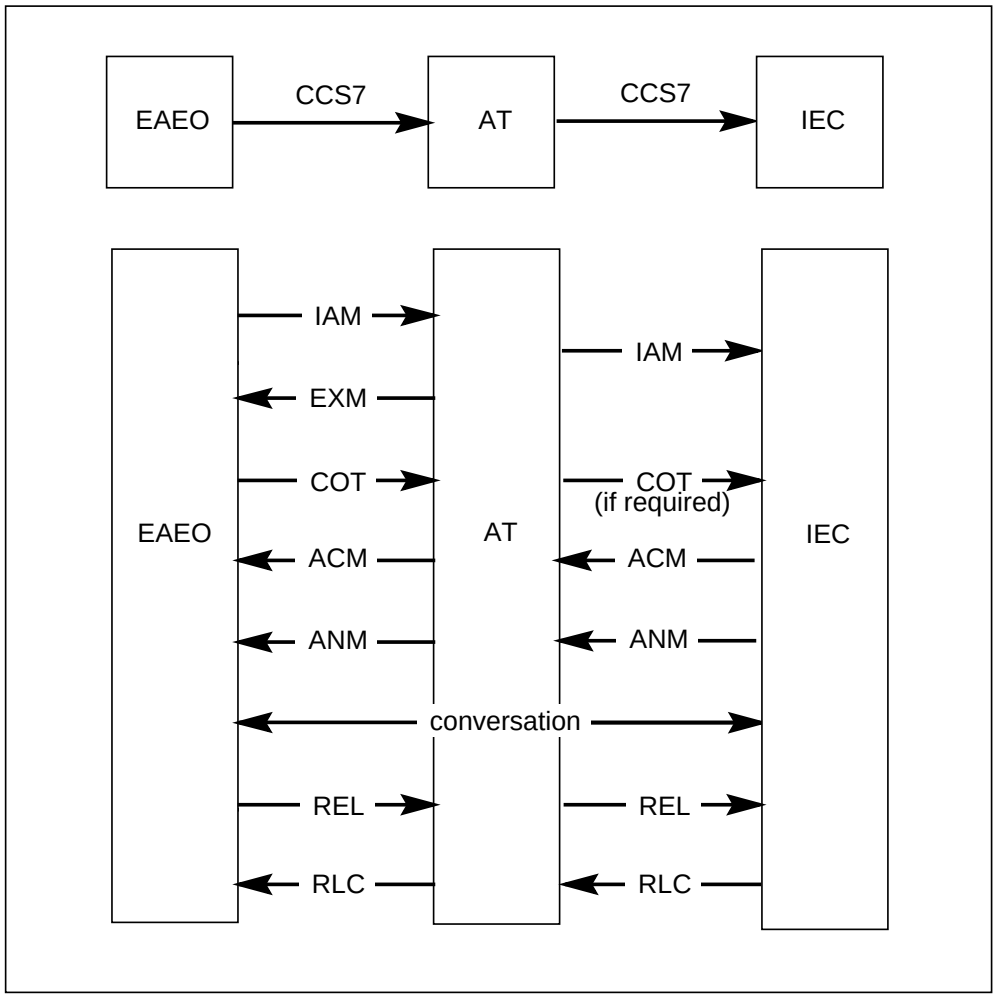
This section describes the following interworking scenarios:

- CCS7-to-CCS7 interworking
- CCS7-to-MF interworking
- CCS7-to-CCS7 interworking with E800
- CCS7-to-MF interworking with E800
- TOPS trunks interworking with CCS7 trunks
- FGB interworking with CCS7
- FGC interworking with CCS7

CCS7-to-CCS7 interworking

Figure 4-3 shows the CCS7 message flow for an Equal Access call originating in the EAEO over a CCS7 trunk and tandeming to a CCS7 IEC trunk.

Figure 4-3
CCS7-to-CCS7 Equal Access protocol



The IAM received at the AT must include the optional transit network selection (TNS) parameter. The parameter contains four octets of data, three of which represent the binary-coded-decimal (BCD) equivalent of the Equal Access CAC. The fourth octet indicates the Equal Access circuit code, which is analogous to the 0ZZ or 1N/N'X digits outpulsed on MF IECs. The TNS parameter (with the country code on international calls) indicates the outgoing IEC to be selected by the AT.

Once it selects a CCS7 IEC, the AT formulates an IAM. The TNS parameter is included in the IAM only for calls routed to a CCS7 INC. The AT starts a timer after sending the IAM to the IEC. An exit message (EXM) is sent to the EAEO upon receipt of an address complete message (ACM), answer message (ANM), or release message (REL) from the outgoing circuit, or

upon timeout of the timer, whichever occurs first. The EXM must precede any ACM or ANM sent to the EAEO. The EXM must also be sent before any REL generated by a message received from the IEC or by a repeated continuity check failure for the call on the circuit group to the IEC.

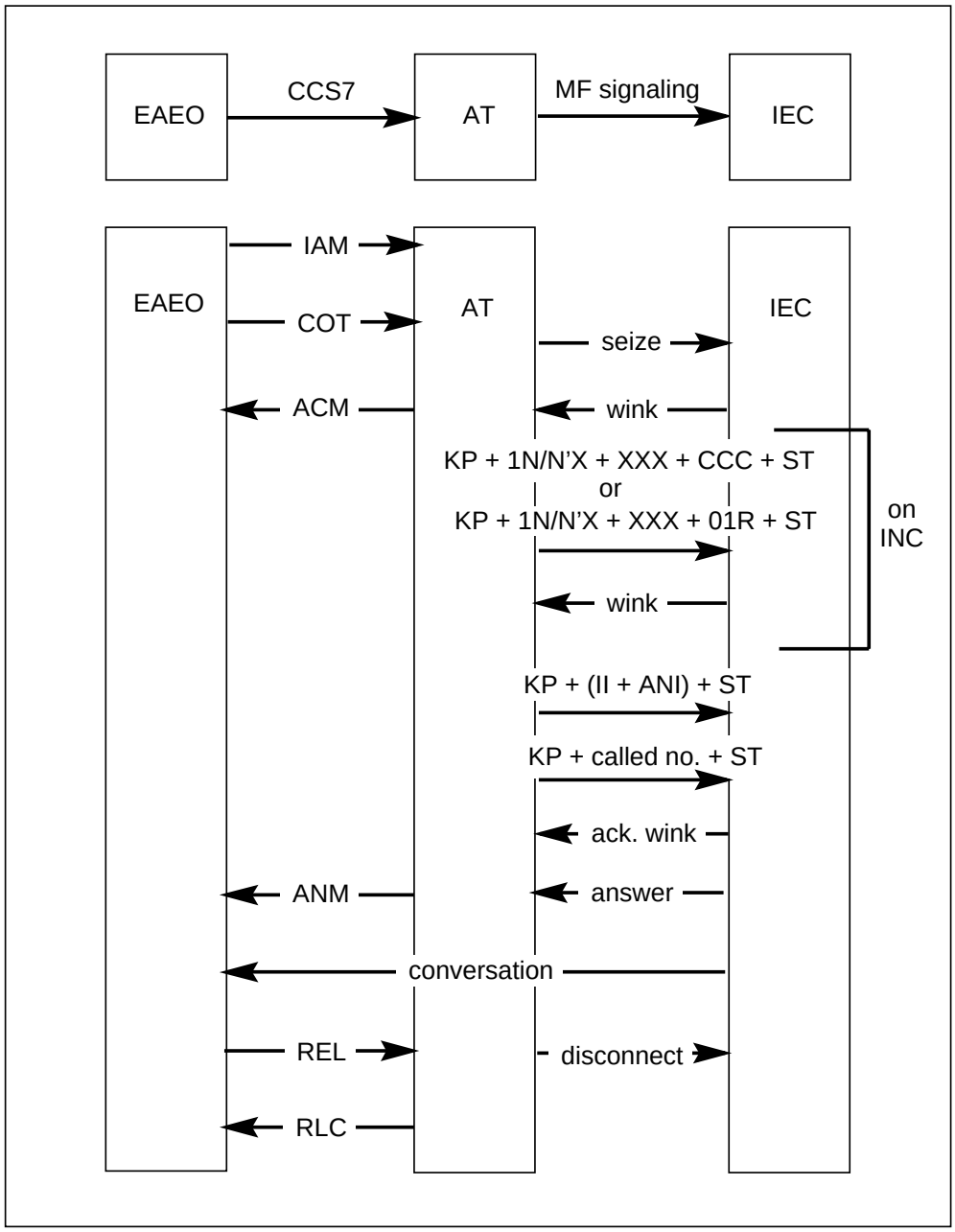
This timer should be set in at least 100-ms intervals from 100 to 1200 ms. This feature package hardcodes this timer value. In particular, the message priority field in the service information octet of the EXM is coded 10 to indicate a priority of 2. Also, the optional outgoing trunk group number parameter is included and contains the number of the trunk group used to route the call from the AT to the IEC. The trunk group number is found in field ADNUM of table CLLI.

The AT will not delay sending of the EXM pending completion of any continuity check on the incoming circuit.

CCS7-to-MF interworking

Figure 4-4 shows CCS7 messages interworking with MF signals for an Equal Access call originating in the EAEO over a CCS7 facility and tandeming to an MF IEC facility.

Figure 4-4
CCS7-to-MF Equal Access protocol



The AT seizes the outgoing circuit and waits for a wink. If the IAM contains an indication that a continuity check is performed on the incoming circuit, the AT does not wait until the continuity message (COT) is received with a "continuity check successful" indication before seizing the IEC.

NTXE14AB - CCS7 ISUP Inter-LATA Connection AT (continued)

An ACM is sent to the EAEO upon receipt of the wink from the MF IEC. Bit I of the ACM, the interworking bit, is set to 1 to indicate that interworking was encountered.

The AT is now ready to outpulse digits on the IEC. The TNS in the IAM indicates whether an IEC or INC is accessed by the AT.

The IEC MF signaling involves sending the ANI information digits, the calling number, and the called number. The sequence outpulsed depends on the nature of address code found in the received called party address parameter. TR-394 describes the relationship between the nature of address code and the MF sequence to be outpulsed. The expected coding of the called party address parameter is outlined in table 4-5.

Table 4-5
Called party address parameter coding

Nature of address	Odd/Even indicator	Address information	Meaning
0000001	1	7D	subscriber number
0000011	0	10D	national number
0000100	1/0	CC_NN	international number
1110001	1	7D	subscriber number (0+ call)
1110010	0	10D	national number (0+ call)
1110011	1/0	CC_NN	international call (0+ call)
1110100	0	none	no address, operator requested
1110101	0	none	no address, cut-through to IEC
1111110	1	7D	network specific: 950+ call

The IAM from the EAEO may contain a carrier selection parameter providing an indication of presubscription. The relationship between the carrier selection information and the proper KP outpulsed in the ANI sequence is shown in table 4-6.

Table 4-6
Carrier selection parameter mapping

Information	KP/KP '	Description
00000001	KP	presubscribed, CAC not dialed
00000010	KP	presubscribed, CAC also dialed
00000011	KP	presubscribed, no indication of dialing
00000100	KP '	not presubscribed, CAC dialed

An acknowledgment wink is expected from the IEC after outpulsing the called digits. The AT completes the transmission path after outpulsing the digits on the IEC and no later than on receipt of the acknowledgement wink.

An international call is distinguished from a domestic call by the nature of the address indicator within the called party number parameter included in the IAM arriving at the AT.

In the case where the call is destined for an MF INC, an additional sequence of digits must be outpulsed to the IEC. The additional sequence can take the form of KP+1N/N'X+XXX+CCC+ST or KP+1N/N'X+XXX+01R+ST. The AT must derive the 1N/N'X+XXX digits from the contents of the TNS parameter received in the IAM from the EAEO. The pseudo country code (CCC) is the country code found in the dialed digits padded with a leading zero. The CCC is present for calls to an INC terminating outside of World Zone 1. The 01R is present for calls to an INC terminating outside of the continental United States inside World Zone 1.

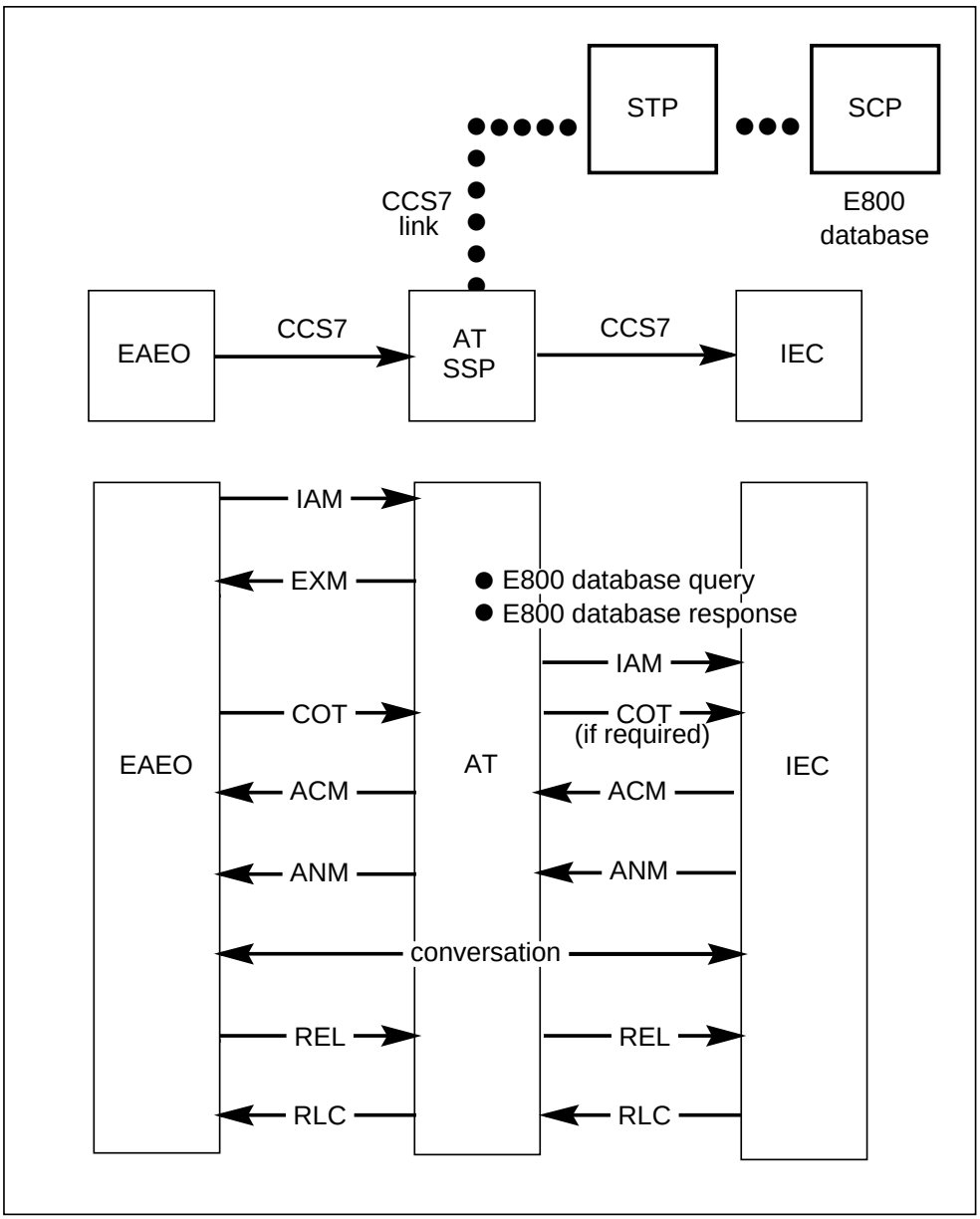
The AT will be able to derive the R digit from the NPA in the received called party number parameter. After outpulsing of the sequence KP+1N/N'X+XXX+CCC+ST or KP+1N/N'X+XXX+01R+ST, the AT waits for a wink from the IEC. The wink allows the outpulsing sequence to continue in a fashion similar to the IEC MF signaling case. Note that the called number is different for INC calls outside of World Zone 1, because it is composed of a country code (CC) and a national number (NN). Transmission path completion and the remaining messaging and signaling are similar to the IEC case described in this section.

CCS7-to-CCS7 interworking with E800

Figure 4-5 shows the CCS7 message flow for an E800 call originating in the EAEO over a CCS7 trunk, initiating an E800 database query at the AT SSP and completing over a CCS7 trunk. The outgoing CCS7 facility can be a local exchange carrier (LEC) or an IEC. The incoming E800 call can be an Equal Access call.

NTXE14AB - CCS7 ISUP Inter-LATA Connection AT (continued)

Figure 4-5
CCS7-to-E800-to-CCS7 protocol



An EXM is always sent to the EAEO when the the AT launches the query to the E800 database. When the database response from the E800 SCP is received at the AT, the call is completed based on the decoded routing information. The CCS7 messages returned to the EAEO depend on the type of facility on which the call is terminating. In this case the terminating facility is a CCS7 IEC or IEC.

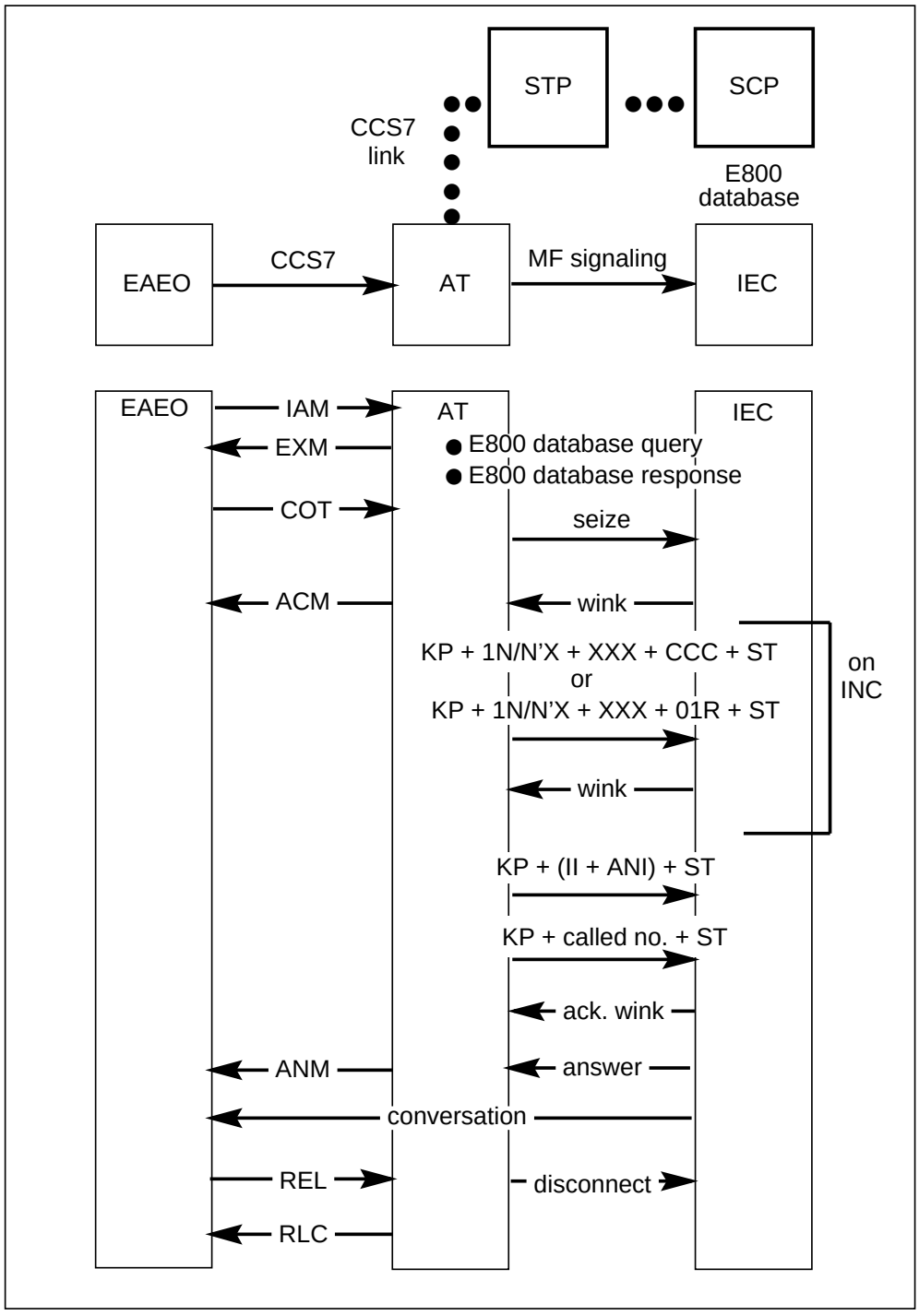
CCS7-to-MF interworking with E800

Figure 4-6 shows the CCS7 message and MF signal flow for an E800 call originating in the EAEO over a CCS7 trunk, initiating an E800 database query at the AT SSP and completing over an MF IEC.

Note: The COT/ACM messaging occurs independently of the SEIZE/WINK signaling.

NTXE14AB - CCS7 ISUP Inter-LATA Connection AT (continued)

Figure 4-6
CCS7-to-E800-to-MF IEC protocol



NTXE14AB - CCS7 ISUP Inter-LATA Connection AT (continued)

TOPS trunks interworking with CCS7 trunks

This feature package provides the TOPS AT with the capability to interwork incoming TOPS inband and DP trunks with ATC CCS7 trunks. The types of inband signaling supported are the following:

- traditional (BELL) operator services signaling
- modified BELL (MODBELL) signaling
- AMR5 signaling
- interim operator services signaling
- Equal Access FGD
- combined FGD
- Equal Access Operator Services Signaling (EAOSS)
- EAP FGD cut-through signaling

This feature package supports all call types currently supported by the TOPS AT that originate on TOPS trunks and terminate on ATC MF trunks. Inward operator calls from the IEC are also supported.

Currently, there are no specifications for operator functions (operator hold, coin control, and rering control) over CCS7 trunks. Operator functions will not be supported over the ATC CCS7 trunk on OA calls that are forwarded or transferred to the IEC operator.

FGB interworking with CCS7

This feature package provides the capability to interwork CCS7 with FGB, EAP, and traditional MF signaling for the 950-WXXX dialing plan. This feature is an enhancement to the CCS7-to-MF internetwork interworking capabilities presently supported by the DMS switch.

Figure 4-7 shows CCS7-to-FGB inband signaling interworking. This configuration is required for 950-WXXX call originations that terminate to an FGB IEC via the AT. The facilities between the EAEO and the AT are IT trunk groups supporting CCS7. The facilities between the AT and the FGB IEC can be either outgoing CAMA (OC) or ATC trunk groups supporting MF or DP FGB inband signaling.

NTXE14AB - CCS7 ISUP Inter-LATA Connection AT (continued)

Figure 4-7
FGB interworking with CCS7 configuration

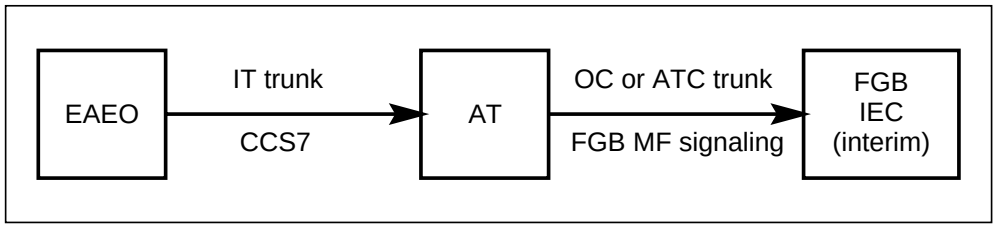


Figure 4-8 shows traditional MF-to-CCS7 interworking. This configuration is required for 950-WXXX call originations from a non-EAEO that terminate to an FGD IEC via the AT. The facilities between the non-EAEO and the AT are IT trunk groups supporting traditional inband signaling. The facilities between the the AT and the FGD IEC are ATC trunk groups supporting CCS7. Enhancements are provided by this feature in the AT to support the traditional inband signaling-to-CCS7 interworking.

Figure 4-8
Traditional MF signaling interworking with CCS7 configuration

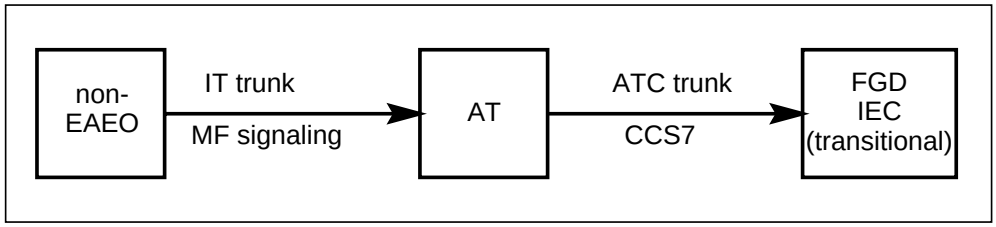
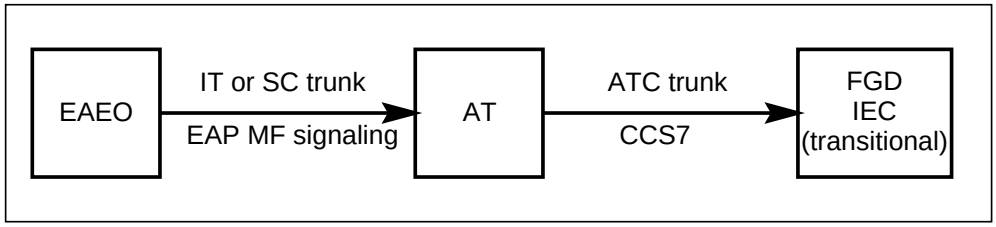


Figure 4-9 shows interworking for EAP MF-to-CCS7. This configuration is required for 950-WXXX call originations from an EAEO that terminate to an FGD IEC via the AT. The facilities between the EAEO and the AT are IT or SC trunk groups supporting EAP inband signaling. The facilities between the AT and the FGD IEC are ATC trunk groups supporting CCS7. Enhancements are provided by this feature in the AT to support the EAP MF-to-CCS7 interworking.

Figure 4-9
EAP signaling interworking with CCS7 configuration



FGC interworking with CCS7

This feature package provides two other interworking capabilities. They are FGC related and are shown in figures 4-10 and 4-11.

Figure 4-10 shows interworking for CCS7-to-FGC inband signaling. This configuration is required for call originations that terminate to an FGC IEC via the AT. The facilities between the EAEO and the AT are IT trunk groups supporting CCS7. The facilities between the AT and the FGC carrier are ATC trunk groups supporting FGC inband signaling.

Figure 4-10
CCS7-to-FGC inband signaling

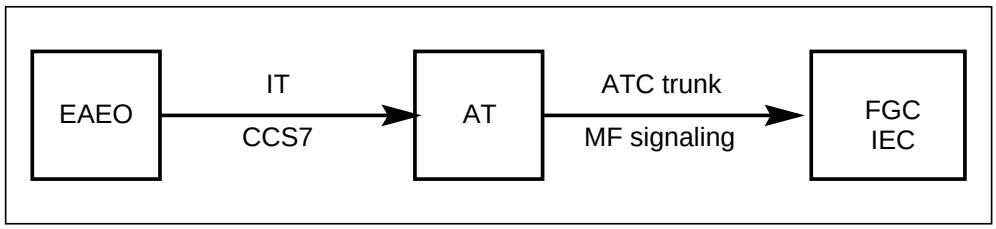
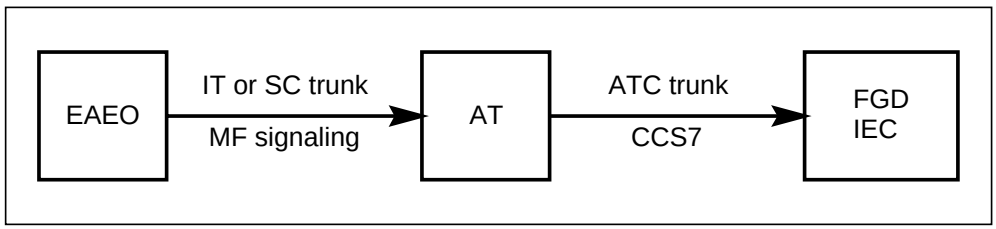


Figure 4-11 shows interworking for FGC inband signaling to CCS7. This configuration is required for call originations that terminate to an FGD IEC via the AT. The facilities between the EAEO and the AT are IT or SC trunk groups supporting traditional inband signaling. The facilities between the AT and the FGD carrier are ATC trunk groups supporting CCS7.

Figure 4-11
FGC inband signaling to CCS7



Note: As of BCS36, FGC calls sent over CCS7 IT trunks include the calling party number (CPN) parameter if, in the EAEO, field INCCPN in table OCCINFO is set to Y for the FGC carrier.

NTXE14AB - CCS7 ISUP Inter-LATA Connection AT (continued)

Package limitations and restrictions

The following limitations and restrictions apply to FGD interworking with CCS7:

- Equal Access calls arriving on MF facilities at the AT from the EAEO do not interwork with CCS7 IEC facilities. Test calls and operator signaling are not supported.
- PVN calls arriving on CCS7 facilities are not supported.
- The AT does not support the CELL trunk type using ISUP signaling protocol from a cellular mobile carrier (CMC).

The following limitations and restrictions apply to TOPS trunks interworking with CCS7 trunks:

- Operator functions, such as operator hold, coin control, and rering control, are not supported over ATC CCS7 trunks.
- Depending on the non-EAEO, the TOPS AT may only receive digits KP+50WXXX+ST or KP+0WXXX+ST for a 950-WXXX call origination. For these digit sequences, field FROMDIGS of subtable STDPRTCT.STDPRT must be set to 50WXXX and field TODIGS must be set to 0WXXX. In table OFRT, the N selector must be used to prefix the digits 9 or 95 on the called digits. If these digits are not prefixed, the CCS7 IAM message sent to the CCS7 IEC will not contain the complete 950-WXXX digit sequence in the called party address parameter.

The following limitations and restrictions apply to FGB interworking with CCS7:

- The AT provides the capability to complete FGB 950-WXXX calls incoming from a non-EAEO over an MF IT trunk group using traditional MF signaling and terminating to an IEC over a CCS7 ATC trunk group. All FGB 950-WXXX calls incoming from a non-EAEO over an MF SC trunk group to complete to an IEC over a CCS7 ATC trunk group are not supported.
- Alternate routing from a CCS7 ATC trunk group to an MF EAP ATC trunk group is not supported for FGB 950-WXXX calls incoming from a non-EAEO over an MF IT trunk group.
- International FGC CCS7-to-MF and MF-to-CCS7 interworking calls are not supported. There are currently no specifications for these calls in the TR-TSY-000394.

Feature interactions

For FGD and FGC calls incoming over MF IT/SC trunks to the AT and completing to CCS7 ATC trunks, the ANI digits may not be provided by the originating end office. For example, for FGD, only KP+ST is received for ANI; for FGC, no ANI digit stream is received. When ANI digits are not received and the FGD (CCS7) IEC is datafilled in the AT to receive ANI, the

originating line information (OLI) parameter and charge number parameter are coded as follows:

OLI: ANI failure/unavailable (i. e., #00000010)

Charge Number:

Odd/Even Indicator: even number of address digits (i. e., #0)

Nature of Address Indicator: ANI not available or not provided (for example, # 0000010)

Numbering Plan: not included

Address Information: not included

Note that only the first octet of the charge number parameter is coded and sent. The remaining octets, which normally include the NPA information, are not sent.

For FGB MF-to-CCS7 calls from a non-EAEO, the OLI and charge number parameters are also included in the IAM when the FGD (CCS7) IEC is datafilled to receive ANI.

Billing

This section describes billing for this feature package. For detailed information about billing, see *Bellcore Format Automatic Message Accounting Reference Guide*, 297-1001-830.

Billing for CCS7 FGD signaling

An AT that handles incoming calls from an IEC must produce a billing record when the office is the LATA entry point. To implement this feature, the nature of route in the trunk group number field (table 83) and the terminating access record call type (call code 119) are expanded to include structure codes 00625 and 00627.

The nature of route in the trunk group number field (table 83) and the IEC/INC ANI/CPN (calling party number) indicator (table 60) is expanded for the originating 141 billing record.

The calling party number or charge number received in the IAM is recorded in tables 13 (the originating NPA field) and 14 (the originating number field). An indication of interworking is recorded in the trunk group number

NTXE14AB - CCS7 ISUP Inter-LATA Connection AT (continued)

field (table 83). Originating billing records produced on E800-to-IEC calls are coded with call code 141.

The expanded coding applies to Bellcore AMA format records only.

Billing for TOPS trunks interworking with CCS7 trunks

If billing records are normally produced for the calls supported by this feature in a TOPS MF-to-ATC MF environment, they will also be produced in a TOPS MF-to-ATC CCS7 environment.

The carrier connect time will be the time that the IAM is sent from the TOPS AT. For Equal Access FGD and combined FGD originated calls, the carrier connect time will be the time the originating TOPS trunk is seized at the TOPS AT.

The IC/INC call event status field will be set to first wink received on reception of the ACM message. The IC/INC call event status field will be set to answer on reception of the ANM message. See *Bellcore Format Automatic Message Accounting Reference Guide*, 297-1001-830, for a description of the trunk group number field.

Origination billing record (traditional inband signaling)

Billing is not supported in the AT for calls incoming on IT trunks. Billing must be provided in the non-EAEO.

Origination billing record (EAP inband signaling)

Billing is not supported in the AT for calls incoming on IT or SC trunks using EAP inband signaling. Billing must be provided in the EAEO.

FGC origination billing record

Billing is not supported in the AT for calls incoming on IT trunks. Billing will continue to be supported on calls incoming on SC trunks. A 006 call code record will be produced for calls coming in the AT on SC MF trunks and going out on CCS7 ATC trunks.

Datafilling office parameters

This package does not affect office parameters.

Datafill sequence

The following tables require datafill to implement the feature package. The tables are listed in the order in which they are to be datafilled.

NTXE14AB - CCS7 ISUP Inter-LATA Connection AT (continued)

Datafill tables required for CCS7 ISUP Inter-LATA Connection AT

Table	Form	NTP	Purpose of table
OCCINFO	2355A-B	297-1001-451	Table OCCINFO (other common carrier information) defines the attributes for the carriers serving a DMS switch and screens calls for carrier compatibility.
OFRT	2431A-C	297-1001-451	Table OFRT (office route) contains route lists that are pointed to from tables other than the home NPA code subtable (HNPACONT.HNPACODE) or the foreign NPA code subtable (FNPACONT.FNPACODE).
TRKSGRP	2151A-F	297-1001-451	Table TRKSGRP (trunk subgroup) lists supplementary information for each subgroup assigned to one of the trunk groups listed in table TRKGRP.
STDPRTCT. STDPRT	2467A-B	297-1001-451	Each standard pretranslator (STDPRTCT.STDPRT) subtable sets up the translation for a specific call type. It is the first subtable to be indexed by the received leading digits if table LINEATTR or table TRKGRP specifies a standard pretranslator subtable name.
CKTDIGIT	2142A-B	297-1001-451	Table CKTDIGIT (circuit digit) allows the combination of the TNS and circuit code to be mapped into a particular 0ZZ, 1NX, or 1N'X circuit digit value. The AT extracts the CARRNAME field from table OCCINFO using the XXX digits received in the TNS.

Datafilling table OCCINFO

Table OCCINFO defines the attributes for carriers serving the AT and screens calls for carrier compatibility. For example, table OCCINFO allows international traffic to be sent only to carriers capable of handling such traffic.

The following procedure shows the datafill for table OCCINFO. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

NTXE14AB - CCS7 ISUP Inter-LATA Connection AT (continued)

Datafilling table OCCINFO Field	Subfield	Explanation and action
ACCESS		*Access arrangement* Enter one of the following access types accepted by the carrier to handle a call: ▪ TRANS or EAP for EAEO calls that complete directly to the IEC over trunks using CCS7 or for calls that complete over CCS7-supported circuits to the AT and from the AT to the IEC. ▪ FGC for CCS7-to-MF FGC IEC interworking calls. ▪ INTERIM for CCS7-to-MF FGB IEC interworking calls.
NOA950		*Nature of address indicator* Enter Y to show that the nature of address indicator in the calling party number parameter is set to 1111110. This binary values means that the call is a network specific, 950+ call from public station or hotel/motel line or non-EAEO. Enter N to show that the nature of address indicator in the calling party number parameter is set to the usual value. ***Note:*** The default value of N will cause no change in the existing operation of the switch.
INCCPN		*Include calling party number* Enter N to indicate that the calling party number parameter is to be removed from any IAM message sent to this carrier. Otherwise enter Y, the default value.

Datafill example for table OCCINFO

The following example shows sample datafill for table OCCINFO.

Datafill example for table OCCINFO

Example of a MAP display:

```
CARRNAME CARRNUM ACCESS INTER INTNTL INTRA ANI FANI ONISCRN AD1
OVERLAP INTERS INTRAS TERMREC OCCSEPNO OPSIG PICIND NOA950
INCCPN DTMFIND OPSERV CACBLOCK CTDOA CMCMON SCRNWATS CRMCRA
ATPINCL INTRAOPR
-------------------------------------------------------------
    C111      111   EAP     Y      Y     N   Y    N        N  Y
    Y        Y      Y    LONG       O  FGRPC      Y      N
     N       N      N        N     N      N        N      Y
      N        N
```

NTXE14AB - CCS7 ISUP Inter-LATA Connection AT (continued)

Datafilling table OFRT

Table OFRT contains route lists that are pointed to from tables other than the home NPA code subtable (HNPACONT.HNPACODE) or the foreign NPA code subtable (FNPACONT.FNPACODE).

The following procedure shows the datafill for table OFRT. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table OFRT

Field	Subfield	Explanation and action
RTESEL		*Route selector* Enter CND to specify a condition before routing. If the condition is met, then the instructions of this route element are executed. Otherwise, they are skipped and translation will look for instructions in the next route element.
RTELIST		*Route list* This field consists of the following subfields.
	CNDSEL	*Condition selector* Enter EA as the type of condition to be tested.
	EA_CND_RTE	*Condition subselector* Enter one of the following values: CAC for an Equal Access call where 10XXX is dialed INTNL for an Equal Access international call PIC for an Equal Access call

Datafill example for table OFRT

The following example shows sample datafill for table OFRT.

Datafill example for table OFRT

Example of a MAP display:

```
RTE                                  RTELIST
____________________________________________
  1                        CND EA CAC SK 3
```

Datafilling table TRKSGRP

The following procedure shows the datafill for table TRKSGRP. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

NTXE14AB - CCS7 ISUP Inter-LATA Connection AT (continued)

Datafilling table TRKSGRP Field	Subfield	Explanation and action
SGRPKEY		*Subgroup key* This field is composed of subfields CLLI and SGRP.
	CLLI	*Common language location identifier* Enter the code which is assigned in table CLLI to the trunk group to which the subgroup belongs.
	SGRP	*Subgroup number* Enter the number assigned to the trunk subgroup.
SGRPVAR		*Variable subgroup data* For standard signaling this field consists of the following subfields.
	SIGDATA	*Signaling data* Enter STD for standard signaling.
	DIR	*Direction* Enter the trunk group direction: IC, OG, or 2W. For trunks defined as four wire lines (GRPTYPE = AVLN in table TRKGRP), the direction must only be specified as incoming. Where trunk GRPTYPE = TPS101, only direction IC or OG can be used.
	IPULSTYP	*Incoming type of pulsing* Where trunk group is incoming or two way, enter the type of pulsing: DP dial pulse DT DIGITONE* MF multifrequency MFC multifrequency compelled NP no pulsing RP revertive pulsing Where trunk group is outgoing, leave blank.

-continued-

NTXE14AB - CCS7 ISUP Inter-LATA Connection AT (continued)

Datafilling table TRKSGRP (continued)

Field	Subfield	Explanation and action
	ISTARTSG	*Incoming start dial signal* Where trunk group is incoming or two way and incoming pulse type is DP, DT, or MF, enter the type of start dial signal required: immediate dial (IM), wink (WK), delay dial-on hook idle (DD), loop (LP), ground (GD), or DIALTONE. Where incoming pulse type is NP, enter IM. Where trunk is outgoing, leave blank.
	OVLP	*Overlap outpulsing* Where trunk group is incoming or two-way DP IT, local, or MDC, enter Y if trunk-to-trunk overlap outpulsing is required. Otherwise, enter N. Where trunk group is outgoing, leave blank.
	OPULSTYP	*Outgoing type of pulsing* Where trunk group is outgoing or two way, enter the type of pulsing: dial pulse (DP), multifrequency (MF), multifrequency compelled (MFC), Digitone (DT), or revertive pulsing (RP). Otherwise, enter NP, no pulsing.
	OSTARTSG	*Outgoing start dial signal* Where trunk group is outgoing or two way and outgoing pulse type is DP, MF, or DT, enter the type of start dial signal required: immediate dial (IM), wink (WK), delay dial-on hook idle (DD), delay dial-off hook idle (XD), loop (LP), or ground (GD). Where OPULSTYP is NP, enter IM. Where trunk group is incoming, leave blank.
	IDGTIME	*Interdigital timing* Where trunk group is outgoing or two-way and type of pulsing is dial pulse (DP), enter the interdigital timing interval in 10-ms intervals. Where the type of pulsing is MF, enter 7 (70 ms). If the type of pulsing is NP, enter 0 (zero). Where trunk group is incoming, leave blank.

-continued-

NTXE14AB - CCS7 ISUP Inter-LATA Connection AT (continued)

Datafilling table TRKSGRP (continued)

Field	Subfield	Explanation and action
	NUMSTOPS	*Number of stop/go signals* Where trunk group is outgoing or two-way IT with DP pulsing, enter the maximum allowable number of stop/go signals. Otherwise, enter 0 (zero). Where trunk group is incoming, leave blank.
	DIALMODE	*Dial mode* Where trunk group is incoming or two way, enter C if incoming digits originate from a subscriber (customer). Otherwise, enter M to indicate that incoming digits are machine produced. Where trunk group is outgoing, leave blank. Where customer dialed, no logs are produced for permanent signal, partial dial, and abandoned calls.

End

Datafill example for table TRKSGRP

The following example shows sample datafill for table TRKSGRP.

Datafill example for table TRKSGRP

Example of a MAP display:

```
SGRPKEY   CARDCODE                                                    SGRPVAR
-------------------------------------------------------------------------------
DAC 0     DS1SIG
          STD OG     MF       WK    7 0 NO      NO N N N   70    UNEQ
```

Datafilling subtable STDPRTCT.STDPRT

Subtable STDPRTCT.STDPRT is the first table to be indexed by the received leading digits when the originating line attribute (from table LINEATTR) or trunk (from table TRKGRP) specifies a pretranslator name.

The following procedure shows the datafill for subtable STDPRTCT.STDPRT to implement FGB-to-CCS7 interworking. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema,* 297-1001-451, for a description of the other fields.

NTXE14AB - CCS7 ISUP Inter-LATA Connection AT (continued)

Datafilling subtable STDPRTCT.STDPRT for PRERTSEL = FGB		
Field	**Subfield**	**Explanation and action**
FROMDIGS		*From digits* Enter the digit(s) to be translated. If the entry is a block of consecutive numbers, enter the first number in the block.
TODIGS		*To digits* If FROMDIGS is a block of consecutive numbers, enter the last number in the block. Otherwise, this field equals FROMDIGS.
PRETRTE		*Pretranslation route* For the FGB selector, this field is composed of subfields PRERTSEL, TYPCALL, NOPREDIG, CARRNAME, and RTEAREA, RTEPRSNT, EXTRTEID, TABID, KEY, MINIDIGSR, and MAXDIGSR.
	PRERTSEL	*Pretranslator route selector* Enter FGB to originate FGB calls.
	TYPCALL	*Type of call* Enter the type of call: direct dial (DD), no prefix (NP), or operator assisted (OA). ***Note:*** TYPCALL must be set to DD to enable call billing.
	NOPREDIG	*Number of prefix digits* Enter the number of prefix digits (0 to 7).
	CARRNAME	*Carrier name* Enter the name of the carrier, as defined in table OCCNAME, to which the call is offered.
	RTEAREA	*Route area* This field is composed of subfield RTEPRSNT.
	RTEPRSNT	*Route present* Enter Y to datafill subfields EXTRTEID, TABID, KEY, MINDIGSR and MASDIGSR. Otherwise, enter N.
	EXTRTEID	*External route ID* This field is composed of subfields TABID and KEY.
	TABID	*Table identifier* Enter OFRT. This table contains the routes for FGB calls.

-continued-

NTXE14AB - CCS7 ISUP Inter-LATA Connection AT (continued)

Datafilling subtable STDPRTCT.STDPRT for PRERTSEL = FGB (continued)		
Field	**Subfield**	**Explanation and action**
	KEY	*Index* Enter the office route index (0 to 1023) that the translation is routed to.
	MINDIGSR	*Minimum digits received* Enter the minimum number of digits (1 to 15) to be collected before routing the call.
	MAXDIGSR	*Maximum digits received* Enter the maximum number of digits (1 to 24) to be collected before routing the call.
End		

The following procedure shows the datafill for subtable STDPRTCT.STDPRT to implement FGB-to-CCS7 interworking. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling subtable STDPRTCT.STDPRT for PRERTSEL = EA		
Field	**Subfield**	**Explanation and action**
FROMDIGS		*From digits* Enter the digit(s) to be translated. If the entry is a block of consecutive numbers, enter the first number in the block.
TODIGS		*To digits* If FROMDIGS is a block of consecutive numbers, enter the last number in the block. Otherwise this field equals FROMDIGS.
PRETRTE		*Pretranslation route* For Equal Access calls, this field is composed of subfields PRERTSEL, TYPCALL, NOPREDIG, XLA_INFO, CARRNAME, and RTEAREA.
	PRERTSEL	*Pretranslator route selector* Enter EA, the pretranslator route selector for Equal Access calls.
-continued-		

NTXE14AB - CCS7 ISUP Inter-LATA Connection AT (continued)

Datafilling subtable STDPRTCT.STDPRT for PRERTSEL = EA (continued)

Field	Subfield	Explanation and action
	TYPCALL	*Type of call* Enter the type of call: DD, NP, or OA. ***Note:*** TYPCALL must be set to DD to enable call billing.
	NOPREDIG	*Number of prefix digits* Enter the number of prefix digits (0 to 7).
	XLA_INFO	*Equal Access translation information* This field is composed of subfield XLATYPE.
	XLATYPE	*Equal Access translation type* Enter one of the following values: N when no further digit translation or screening is required. A route must then be specified in field RTEAREA. P when further pretranslation is required. A pretranslator subtable name must be entered in field PRTNM. T when no further pretranslation is required. Translation then proceeds as determined by field TRANSYS.
	PRTNM	*Pretranslator subtable name* Enter the name of the pretranslator subtable that translation routes to for pretranslation of the remaining digits. This field is displayed when XLATYPE = P.
	TRANSYS	*Translation system* Enter one of the following values: NA when translation is to proceed to North American digit translations and screening. IN when translation is to proceed to international translations. NO when no further translation or screening is required. This field is displayed when XLATYPE = T.
	CARRNAME	*Carrier name* Enter the name of the carrier, as defined in table OCCNAME, to which the call is offered.
	RTEAREA	*Route area* This field is composed of subfield RTEPRSNT.

-continued-

NTXE14AB - CCS7 ISUP Inter-LATA Connection AT (continued)

Datafilling subtable STDPRTCT.STDPRT for PRERTSEL = EA (continued)

Field	Subfield	Explanation and action
	RTEPRSNT	*Route present* Enter Y to datafill fields EXTRTEID, TABID, KEY, MINDIGSR, MAXDIGSR, and OCS. Otherwise, enter N.
	EXTRTEID	*External route ID* This field is composed of subfields TABID and KEY.
	TABID	*Table identifier* Enter an office route table name (OFRT, OFR2, OFR3, or OFR4).
	KEY	*Index* Enter the office route index (0 to 1023) that the translation is routed to.
	MINDIGSR	*Minimum digits received* Enter the minimum number of digits (1 to 18) to be collected before routing the call.
	MAXDIGSR	*Maximum digits received* Enter the maximum number of digits (1 to 24) to be collected before routing the call.
OCS		*Overlap carrier selection* If this field is set to Y and the carrier has field OVERLAP set to Y in table OCCINFO, then the call uses OCS. Otherwise, OCS is not used.
		End

Datafill example for subtable STDPRTCT.STDPRT

The following example shows sample datafill for subtable STDPRTCT.STDPRT.

Datafill example for subtable STDPRTCT.STDPRT

Example of a MAP display:

```
      FROMDIGS        TODIGS
                                            PRETRTE
________________________________________________________

       950WXXX         950WXXX
                 FGB DD 0    OFRT      100     7    7
```

NTXE14AB - CCS7 ISUP Inter-LATA Connection AT (continued)

Datafilling table CKTDIGIT

Table CKTDIGIT is required whenever there is a CCS7 trunk between an EAEO and an AT. In the AT, this table is used to derive the 0ZZ or 1N/N'X digits based on the circuit code received in the TNS parameter. This table is indexed by the carrier name and the circuit code fields, so for each carrier serving the AT, there should be a tuple per 0ZZ or 1N/N'X code passed to this carrier.

The following procedure shows the datafill for table CKTDIGIT. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema,* 297-1001-451, for a description of the other fields.

Datafilling table CKTDIGIT

Field	Subfield	Explanation and action
CARRIER_ NAMES		*Carrier names* Enter the name of the carrier serving the AT.
CKT_CODE		*Circuit code* Enter the circuit code expected in the TNS parameter of the IAM received at the AT.
CKTDIGITS		*Circuit digits* Enter the first three digits in the Equal Access signaling digit sequences 0ZZ XXX, 1N/N'X XXX CCC, or 1N/N'X XXX 01R transmitted on MF trunks. These digits are used to single out one of the outgoing circuits in the carrier group. This field is always composed of 3 digits. The first digit should be 0 or 1. The remaining two digits can be any value from 00 to 99.

Datafill example for table CKTDIGIT

The following example shows sample datafill for table CKTDIGIT.

Datafill example for table CKTDIGIT

Example of a MAP display:

CARRNAME	CKTCODE	CKTDIGITS
CARR1	1	138

Translation verification tools

Translation verification tools are not applicable for this package.

NTXE14AB - CCS7 ISUP Inter-LATA Connection AT (end)

Service orders

Service orders are not applicable for this package.

NTX829AA - Intra-LATA PIC for LEAS

Package name

Intra-LATA PIC for LEAS

Package number

NTX829AA

Feature number

The NTX829AA feature package consists of the following feature:

NTX829AA feature number and name	
Feature number	**Feature name**
AL0290	Intra-LATA PIC with LEAS

BCS applicability

BCS29 and up

Feature package prerequisites

This package requires the following feature packages:

Feature package prerequisites	
Feature package	**Feature package name**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX044AA	Central Automatic Message Accounting
NTX072AA	International Direct Distance Dialing
NTX098AA	Bellcore CAMA Format
NTX192AA	4X Operation - Bell Format ANI
NTX290AA	Tandeming/Supervision & Treatment
NTX386AA or NTX386AB	Access Tandem Switch
NTX710AA	LATA Equal Access System
NTX801AA	Toll Features I

NTX829AA - Intra-LATA PIC for LEAS (continued)

Description

The NTX829AA - Intra-LATA PIC for LEAS feature package allows subscribers of non-EAEOs serviced by a LEAS AT to choose a carrier to provide intra-LATA service, like they now choose a PIC. If no primary intra-LATA carrier (LPIC) is chosen, the intra-LATA calls are handled in the usual way, by the local operating company. This situation occurs on all calls incoming on TOPS and SC trunks.

Theory of operation

This feature package provides intra-LATA carrier presubscription, screening, and routing capabilities in a LEAS AT.

Equal Access subscribers can select a carrier to provide their inter-LATA service. The carrier is referred to as the subscriber PIC. Intra-LATA calls have always been serviced by the local operating company. Some public utility commissions now allow subscribers to select a carrier for their intra-LATA calls as well.

This feature package is implemented through table DNLPIC, which contains the DNs of subscribers who want to select an LPIC. This table contains information similar to that found in table DNPIC, which holds subscriber information for PICs.

Once a call has been determined to be intra-LATA, the AT accesses table DNLPIC to determine if the calling DN is in the table. If a tuple is found, the carrier specified in field DNLPIC handles the call; otherwise, the operating company processes the call. Table DNPIC is also accessed to determine the attributes of the DN.

The following table outlines the possible call types and how they are handled. Note that the LEAS does not provide handling for local calls. Local calls are calls in which an entry for the called digits is found in table LCASCRCN. Technically, these are intra-LATA calls and they will be processed by the local exchange carrier.

	Who handles the call	
Type of call	**With LPIC**	**Without LPIC**
(1/0) + 7/10D intra-LATA	intra-LATA PIC	local operating company
00 -	inter-LATA PIC	inter-LATA PIC
10XXX + 00	carrier XXX	carrier XXX
10XXX _ inter-LATA	carrier XXX	carrier XXX
10XXX + intra-LATA	carrier XXX	carrier XXX

Zero minus dialed calls

Office parameter ZERO_MINUS_TO_CARRIER controls the routing of 0- calls. If this parameter is set to Y, table DNLPIC is accessed.

All 0- calls incoming on SC trunks are examined to determine if the calling DN has specified an LPIC. If a carrier is specified, the call is routed to that carrier; otherwise, the call goes to the local operating company. If the parameter is set to N, all 0- calls incoming on SC trunks route to the local operating company.

All 0- calls incoming on TOPS trunks are handled differently. These calls must route to a TOPS position in order for the called number to be determined. The call can then be classified as inter-LATA or intra-LATA. Table DNPIC or DNLPIC is searched to find a carrier that will process the call. If the call is determined to be intra-LATA and no carrier is found for the calling DN in table DNLPIC, the call is routed to the local operating company.

MAP commands affected

MAP (maintenance and administration position) command DNLPCDMO is created to simplify the initial datafill process for table DNLPIC. This command generates a bulk data modification order (DMO) file. This file can later be processed with tool DMOPRO, which reads formatted files of table input and automatically performs requested table modifications.

NTX829AA - Intra-LATA PIC for LEAS (continued)

Command DNLPCDMO is useful when a range of consecutive DNs with an identical LPIC are datafilled in table DNLPIC.

Command DNPICLIST is modified to provide presubscription reporting for Equal Access LPICs as well as for Equal Access PICs. The DNPICLIST and DNLPCDMO commands are described in chapter 2 of *Equal Access Maintenance Guide*, 297-2101-500.

Feature limitations and restrictions

This feature is only available for offices with the LATA Equal Access System package. It only affects the routing of the 1/0 + 7/10D intra-LATA call type when an LPIC is specified. The remaining call types are not modified.

Feature interactions

There are no interactions applicable for this feature package.

Activation/deactivation by the end user

Activation/deactivation is not applicable for this feature package.

Datafilling office parameters

The following table identifies the datafill for the office parameters.

Office parameters used by Intra-LATA PIC for LEAS

Table name **Parameter**	**Explanation and action**
OFCENG DNLPIC_MAX_NUM_DN_TUPLES	This parameter is used to provision the number of tuples that can be datafilled in table DNLPIC. The number specified by this parameter is multiplied by 10 000 to determine the maximum size of table DNLPIC.
OFCENG ZER0_MINUS_TO_CARRIER	Enter Y if 0- calls are routed to the subscriber LPIC. Enter N if they are routed to the local operating company.

Datafill sequence

The following table requires datafill to implement the feature package.

Datafill table required for Intra-LATA PIC for LEAS

Table	Form	NTP	Purpose of table
DNLPIC	2903	297-2271-451	Table DNLPIC (directory number primary intra-LATA carrier) contains the DNs of subscribers who have chosen the LPIC option.

Datafilling table DNLPIC

The following procedure shows the datafill for table DNLPIC. This procedure contains only those fields that apply to this package. See *TOPS Customer Data Schema*, 297-2271-451, for a description of the other fields.

Datafilling table DNLPIC

Field	Subfield	Explanation and action
DNKEY		*Directory number* Enter the DN of the subscriber wishing to have an LPIC.
DNLPIC		*Primary intra-LATA carrier* Enter the name of the carrier, as defined in table PICNAME, selected as the LPIC.

Datafill example for table DNLPIC

The following example shows sample datafill for table DNLPIC.

Datafill example for table DNLPIC

Example of a MAP display:

```
   DNKEY              DNLPIC
-------------------------------------------------------
519 841 11 11         EACAR1
```

Translation verification tools

TRAVER

The following example shows the output from TRAVER when it is used to examine the translation and routing of a call using an LPIC. For more information about TRAVER, see *Command Reference Manual*, 297-1001-509.

NTX829AA - Intra-LATA PIC for LEAS (continued)

If a tuple is found when translations looks in table DNLPIC, TRAVER displays the corresponding data. If a tuple is not found, TRAVER prints the following message:

TUPLE NOT FOUND.
DEFAULT: NO INTRALATA PIC SPECIFIED.

Note that TRAVER is only available for SC trunks; it is not supported on incoming TOPS trunks.

TRAVER output example for NTX829AA - Intra-LATA PIC for LEAS

Line	Output
	>TRAVER TR OTWAON52CG02 2281234 B N ST2P 08411111 ST
1	TABLE TRKGRP
2	OTWAON52CG02 SC 0 TLA NCRT NIL N 519 TCA3 TOPS DD ONHOOK
3	ONHOOK
4	30 5 5 IC LIDL 0 BELL SUPER CAMA REV Y
5	TABLE STDPRTCT
6	TCA3 (1) (0)
7	. SUBTABLE STDPRT
8	. 2 410 N DD 0 NA
9	TABLE HNPACONT
10	519 127 3 (55) (1) (91)
11	.SUBTABLE HNPACODE
12	. 228 228 HRTE 6
13	. SUBTABLE RTEREF
14	. 6 N D HULLPQ1077X0 2 N N
15	. T OFRT 11
16	. . TABLE OFRT
17	. . 11 N D OTWAON232390 3 N N
18	. . EXIT TABLE OFRT
19	. EXIT TABLE RTEREF
20	EXIT TABLE HNPACONT
21	TABLE BILLCODE
22	OTWAON52CG02 841 OTWA TCA3 519841 CAM0
23	TABLE LCASCRCN
24	519 OTWA (11) OPTL N
25	. SUBTABLE LCASCR
26	. TUPLE NOT FOUND. DEFAULT IS NON-LOCAL
27	TABLE PFXTREAT
28	TUPLE NOT FOUND. DEFAULT IS TO LEAVE XLA RESULT UNCHANGED
29	TABLE CLSVSCRC
30	519 TCA3 DD 2 N NONE (1)

-continued-

NTX829AA - Intra-LATA PIC for LEAS (continued)

TRAVER output example for NTX829AA - Intra-LATA PIC for LEAS (continued)

Line	Output
31	. SUBTABLE CLSVSCR
32	KEY NOT FOUND
33	DEFAULT IS TO LEAVE XLA RESULT UNCHANGED
34	DETERMINE IF THE ROUTE SHOULD BE REPLACED WITH A NEW EQUAL
35	ACCESS ROUTE
36	TABLE TRKLATA
37	OTWAON52CG02 5198411111 LATA1 Y T DACD
38	TABLE EASAC
39	TUPLE NOT FOUND
40	TABLE LATAXLA
41	LATA1 519 INTRA INTER STD
42	TABLE DNLPIC
43	519 841 11 11 EACAR1
44	TABLE DNPIC
45	519 841 11 11 EACAR2 Y N
46	TABLE OCCINFO
47	EACAR1 222 TRANS Y Y Y Y Y N Y Y LONG 0 FGRPC N N N N N N N N
48	TABLE STDPRTCT
49	TCA3 (1) (0)
50	. SUBTABLE STDPRT
51	. 10222 10222 Equal Access DD 5 P CAR1 CAR Y OFRT 889 6 20 N
52	. . TABLE OFRT
53	. . 889 CND Equal Access INTNL SK 2
54	. . S D OGEACAR1
55	. . CND ALWAYS SK 1
56	. . N D OGEACAR1 15 D121 N
57	. . EXIT TABLE OFRT
58	. TABLE STDPRTCT
59	. CAR1 (1) (0)
60	. .SUBTABLE STDPRT
61	. . 2 9 Equal Access DD 0 T NA EACAR1 N

-continued-

NTX829AA - Intra-LATA PIC for LEAS (end)

TRAVER output example for NTX829AA - Intra-LATA PIC for LEAS (continued)

Line	Output
62	Using Equal Access (EA) route OFRT 889 from Pretranslation
63	TABLE OFRT
64	889 CND Equal Access INTNL SK 2
65	S D OGEACAR1
66	CND ALWAYS SK 1
67	N D OGEACAR1 15 D121 N
68	EXIT TABLE OFRT
69	+++ TRAVER: SUCCESSFUL CALL TRACE +++
70	
71	DIGIT TRANSLATION ROUTES
72	
73	1 OGEACAR1 2281234 ST
74	BILL 5198411111
75	
76	TREATMENT ROUTES. TREATMENT IS: GNCT
77	1 *OFLO
78	
79	+++ TRAVER: SUCCESSFUL CALL TRACE +++

End

Service orders

Service orders are not applicable for this package.

NTX211AB - FGB AMA Tandem (ATT Format)

Package name

FGB AMA Tandem (ATT Format)

Package number

NTX211AB

Feature numbers

The NTX211AB feature package consists of the following features:

NTX211AB feature numbers and names

Feature number	Feature name
BC1680	FGB -AMA Enhancement
BR0496	Access Charge Recording - Tandem
NC0202	Carrier Access Code Expansion

BCS applicability

BCS33 and up

Feature package prerequisites

This package requires the following feature packages:

Feature package prerequisites

Feature package	Feature package name
NTX000AA	Bilge
NTX001AA	Common Basic
NTX044AA	Central Automatic Message Accounting
NTX098AA	Bellcore CAMA Format
NTX192AA	4X Operation - Bell Format ANI
NTX801AA	Toll Features I

Description

The NTX211AB - FGB AMA Tandem (ATT Format) feature package allows billing records to be generated for calls to FGB carriers and ensures that the carrier identification information in these records is correct.

This feature package also allows two-way OC trunk groups to access FGB carriers and to generate billing records for FGB calls. Finally, this feature

NTX211AB - FGB AMA Tandem (ATT Format) (continued)

package separates FGB CICs from FGD CICs and expands the FGB CIC from three to four digits.

Theory of operation

This feature package, in combination with the proper trunking and translations, is used to set up an FGB access arrangement. Networks that support this arrangement allow end offices and ATs to provide subscribers with access to FGB carriers. All offices participating in the network accept FGB dialing and FGC signaling. All subscribers participating in the network must have Dual Tone multifrequency phones so the audio tones representing the digits dialed can be passed through the network to the carrier.

This section describes the features specific to the NTX211AB - FGB AMA Tandem (ATT Format) feature package. For more information about FGB, see *Equal Access Product Guide*, 297-2101-011.

Generating billing for FGB calls

Table AMAOPTS controls the activation and scheduling of the recording options. This table includes the ENFIA_B_C option to allow FGB calls to be recorded so appropriate billing charges can be calculated. ENFIA_B_C is always set to on.

> ***Note:*** If an office uses the NT AMA format and the DMS software does not include table AMAOPTS, the ENFIA_B_C option is automatically turned on.

There is one tuple in table AMAOPTS for each recording option. Initially, default values are used for all of the options. The default values on the office type are defined (NT or Bellcore) in office parameter AMA_FORMAT. Both NT and Bellcore AMA formats are supported for FGB calls.

Ensuring the accuracy of billing records

Table TRKNAME specifies the name of each trunk group in the DMS switch and maps each trunk group name to a number in the centralized automatic reporting on trunks database.

Because each trunk in the switch must be identified uniquely, this feature package also modifies the table control for table TRKNAME so duplicate CLLI entries cannot be entered. This modification ensures that the correct carrier is billed when the system software compares the IEC/INC prefix field in the FGB terminating record (call code 135) with the CLLI names in table TRKNAME.

NTX211AB - FGB AMA Tandem (ATT Format) (continued)

FGB on two-way trunk groups

Table TRKGRP for the OC trunk group type defines the characteristics of the outgoing and two-way trunk groups from local to CAMA trunk groups. This feature package adds subfields FGBTRAFC and FGBANI to this table. With this modification, two-way OC trunks can be used to access FGB carriers and generate the AMA records required for FGB calls. These trunks also provide ANI information in the Bellcore CAMA signaling format required by the carrier.

This feature package also modifies table TRKGRP by adding subfield CARRNM, which identifies the carrier using a two-way OC trunk group. This field sets the IC/INC prefix field of the FGB terminating record (call code 135).

Adding subfield CARRNM to table TRKGRP (OC) also ensures billing accuracy. When generating billing records, the DMS switch can verify that the carrier name in table TRKGRP (OC) is valid by comparing subfield CARRNM in this table with field OCCNAME in table OCCNAME, which lists the names of all carriers serving the DMS switch.

FGB CIC expansion

This feature package expands the CIC for FGB carriers to four digits to allow a uniform 950-XXXX FGB CAC. This expanded code is optional; carriers may still use their old three-digit CIC.

To implement the expansion of FGB CICs, table FGBCIC is created. This table contains carrier names and their four-digit FGB CICs. Datafilling this table allows 950-XXXX dialing to that carrier and produces a four-digit CIC in the billing record.

This CIC expansion is compatible with the current three-digit CIC scheme for FGB. Only FGB carriers with four-digit CICs must be datafilled in table FGBCIC.

The IEC/INC prefix in the billing record is generated as follows:

- For all originating FGB calls, if the carrier name is not datafilled in table FGBCIC, the prefix is generated as usual. If the carrier is datafilled in table FGBCIC, the FGBCIC four-digit code is used.
- For all terminating FGB calls, if the carrier name is not in table FGBCIC, the prefix is generated as usual and the carrier name is retrieved from the incoming trunk group data. If the carrier is datafilled in table FGBCIC, the FGBCIC four-digit code is used.

If an IEC or INC is capable of both FGB and FGD signaling and uses a four-digit access code for FGB, table OCCINFO will contain the FGD CIC and table FGBCIC will be datafilled with the four-digit FGB CIC.

NTX211AB - FGB AMA Tandem (ATT Format) (continued)

Package limitations and restrictions

The following limitations and restrictions apply to this feature package:

- This feature package affects Bellcore format AMA, but does not affect NT format AMA.
- TOPS does not currently support four-digit CICs. TOPS FGB carrier and translation datafill is not changed, and calls still use the three-digit CICs.
- Although FGB CICs are expanded to four digits, the size of any carrier table is not changed. The maximum size of tables OCCNAME, OCCINFO, and FGBCIC is still 1000 tuples.

Feature interactions

There are no feature interactions related to this feature package.

Activation/deactivation by the end user

Activation/deactivation by the end user is not applicable for this package.

Billing

The AMA records are generated by the carrier for originating calls and by the local or toll office for terminating calls. The ENFIA_B_C option allows FGB calls to be recorded and billing records generated.

The two types of AMA records generated for FGB calls are FGB originating (call code 134) and FGB terminating (call code 135). Each record provides carrier identification and connect time information. These call codes are modified by this feature package. The IC/INC prefix is changed to allow four-digit CICs for carriers datafilled in table FGBCIC.

The format of the originating record is similar to that of the terminating record; the only difference is the call code. The following is an example of an FGB terminating record.

NTX211AB - FGB AMA Tandem (ATT Format) (continued)

Example of an FGB terminating record:

```
HEX ID  :AA STRUCT CODE:00653C CALL TYPE:135C
  SENSOR TYPE:036C
SENSOR ID:0000000C REC OFC TYPE:036C REC OFC ID:
  $col.0000000C DATE:60104C
TIMING IND:00000C STUDY IND:0200000C ANSWER:0C
  SERV OBSERVED:0C
OPER ACTION:0C SERV FEAT:002C OVERSEAS IND:0C
  TERM NPA:00613C
TERM NO:6211234C TIME:1045009C ELAPSED TIME:
   000000028C
IC/INC PREFIX:07772C CC DATE:60104C CC TIME:
  1044546C
ELASPED CC:000000092C IC/INC EVENT:010C TRK GRP:
  00000C ROUTING:0C
```

This feature package modifies the overseas indicator field of the FGB originating and terminating records. This modification allows the operating company to determine whether the NPA code in the dialing string for a non-overseas call was dialed by the subscriber or derived internally and then added by the system software.

Datafilling office parameters

This package does not affect office parameters.

Datafill sequence

The following tables require datafill to implement the feature package. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for FGB AMA Tandem (ATT Format)

Table	Form	NTP	Purpose of table
OCCNAME	2356A-B	297-1001-451	Table OCCNAME (other common carrier name) lists the connected carriers and establishes the spelling standard for other tables requiring the carrier name.
TRKGRP (OC)	2156X	297-1001-451	Table TRKGRP (trunk group) for OC trunks contains some of the customer data associated with the trunk group handling local ANI to toll CAMA.

- continued -

NTX211AB - FGB AMA Tandem (ATT Format) (continued)

Datafill tables required for FGB AMA Tandem (ATT Format) (continued)

Table	Form	NTP	Purpose of table
OFRT	2431A-C	297-1001-451	Table OFRT (office route) contains route lists that are pointed to from tables other than the home NPA code subtable (HNPACONT.HNPACODE) or the foreign NPA code subtable (FNPACONT.FNPACODE).
OCCINFO	2355A-B	297-1001-451	Table OCCINFO (other common carrier information) defines the attributes for the carriers serving a DMS switch and screens calls for carrier compatibility.
LINEATTR	2208A-B	297-2101-451	Table LINEATTR (line attribute) defines the line attribute indexes that are applicable to an office. Line attributes are actually assigned to regular lines in table LENLINES, and to MDC lines and attendant consoles in table IBNXLA.
STDPRTCT	2465	297-1001-451	Table STDPRTCT (standard pretranslator control) lists the name of each standard pretranslator subtable defined by the operating company.
STDPRTCT. STDPRT	2467A-B	297-1001-451	Subtable STDPRTCT.STDPRT (standard pretranslator) sets up the translations for a specific call type. This is the first subtable indexed by the received leading digits if table LINEATTR or TRKGRP specifies a standard pretranslator subtable name.
AMAOPTS	2333A-B	297-1001-451	Table AMAOPTS (AMA options) controls the activation and scheduling of the recording options for local, toll, and high-revenue calls.

- continued -

Datafill tables required for FGB AMA Tandem (ATT Format) (continued)

Table	Form	NTP	Purpose of table
BCCODES	2334	297-1001-451	Table BCCODES (Bellcore codes) allows the operating company to specify which unanswered calls will create billing records. If an option is active in table AMAOPTS, table BCCODES is searched for the corresponding call code. If the code is found in table BCCODES, a billing record for that unanswered call is created.
FGBCIC	not applicable	not determined	Table FGBCIC (FGB CIC) contains carrier names and their four-digit FGB CICs. Datafilling this table with a carrier's name and its corresponding four-digit CIC allows 950-XXXX dialing to that carrier and produces a four-digit identification code in the billing record.

End

Datafilling table OCCNAME

The following procedure shows the datafill for table OCCNAME. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table OCCNAME

Field	Subfield	Explanation and action
OCCNAME		*Other common carrier name* Enter the carrier name or a 1- to 16-character alphanumeric abbreviation of the carrier name.

Datafill example for table OCCNAME

The following example shows sample datafill for table OCCNAME.

Datafill example for table OCCNAME

Example of a MAP display:

```
OCCNAME
-------

C111
```

NTX211AB - FGB AMA Tandem (ATT Format) (continued)

Datafilling table TRKGRP (OC)

Table TRKGRP (OC) contains some of the customer-defined data associated with the trunk group handling local ANI to toll CAMA. It has two additional subfields: FGBTRAFC and FGBANI. Subfield FGBTRAFC indicates whether a two-way OC trunk group connects to an IEC switch and carries FGB calls. Subfield FGBANI defines the format of the ANI spills for FGB calls sent to the carrier.

Table TRKGRP (OC) also includes subfield CARRNM, which identifies the carrier using a two-way OC trunk group. This field also sets the IC/INC prefix field of the FGB terminating record (call code 135).

The following procedure shows the datafill for table TRKGRP (OC). This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table TRKGRP (OC)

Field	Subfield	Explanation and action
	ANITYPE	*ANI request type* Enter the type of ANI request signal: wink (WK) or reversal (REV). The correct ANI fail and answer supervision on the second leg of a remote call forwarding call is a wink (WK) ANI request. Otherwise, the ANI request type is a reversal (REV).
	BILLSPILL	*Spill billing* In offices with the Bellcore LAMA format feature and the ANI with the AMA feature, enter Y if DD calls terminating to the trunk group are to be recorded in a Bellcore AMA format billing record. Otherwise, enter N.
	EA	*Equal access* Enter Y if double ANI digits are to be sent out. Otherwise, enter N.
	FGBTRAFC	*Feature group B traffic* Enter Y to indicate that a trunk group connects to an IEC switch and that it carries FGB calls; otherwise, enter N. If Y is entered, subfields FGBANI and CARRNM must also be datafilled.

-continued-

Datafilling table TRKGRP (OC) (continued)

Field	Subfield	Explanation and action
	FGBANI	*Feature Group B ANI* If field FGBTRAFC = Y, enter Y to indicate that a normal ANI should be provided. Enter N to indicate that KP+ST is required.
	CARRNM	*Carrier name* If FGBTRAFC = Y, enter the name of carrier, as defined in table OCCINFO, using a two-way OC trunk group. NILC is the default entry.

End

Datafill example for table TRKGRP (OC)

The following example shows sample datafill for table TRKGRP (OC).

Datafill example for table TRKGRP (OC)

Example of a MAP display:

```
   GRPKEY
                                                          GRPINFO
-------------------------------------------------------------------
 C333FGB2
   OC 0 ELO NCRT CA MIDL WK N N 2W NPRT NSCR 619 NLCL CV N N Y Y
   NILC $
```

Datafilling table OFRT

The following procedure shows the datafill for table OFRT. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema,* 297-1001-451, for a description of the other fields.

NTX211AB - FGB AMA Tandem (ATT Format) (continued)

Datafilling table OFRT Field	Subfield	Explanation and action
RTESEL		*Route selector* Enter CND to specify a condition before routing. If the condition is met then the instructions of this route element are executed. Otherwise, they are skipped and translation will look for instructions in the next route element. Conditions relating to Equal Access follow.
CONDITION		Condition Enter EA to allow the operating company to route 10XXX calls differently from non-10XXX calls.
	CNDSEL	*Condition selector* Enter EA as the type of condition to be tested.
	EA_CND_RTE	*Condition sub-selector* Enter one of the following values: CAC, INTNL, or PIC.

Datafill example for table OFRT

The following example shows sample datafill for table OFRT.

Datafill example for table OFRT

Example of a MAP display:

RTE	RTELIST
1	CND EA CAC SK 3

Datafilling table OCCINFO

Table OCCINFO defines the attributes for carriers serving the AT and screens calls for carrier compatibility. For example, table OCCINFO allows international traffic to be sent only to carriers capable of handling such traffic.

The following procedure shows the datafill for table OCCINFO. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

NTX211AB - FGB AMA Tandem (ATT Format) (continued)

Datafilling table OCCINFO Field	Subfield	Explanation and action
CARRNAME		*Carrier name* Enter the carrier name or a 1- to 16-character alphanumeric abbreviation of the carrier name as defined in table OCCNAME.
CARRNUM		*Carrier number* Enter the CIC (0000 to 9999). ***Note 1:*** Only 256 entries by office are accepted. ***Note 2:*** Although N is included in the range of values, it is not a valid entry for this field.
ACCESS		*Access arrangement* Enter one of the following access types accepted by the carrier to handle a call: NONE no access INTERIM interim dialing over FGD signaling EAP EAP dialing over FGD signaling OTC FGC dialing over FGC signaling (local billing) TRANS both interim and EAP dialing over FGD signaling FGC FGC dialing over FGC signaling (FGD billing) ***Note 1:*** In order for the EACARR OM group to record OM data, this field must be set to EAP, INTERIM, TRANS, or FGC. If the ACCESS field is set to NONE, none of the EACARR registers will be pegged. ***Note 2:*** This field must be set to NONE for the NILC tuple.
INTER		*Inter-LATA* Enter Y if the carrier can handle inter-LATA traffic. Otherwise, enter N.
INTNTL		*International* Enter Y if the carrier can handle international traffic. Otherwise, enter N.
INTRA		*Intra-LATA* Enter Y if the carrier can handle intra-LATA traffic. Otherwise, enter N.

-continued-

NTX211AB - FGB AMA Tandem (ATT Format) (continued)

Datafilling table OCCINFO (continued)

Field	Subfield	Explanation and action
ANI		*Automatic number identification* Enter Y if the carrier wants ANI digits sent with the called number. Otherwise, enter N.
FANI		*Flexible ANI* Enter Y if the carrier can receive flexible ANI information digits instead of standard ANI information digits. Otherwise, enter N.
ONISCRN		*Operator number identification screening* Enter Y if ONI traffic requires screening by an operator or CAMA position before outpulsing to the carrier. Otherwise, enter N.
AD1		*Abbreviated dialing number one* Enter Y if the carrier can be accessed using abbreviated dialing. Otherwise, enter N.
OVERLAP		*Overlap* Enter Y if the carrier wants to receive digits from the AT or the EAEO using overlap outpulsing. Otherwise, enter N.
INTERS		*Inter-state* Enter Y if the carrier can handle traffic between states. Otherwise, enter N.
INTRAS		*Intra-state* Enter Y if the carrier can handle traffic within the same state. Otherwise, enter N.
TERMREC		*Terminating access record* Enter the length (LONG or SHORT) of the terminating access record produced for the carrier. Default value is SHORT. ***Note:*** Access records are produced only when the OCCTERM option in table AMAOPTS is set to ON.
OCCSEPNO		*Other common carrier separation number* Enter the separation number (0 to 127) for the carrier in the Traffic Separations Measurement System.

-continued-

NTX211AB - FGB AMA Tandem (ATT Format) (continued)

Datafilling table OCCINFO (continued)

Field	Subfield	Explanation and action
OPSIG		*Operator signaling* Enter the type of operator signaling provided by the carrier. Enter FGRPC for FGD carriers that require FGC operator signaling. Enter NONE for all other FGD carriers. This entry is ignored for FGC carriers.
PICIND		*Presubscription indication* Enter Y if the carrier has chosen to receive the presubscription indicator; otherwise, enter N. This field must be datafilled for every entry in table OCCINFO.
DTMFIND		*Rotary dial/DTMF indicator* Enter Y if the carrier has chosen to receive the rotary dial/DTMF indicator on operator service calls that are routed directly to the carrier. Otherwise, enter N. ***Note:*** Field DTMFIND must be datafilled for every entry in table OCCINFO. Field DTMFIND is active only if feature package NTX888 is present.
OPSERV		*Operator services* Enter Y if the carrier accepts EAOSS and does not want the operating company to process 10XXX+0 and 00 calls to the carrier. Otherwise, enter N. ***Note:*** Field OPSERV must be datafilled for every entry in table OCCINFO. Field OPSERV is active only if feature package NTX888 is present.
CACBLOCK		*Carrier access code blocking* Enter Y if the carrier wants to block all calls dialed with a CAC. Enter N for all other carriers. ***Note:*** Field CACBLOCK must be datafilled for every entry in table OCCINFO. Field CACBLOCK is active only if feature package NTX989 is present.
CTDOA		*Carrier toll denied operator assisted* Enter Y to block OA calls to this carrier when the subscriber has the CTD line option applied for this carrier. Otherwise, enter N, the default value.

-continued-

NTX211AB - FGB AMA Tandem (ATT Format) (continued)

Datafilling table OCCINFO (continued)

Field	Subfield	Explanation and action
SCRNWATS		*Enhanced WATS screening* Enter Y if the carrier wants band screening performed on digits dialed from an enhanced WATS line. Otherwise, enter N. ***Note:*** Field SCRNWATS is only applicable when software package NTXA16 is present.
ATPINCL		*Access transport parameter included* Enter Y to indicate whether an access transport parameter should be included in the IAM going to the IEC. Otherwise, enter N.
INTRAOPR		*Intra-LATA operator* Enter Y to indicate if a carrier is capable of handling intra-LATA operator calls. Otherwise, enter N.
End		

Datafill example for table OCCINFO

The following example shows sample datafill for table OCCINFO.

Datafill example for table OCCINFO

Example of a MAP display:

```
CARRNAME CARRNUM ACCESS INTER INTNTL INTRA ANI FANI ONISCRN AD1
OVERLAP INTERS INTRAS TERMREC IECSEPNO OPSIG PICIND NOA950
INCCPN DTMFIND OPSERV CACBLOCK CTDOA CMCMON SCRNWATS CRMCRA
ATPINCL INTRAOPR
-------------------------------------------------------------
    C111      111   EAP     Y      Y     N   Y    N        N  Y
    Y        Y      Y    LONG       O  FGRPC      Y      N
     N       N      N        N     N      N        N      Y
      N        N
```

NTX211AB - FGB AMA Tandem (ATT Format) (continued)

Datafilling table LINEATTR

The following procedure shows the datafill for table LINEATTR. This procedure contains only those fields that apply to this package. See *Local Customer Data Schema*, 297-2101-451, for a description of the other fields.

Datafilling table LINEATTR

Field	Subfield	Explanation and action
LATANM		*LATA name* Enter the name of the LATA associated with this line attribute.

Datafill example for table LINEATTR

The following example shows sample datafill for table LINEATTR.

Datafill example for table LINEATTR

Example of a MAP display:

```
LAIDX LCC
      CHGCLSS COST SCRNCL LTG STS PRTNM LCANAME LCABILL
                                        ZEROMPOS HOT TRAFSNO
MRSA SFC  LATANM          MDI          IXNAME DGCLNAME FANIDIGS
          RESINF
-------------------------------------------------------------------
0  1FR
     NONE  NT   NSCR    0 619    POT1     LPOT      N
                                                   RTE1  N   0
NIL NILSFC NILLATA            0          NIL        NIL     00
                N
```

Datafilling table STDPRTCT

Table STDPRTCT lists the name of each standard pretranslator subtable defined by the operating company. The following procedure shows the datafill for table STDPRTCT. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table STDPRTCT

Field	Subfield	Explanation and action
EXTPRTNM		*External standard pretranslator subtable name* Enter the name defined by the operating company to represent the standard pretranslator subtable. Note that standard pretranslator name C7PT is automatically used by ISUP trunks on test calls in offices with ISUP capability.

NTX211AB - FGB AMA Tandem (ATT Format) (continued)

Datafill example for table STDPRTCT

The following example shows sample datafill for table STDPRTCT.

Datafill example for table STDPRTCT

Example of a MAP display:

```
EXTPRTNM   STDPRT   AMAPRT
-------------------------------
     POT1 (    1) (    1)
```

Datafilling subtable STDPRTCT.STDPRT

Subtable STDPRTCT.STDPRT is the first subtable to be indexed by the received leading digits when the originating line attribute (from table LINEATTR) or trunk (from table TRKGRP) specifies a pretranslator name.

The following procedure shows the datafill for subtable STDPRTCT.STDPRT. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling subtable STDPRTCT.STDPRT

Field	Subfield	Explanation and action
FROMDIGS		*From digits* Enter the digit(s) to be translated. If the entry is a block of consecutive numbers, enter the first number in the block.
TODIGS		*To digits* If FROMDIGS is a block of consecutive numbers, enter the last number in the block. Otherwise, this field equals FROMDIGS.
PRETRTE		*Pretranslation route* This field consists of the following subfields, which must be filled for the FGB selector.
	PRERTSEL	*Pretranslation route selector* Enter FGB to originate FGB calls (950-WXXX dialing).
	TYPCALL	*Type of call* Enter the type of call: DD, NP, or OA. ***Note:*** TYPCALL must be set to DD to enable call billing.

-continued-

Datafilling subtable STDPRTCT.STDPRT (continued)		
Field	**Subfield**	**Explanation and action**
	NOPREDIG	*Number of prefix digits* Enter the number of digits (0 to 7) to be interpreted as prefix digits. Where switching unit is arranged for circle digit (CD) operation, the CD must be included in the number of prefix digits to be removed from the digit translation.
	CARRNAME	*Carrier name* Enter the carrier name as defined in table OCCNAME.
	RTEAREA	*Route area* This subfield consists of the following subfields.
	RTEPRSNT	*Route present* Enter Y if a call is to be sent to a route from pretranslation. If so, all remaining fields are datafilled. Enter N if a national translation (table HPNACONT) route is to follow. If so, the remaining fields are not datafilled.
	EXTRTEID	*External route identifier* This subfield consists of subfields TABID and KEY.
	TABID	*Table name* Enter OFRT. Table OFRT contains the route for the FGB call.
	KEY	*Index* Enter the index (0 to 1023) within table OFRT that the call is to use for routing.
	MINIDIGSR	*Minimum digits received* If field RTEPRSNT = N, leave this field blank. Otherwise, enter the minimum number of digits (1 to 15) to be collected before routing the call.
	MAXDIGSR	*Maximum digits received* If field RTEPRSNT = N, leave this field blank. Otherwise, enter the maximum number of digits (1 to 24) to be collected before routing the call.
End		

Datafill example for subtable STDPRTCT.STDPRT

The following example shows sample datafill for subtable STDPRTCT.STDPRT.

NTX211AB - FGB AMA Tandem (ATT Format) (continued)

Datafill example for subtable STDPRTCT.STDPRT

Example of a MAP display:

```
      FROMDIGS        TODIGS
                                          PRETRTE
-----------------------------------------------------
           00             00
                 T OA 1     OFRT  828  2  2    NONE
```

Datafilling table AMAOPTS

Table AMAOPTS controls the activation and scheduling of the recording options for local, toll, and high-revenue calls. It contains one tuple for every option. A schedule, associated with every option, defines whether an option is active, active only at certain times, or not active.

Option ENFIA_B_C is related to Equal Access billing records. The following procedure shows the datafill for this option in table AMAOPTS. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table AMAOPTS

Field	Subfield	Explanation and action
OPTION		*Option* Enter an alphanumeric option code. The options relevant to Equal Access are described in the following subfields.
	ENFIA_B_C	This option controls the recording of ENFIA_B and ENFIA_C calls (for example, 950-10XX), thereby allowing calls on all FGB trunk groups to be recorded. ***Note:*** If an office uses the NT AMA format and the DMS software does not include table AMAOPTS, the ENFIA_B_C option is automatically turned on.
SCHEDULE		*Schedule* This field consists of the following subfields: AMASEL, ONDATE, OFFDATE, SCHED, ONTIME, and OFFTIME.

-continued-

NTX211AB - FGB AMA Tandem (ATT Format) (continued)

Datafilling table AMAOPTS (continued)

Field	Subfield	Explanation and action
	AMASEL	*AMA selector* Enter one of the following values: ON — Activate the option immediately. OFF — Deactivate the option immediately. DEFAULT — Use the default schedule for the option. PERIODIC — Activate the option at the specified date and time, and perform the periodic activity every so many hours or minutes. Complete subfields ONDATE and ONTIME to specify the date and time for activation, and complete field SCHED for the time intervals to perform the activity. TIMED — Activate the option between the specified dates and times. For the ENFIA_B_C option, the valid AMA selectors are ON, OFF, TIMED, and DEFAULT. Default is ON.
	ONDATE	*Activation on date* If AMASEL = PERIODIC or TIMED, enter the year, the month, and the day on which the activation of the option is set to ON. The format is YYMMDD. Otherwise, there is no prompt for this field.
	SCHED	*Periodic schedule* If AMASEL = PERIODIC, complete the two subfields TU and TV. Otherwise, there is no prompt for this subfield.
	TV	*Time value* Enter a value from 0 to 255.
	TU	*Time unit* Enter AEONS, HRS, HUNDREDMS, MINS, SECS, or TENMS.
	ONTIME	*Activation on time* If AMASEL = PERIODIC or TIMED, enter the hour and minute the option will be activated. The format is HHMM. Otherwise, there is no prompt for this field.

-continued-

NTX211AB - FGB AMA Tandem (ATT Format) (continued)

Datafilling table AMAOPTS (continued)

Field	Subfield	Explanation and action
	OFFDATE	*Activation off date* If AMASEL = TIMED, enter the year, the month, and the day on which the activation of the option is set to OFF. The format is YYMMDD. Otherwise, there is no prompt for this field.
	OFFTIME	*Activation off time* If AMASEL = TIMED, enter the hour and minute the option will be deactivated. The format is HHMM. Otherwise, there is no prompt for this field.

End

Datafill example for table AMAOPTS

The following example shows sample datafill for table AMAOPTS.

Datafill example for table AMAOPTS

Example of a MAP display:

```
      OPTION                   SCHEDULE
-------------------------------------------------
       ENFIA_B_C                    ON
```

Datafilling table BCCODES

The following procedure shows the datafill for table BCCODES. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

NTX211AB - FGB AMA Tandem (ATT Format) (continued)

Datafilling table BCCODES

Field	Subfield	Explanation and action
CALLTYPE		*Bellcore call type* Enter one of the following Bellcore call types: LOCAL local calls TOLL toll calls HIGHREV high-revenue calls TOPS TOPS calls ***Note:*** if the HIGHREV option in table AMAOPTS is set to ON, then all HIGHREV calls with a call code defined in table BCCODES are recorded. Unanswered calls are not recorded when the HIGHREV option in table AMAOPTS is set to ON.
CODES		*Bellcore call codes* Enter any combination of the Bellcore call codes. Each call code must be separated by a blank column. For a complete listing of Bellcore call codes, refer to table BCCODES in *Common Customer Data Schema,* 297-1001-451.

Datafill example for table BCCODES

The following example shows sample datafill for table BCCODES.

Datafill example for table BCCODES

Example of a MAP display:

```
 CALLTYPE
                                                     CODES
 ________________________________________________________
      LOCAL              (009) (036) (041) (067) (074)$
```

Datafilling table FGBCIC

Table FGBCIC is created by this feature package to store four-digit FGB CICs. The key field is the carrier name and the data is the carrier four-digit FGB CIC. Carriers without four-digit FGB codes should not be datafilled in table FGBCIC.

This table cannot be enabled or disabled. However, if table FGBCIC is not datafilled, billing or translations are not affected. Store for table FGBCIC is only allocated when the first tuple is added to the table. Therefore, no store is wasted if the table is not datafilled. When the first tuple is added to the table, room for 1000 tuples is allocated.

NTX211AB - FGB AMA Tandem (ATT Format) (continued)

Datafilling table FGBCIC Field	Subfield	Explanation and action
CARRNAME		*Carrier name* Enter the 1- to 16-character alphanumeric name of the carrier. The carrier name must correspond to a carrier name in table OCCINFO or TRKGRP, and must appear in table OCCNAME to be valid.
FGBNUM		*FGB CIC* Enter the four-digit code associated with the carrier name. The code must consist of 4 digits in the range of 0 to 9. A NIL value is not valid and results in an error message. Duplication of CICs is not allowed to avoid problems with reverse mapping of FGB CICs to carrier names. Any attempt to datafill a carrier with a previously used CIC results in an error message.

Datafill example for table FGBCIC

The following example shows sample datafill for table FGBCIC.

Datafill example for table FGBCIC

Example of a MAP display:

```
CARRNAME          FGBNUM
-------------------------
   CAR1            7772
```

Translation verification tools

TRAVER

The following example shows the output from TRAVER when it is used to verify FGB translations. For more information about TRAVER, see *Command Reference Manual*, 297-1001-509.

In the TRAVER command shown in this example

- L indicates the originator is a line
- 6211235 is the DN originating the call
- 9502345 is the DN receiving the call
- B indicates that a report on both table entries and results is desired

NTX211AB - FGB AMA Tandem (ATT Format) (end)

TRAVER output example when TRAVER is used to verify this package

Line	Output
	>TRAVER L 6211235 9502345 B
1	TABLE LINEATTR
2	0 1FR NONE NT FR01 0 613 P621 L613 N TSPS N 10 NIL NILSFC LATA1 0 NIL NIL 00 Y RESGRP 0 2
3	LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
4	TABLE DNATTRS
5	TUPLE NOT FOUND
6	TABLE DNGRPS
7	TUPLE NOT FOUND
8	TABLE STDPRTCT
9	P621 (1) (1)
10	. SUBTABLE STDPRT
11	. 9502345 9502345 FGB DD 0 CARB Y OFRT 905 7 7
12	. . TABLE OFRT
13	. . 905 N D FGBCAR2W 0 N N
14	. . EXIT TABLE OFRT
15	. SUBTABLE AMAPRT
16	. KEY NOT FOUND
17	. DEFAULT VALUE IS: NON OVRNONE N
18	
19	
20	+++TRAVER: SUCCESSFUL CALL TRACE +++
21	
22	DIGIT TRANSLATION ROUTES
23	
24	1 FGBCAR2W 9502345 ST
25	
26	TREATMENT ROUTES. TREATMENT IS: GNCT
27	1 T120
28	
29	
30	+++TRAVER: SUCCESSFUL CALL TRACE +++

Service orders

Service orders are not applicable for this package.

NTX843AB - Cellular Interconnect

Package name

Cellular Interconnect

Package number

NTX843AB

Feature numbers

The NTX843AB feature package consists of the following features:

NTX843AB feature numbers and names

Feature number	Feature name
AL0380	Type 2A Cellular Interconnection
AF1451	MF Monitor for Type 2A Cellular Interconnect

BCS applicability

BCS35 and up

Feature package prerequisites

This package requires the following feature package:

Feature package prerequisites

Feature package	Feature package name
NTX386AA or NTX386AB	Access Tandem Switch

Description

This feature package provides the capability of producing originating and terminating AMA records for type 2A cellular interconnections. Bellcore has defined three interconnection schemes for a CMC to access the operating company, the IEC, and the INC networks. They are the following:

- type 1 (a trunk connection through an EAEO or a non-EAEO)
  The signaling received from the CMC is similar to that from a line.
- type 2A (a connection through an AT)
  The signaling received from the CMC is similar to that from an EAEO.
- type 2B (a connection from a CMC to a local end office)
  Type 2B is a form of type 1 interconnection.

NTX843AB - Cellular Interconnect (continued)

Theory of operation

This feature package allows a type 2A interconnection from a CMC to an AT. Calls may be routed to an IEC, another CMC, or to a termination within the LATA. This feature package also provides two call code records for type 2A cellular interconnections. A call code 64 AMA record is produced for an originating CMC call, if a wink from the CMC is received. An originating CMC call is a call from an AT to a CMC trunk group.

A call code 66 AMA record is produced for a terminating CMC call when a seizure is detected on the incoming CMC trunk. A terminating CMC call is a call from a CMC trunk to a connecting AT. If a call is made from a CMC to another CMC, the call is both an originating and a terminating CMC call.

The production of these AMA records is controlled by options CMCICWK, CMCORIG, and CMCTERM in table AMAOPTS.

MF monitor for type 2A cellular interconnect

Prior to this feature package, the AT received only the first stage of signaling from the CMC, which was used to establish the connection to the IEC. The second stage of outpulsing, which included the called DN, was passed directly from the CMC to the IEC, and was not detected by the AT. Consequently, the called number was not available to be included in the originating or terminating billing record.

This feature package provides an MF monitor for the connection between a CMC and an AT. The MF monitor allows the AT to detect the second stage of outpulsing from the CMC so that billing provided to the IEC can include the called DN. Signaling to the carrier is not affected.

Field CMCMON in table OCCINFO gives the operating company the option of monitoring the connection for a carrier and including the called number in the billing records. When field CMCMON is set to Y, the connection between the CMC and the IEC or INC is monitored to determine the called DN. This DN is then placed in the billing records for call codes 66 and 110. When field CMCMON is set to N, the connection is not monitored.

Translations

The CMC type 2A interconnections are datafilled as CELL trunk groups in the DMS-200 switch. When a call is made from a CMC to an FGD carrier, a CMC terminating record and originating record are generated. The AT detects the called DN and includes it in these billing records for the IEC. Note that the signaling received from the CMC is similar to that from an EAEO.

Translations for Equal Access and non-Equal Access calls from a PX trunk are similar to translations for POTS lines. See feature package NTX386AB - Access Tandem Switch in this guide for additional information about POTS Equal Access translations.

Making records of unanswered calls

If unanswered call records are required, table BCCODES should be datafilled as described in *Common Customer Data Schema*, 297-1001-451. Office parameter NUM_OF_BC_AMA_UNITS in table OFCENG should be increased to reflect this feature.

Treatments for 10XXX intra-LATA calls

Formerly, when Equal Access calls failed because they could not be completed by the carrier (according to table OCCINFO datafill), they were routed to vacant code (VACT). The treatment given is now dependent upon the call type and the carrier datafill in table OCCINFO. Table 4-7 lists the treatments applicable to type 2A CMC calls.

Table 4-7
Failure conditions - new treatments

Failure condition	Treat-ment	Disposition
Inter-LATA restriction (INTER = N (no) in table OCCINFO for carrier)	CACE	CAC in error announcement
Intra-LATA restriction (INTRA = N in table OCCINFO for carrier)	NACD	Do not dial 10XXX announcement
Interstate restriction (INTERS = N in table OCCINFO for carrier)	CACE	CAC in error announcement
Intrastate restriction (INTRAS = N in table OCCINFO for carrier)	CACE	CAC in error announcement
International restriction (INTNTL = N in table OCCINFO for carrier)	CACE	CAC in error announcement
AD1 dialed (AD = N in table OCCINFO for carrier)	CACE	CAC in error announcement

TRAVER is updated to reflect the changed Equal Access treatments. When used with the trace option, TRAVER gives the reason for failed carrier checks, such as “This carrier does not handle inter-LATA traffic.” Then

NTX843AB - Cellular Interconnect (continued)

TRAVER shows a lookup of the treatment in table TMTCNTL. When used with the no trace option, TRAVER shows the treatment route for failed calls.

CELL-to-CCS7 interworking

Prior to this BSC, MF CELL-to-CCS7 ATC calls in the AT failed and generated a DFIL126 log, indicating that the originating trunk group type (CELL) was unsupported by MF-to-CCS7 interworking. The following calls are now supported by this feature package:

- calls incoming on MF CELL trunks with FGD signaling and terminating to CCS7 ATC trunks
- calls incoming on CCS7 ATC trunks and terminating to MF CELL trunks
- non-IEC intra-LATA calls incoming on MF CELL trunks and terminating to CCS7 IT trunks

The following FGD call types are also supported (when routed to a CCS7 ATC trunk):

- domestic DD or OA:
  - KP + 0ZZXXX + ST
  - KP + (II + ANI) + ST
  - KP + (0) + 7/10 digits + ST
- cut-through:
  - KP + 0ZZXXX + ST
  - KP + (II + ANI) + STP
- cut-through to IEC operator:
  - KP + 0ZZXXX + ST
  - KP + (II + ANI) + ST
  - KP + 0 + ST
- FGD 950:
  - KP + 0ZZXXX + ST
  - KP + (II + ANI) + ST2/3P
- international DD or OA:
  - KP + 1N/N'X + XXX + CCC/01R+ ST
  - KP + (II + ANI) + ST
  - KP + (0) + CC + NN + ST
- international cut-through:
  - KP + 1NX + XXX + 000 + ST
  - KP + (II + ANI) + STP

- international cut-through to INC operator:
  - KP + 1N'X + XXX + 000 + ST
  - KP + (II + ANI) + ST
  - KP + 0 + ST
- international 950:
  - KP + 1NX + XXX + 000 + ST
  - KP + (II + ANI) + ST2/3P
- terminating FGD calls incoming on CCS7 ATC trunks outgoing to MF CELL trunks
- CCS7 IT termination and origination for non-IEC intra-LATA CMC calls

All CELL-to-CCS7 ATC interworking calls use the same signaling as MF IT-to-CCS7 ATC interworking calls. No message fields are changed.

Translations table flow

The NTX843AB - Cellular Interconnect translation tables are described in the following paragraphs.

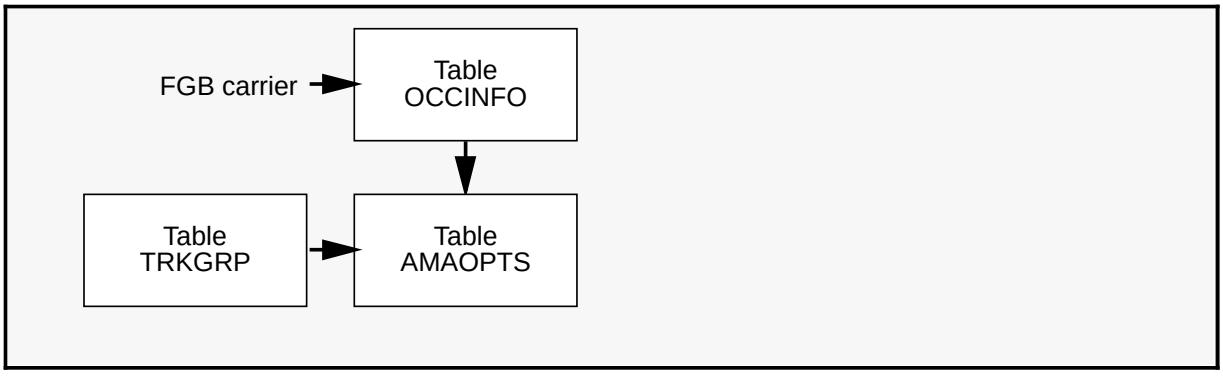
Table OCCINFO allows the operating company to monitor the CMC and IEC/INC connection, and to include the called number in the billing records.

Table AMAOPTS enables generation of call code 64 and 66 records.

Table TRKGRP enables type 2A interconnection to a CMC.

The order in which tables are accessed during the NTX843AB - Cellular Interconnect translation process is shown in the following flowchart.

Figure 4-12
Table flow for Cellular Interconnect



NTX843AB - Cellular Interconnect (continued)

The following table lists the datafill content used in the flowchart example.

Datafill example for Cellular Interconnect	
Item	**Example data**
Call code	064 and 066
Datafill table	**Example data**
OCCINFO	CAR1 777 EAP Y Y Y N Y Y Y Y N Y N N Y Y N Y N N
AMAOPTS	CMCORIG ON CMCICWK ON CMCTERM ON
TRKGRP	CMCABCAT CELL 0 TLA NCRT IC NIL MIDL 613 PEA NSCR 613 6211234 N

Package limitations and restrictions

The following limitations and restrictions apply to this feature package:

- Operator access is not allowed on a terminating CMC call. In particular, operator hold and EAOSS are not supported.
- Originating CMC calls do not normally require operator intervention. However, if a DMS-200 TOPS office receives an OA call to a cellular carrier, the call must be routed to an IT trunk before reaching the CELL trunk. Direct connections from a TOPS position to a CELL trunk are not supported.
- MF monitoring applies to FGD calls (national, international, and 950).
- CCS7 ATC trunk termination is not supported for FGB or FGC calls incoming on MF CELL trunks.
- Tandeming Equal Access CMC calls to another AT with CCS7 IT trunks is not supported.
- Option CMCICWK does not affect the carrier connect time for MF CELL-to-CCS7 ATC calls. Instead, carrier connect time is set to the time the IAM is sent to the FGD carrier.
- Field CMCMON in table OCCINFO does not affect the call code 66 and 110 billing records generated for MF CELL-to-CCS7 ATC calls. The called number is always collected and placed in the TERM NPA and TERM NUMBER fields of the billing records if it is available. See billing section for details.
- As with MF-to-CCS7 interworking, the selection of an outgoing MF ATC trunk as the secondary route after a continuity check has failed on the originally selected CCS7 ATC trunk is not supported.

- All 800 calls incoming on a MF CELL trunk to a E800 SSP are not supported.

Feature interactions

This feature package interacts with the following features:

- The operating company can use existing MF receivers, universal tone receivers, or both.
- The extra time for holding a receiver is about 4 seconds for a national call and 5.5 seconds for an international call.
- There are interactions between the CMC feature and the various types of carrier access (FGA, FGB, FGC, and FGD). All CMC access records are produced, in addition to other carrier access records that would normally be produced if the CMC is considered a line-side connection.

Activation/deactivation by the end user

Activation/deactivation is not applicable for this package.

Billing

With this feature package, calls can be made from a CMC switch through a DMS-200 AT. Billing records are provided so that the CMC can be charged for switch access. The following table lists the call codes produced for CMC calls.

Call codes for CMC calls

Call type	Call codes produced
CMC to FGA carrier	66, 131
CMC to FGB carrier	66, 134
CMC to FGC carrier	66, 110
CMC to FGD carrier	66, 110
CMC to toll trunk (to EAEO)	66
CMC to line	66
CMC to CMC	66, 64
FGA carrier to CMC	132, 64
FGB carrier to CMC	135, 64
FGC carrier to CMC	119, 64
FGD carrier to CMC	119, 64

-continued-

NTX843AB - Cellular Interconnect (continued)

Call codes for CMC calls (continued)	
Call type	**Call codes produced**
Line to CMC	64
Toll trunk from EAEO to CMC	64
End	

The calling and called digits in FGD signaling are passed through to the carrier on a speech path and are not collected in the AT. This feature package takes the calling number out of trunk group data for the CELL trunk group and uses it in the billing record produced. The called number field is left blank for CMC-to-FGD calls. The absence of the calling number ensures that downstream billing does not detect this case as an error.

Two new call codes have been added for originating and terminating CMC calls. They are described in the following sections.

Call code 64

Call code 64 is a Bellcore format code for an originating call to a CMC. This call code uses existing structure codes 00653 (standard originating CMC call) and 00654 (long duration).

The following is an example of a call code 64 record.

```
HEX ID:
AA  STRUCT CODE:00653C  CALL TYPE:064C SENSOR TYPE:036C
SENSOR ID:
0000000C  REC OFC TYPE:036C REC OFC ID:0000000C
DATE:
80107C  TIMING IND:00000C STUDY IND:00C ANSWER:0
SERV OBSERVED:
0C OPER ACTION:0C SERV FEAT:000C OVERSEAS IND:1C
TERM NPA:
00613C TERM NO:6211901C  TIME:2256209C
ELAPSED TIME:
000000024C IC/INC PREFIX:02222C CC DATE:80107C
CC TIME:
2256136C  ELAPSED CC:000000098C IC/INC EVENT:010C
TRK GRP:
00293C  ROUTING:0C
```

Call code 66

Call code 66 is a Bellcore format code for a terminating call from a CMC. A possible exception is a CMC call to an FGD carrier. If option CMCICWK

is turned on in table AMAOPTS, the billing record is not made unless a billing wink is received from the FGD carrier.

This call code uses existing structure codes 00625 (standard terminating CMC call) and 00627 (long duration). The following is an example of a call code 66 record.

```
HEX ID:
AA  STRUCT CODE:00625C  CALL TYPE:066C SENSOR TYPE:036C
SENSOR ID:
0000000C  REC OFC TYPE:036C  REC OFC ID:0000000C
DATE:
80107C  TIMING IND:00000C  STUDY IND:0000000C ANSWER:0C
SERV OBSERVED:
0C  OPER ACTION:0C SERV FEAT:000C  ORIG NPA:613C
ORIG NO:
6211901C  OVERSEAS IND:1C  TERM NPA:00613C
TERM NO:
8881234C  TIME:2255337C  ELAPSED TIME:000000038C
IC/INC PREFIX:
02221C  CC DATE:80107C  CC TIME:2255283C
ELAPSED CC:
000000091C  IC/INC EVENT:010C TRK GRP:00299C
ROUTING:
0C  DIALING:7C  ANI:0C
```

Billing for CELL-to-CCS7 calls

The following call codes are supported for FGD calls to the CMC:

- call code 64 (originating CMC call)

  This call code record is generated on calls outgoing to CELL trunks. The following fields are changed for calls incoming on CCS7 ATC or CCS7 IT trunks which terminate on MF CELL trunks:

  - ORIG NPA: If calling NPA is available from the charge number or calling number parameter of the incoming IAM, this field is set to that NPA. Otherwise, it set to 00000.
  - ORIG NUMBER: If calling number is available from the charge number or calling number parameter of the incoming IAM, this field is set to that number. Otherwise, it is set to 0000000.
  - TERM NPA: If available from IAM, this field is set to dialed NPA. Otherwise, it is set to NPA for incoming trunk group data.
  - TERM NUMBER: This field is set to the last seven digits of called number in incoming IAM.

- call code 66 (terminating CMC call)

NTX843AB - Cellular Interconnect (continued)

The following fields for calls outgoing to CCS7 ATC and CCS7 IT (non-IEC intra-LATA) trunks are changed:

- ORIG NPA: If calling number is available on an FGD call from the CMC, this field is taken from the 10-digit calling number. Otherwise, it is taken from table TRKGRP (CELL), field BILLNO (if 10-digit BILLNO is provided) or SNPA (if 7-digit BILLNO is provided).
- ORIG NUMBER: If calling number is available on an FGD call from the CMC, this field is set to the last seven digits of the calling number. Otherwise, it is taken from table TRKGRP (CELL), field BILLNO.
- TERM NPA: For domestic calls, this field is set to the NPA of the called number outpulsed from the CMC if the NPA was dialed. If the NPA was not dialed, this field is set to the same value as the ORIG NPA. For international calls, this field is unchanged. For cut-through and 950 calls, it is set to 00000.
- TERM NUMBER: For domestic calls, this field is set to the last seven digits of the called number as outpulsed from the CMC. For cut-through and 950 calls, it is set to 0000000. It is unchanged for international calls.
- CARRIER CONNECT TIME: This field is set to the time the IAM is outpulsed to IEC.

- call code 110 (originating Equal Access call)

  The following fields for terminating CMC calls outgoing to CCS7 ATC trunks are changed:

  - ORIG NPA: If calling number is available on an FGD call from the CMC, this field is taken from the 10-digit calling number. Otherwise, it is taken from table TRKGRP (CELL), field BILLNO (if 10-digit BILLNO is provided) or SNPA (if 7-digit BILLNO is provided).
  - ORIG NUMBER: If calling number is available on an FGD call from the CMC, this field is set to the last seven digits of the calling number. Otherwise, it is taken from table TRKGRP (CELL), field BILLNO.
  - TERM NPA: For domestic calls, this field is set to the NPA of the called number outpulsed from the CMC if the NPA was dialed. If the NPA was not dialed, this field is set to the same value as the ORIG NPA. For international calls, this field is unchanged. For cut-through and 950 calls, it is set to 00000.

- TERM NUMBER: For domestic calls, this field is set to the last seven digits of the called number as outpulsed from the CMC. For cut-through and 950 calls, it is set to 0000000. It is unchanged for international calls.
- CARRIER CONNECT TIME: This field is set to the time the IAM is outpulsed to IEC.
- TRUNK GROUP NUMBER: The first character of the BCD is set to 4 to indicate a CCS7 ATC trunk group routing from the AT to the IEC; BCD characters 2 to 5 are set to the CCS7 ATC trunk group number.

- call code 119 (terminating Equal Access call)

  This record is unchanged from the record generated on a CCS7 ATC-to-MF IT call in the AT.

Datafilling office parameters

The following table identifies the datafill for this package.

Office parameters used by Cellular Interconnect

Table name **Parameter**	**Explanation and action**
OFCENG NUM_OF_BC_AMA_UNITS	Each originating CMC call (and certain terminating CMC calls) requires at least one Bellcore AMA unit. However, when provisioning parameter NUM_OF_BC_AMA_UNITS, two Bellcore AMA units should be provided for every CELL trunk in the office which routes to a carrier. See table 4-8 for more information.

Note: To calculate the number of CAMA recording units required, use the following provisioning rule:

UNITS = the existing provisioned number
+ the average number of CAMA calls per second that generate a GENERIC AMA record (call codes 800 to 999)
+ the average number of CAMA calls per second that generate a service feature field using table STDPRTCT and subtable STDPRTCT.AMAPRT.

NTX843AB - Cellular Interconnect (continued)

Table 4-8
Bellcore AMA units

Call type	Number of units
CELL trunk to CELL trunk	1
CELL trunk to FGC/FGD carrier	2
CELL trunk to FGB carrier	2
CELL trunk to end office (IT trunk)	1
CELL trunk to line (DMS-100/200 switch)	1

Datafill sequence

The following tables require datafill to implement the feature package. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Cellular Interconnect

Table	Form	NTP	Purpose of table
OCCINFO	2355A-B	297-1001-451	Table OCCINFO (other common carrier information) defines the attributes for the carriers serving a DMS switch and screens calls for carrier compatibility.
TRKGRP (CELL)	2156BG	297-1001-451	Table TRKGRP (CELL) (cellular trunk group) defines the trunks over which cellular traffic is routed. This table allows type 2A interconnections between a CMC and an AT.
AMAOPTS	2333A-B	297-1001-451	Table AMAOPTS (AMA options) controls the activation and scheduling of the recording options for local, toll, and high-revenue calls.

Datafilling table OCCINFO

Field CMCMON has been added to allow monitoring of the CMC and IEC/INC connection. The CMCMON field also allows the called DN to be included in the originating and terminating billing records.

The following procedure shows the datafill for table OCCINFO. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table OCCINFO

Field	Subfield	Explanation and action
CMCMON		*Cellular mobile carrier monitor* Enter Y to monitor the connection between the CMC and the IEC/INC, and to place the called DN in the originating and terminating billing records. Otherwise, enter N.

Datafill example for table OCCINFO

The following example of a cellular trunk to line call shows sample datafill for table OCCINFO.

Datafill example for table OCCINFO

Example of a MAP display:

```
CARRNAME CARRNUM ACCESS INTER INTNTL INTRA ANI FANI ONISCRN AD1
OVERLAP INTERS INTRAS TERMREC OCCSEPNO OPSIG PICIND NOA950
INCCPN DTMFIND OPSERV CACBLOCK CTDOA CMCMON SCRNWATS CRMCRA
ATPINCL INTRAOPR
```

```
    C111      111   EAP     Y      Y     N   Y    N        N  Y
    Y         Y     Y    LONG       O  FGRPC      Y      N
     N        N     N        N     N      N        N      Y
      N         N
```

Datafilling table TRKGRP (CELL)

The following procedure shows the datafill for table TRKGRP (CELL). This procedure contains only those fields that apply to this package. See *Common Customer Data Schema,* 297-1001-451, for a description of the other fields.

Datafilling table TRKGRP (CELL)

Field	Subfield	Explanation and action
	BILLNO	*Billing number* The number to which the call will be billed. ***Note:*** If the FGB carrier has requested ANI, this field is used.
	CCWKVLD	*Carrier connect wink* Enter N to indicate that the carrier connect wink in Equal Access international calls should not be regenerated. Otherwise, enter Y. This field exists because most non-EAEOs and ATs cannot handle this wink.

NTX843AB - Cellular Interconnect (continued)

Datafill example for table TRKGRP (CELL)

The following example of a cellular trunk to line call shows sample datafill for table TRKGRP (CELL).

Datafill example for table TRKGRP (CELL)

Example of a MAP display:

```
        GRPKEY
                                                        GRPINFO
________________________________________________________________
      CMCABCAT
         CELL 0 TLA NCRT 2W NIL MIDL 613 PEA NSCR 613 8910000 N
```

Datafilling table AMAOPTS

Table AMAOPTS controls the activation and scheduling of the recording options for local, toll, and high-revenue calls. It contains one tuple for every option. A schedule, associated with every option, defines whether an option is active, active only at certain times, or not active.

Options CMCORIG, CMCTERM, and CMCICWK are related to this feature package. The following procedure shows the datafill for these options in table AMAOPTS. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table AMAOPTS

Field	Subfield	Explanation and action
OPTION		*Option* Enter an alphanumeric option code. The options relevant to Equal Access are described in the following subfields.
	CMCORIG	This option controls the generation of originating CMC billing records (call code 64).
	CMCTERM	This option controls the generation of terminating CMC billing records (call code 66).
	CMCICWK	For a terminating CMC call, the carrier connect time is normally the time the incoming CMC trunk is seized. If option CMCICWK is set to ON, the carrier connect time on a CMC-to-FGD carrier call is the time the billing wink is received from the FGD carrier. A CMC access record is not produced unless a billing wink is received from the FGD carrier.

-continued-

Datafilling table AMAOPTS (continued)

Field	Subfield	Explanation and action
SCHEDULE		*Schedule* This field consists of the following subfields.
	AMASEL	*AMA selector* Enter one of the following values: ON Activate the option immediately. OFF Deactivate the option immediately. DEFAULT Use the default schedule for the option. PERIODIC Activate the option at the specified date and time, and perform the periodic activity every so many hours or minutes. Complete subfields ONDATE and ONTIME to specify the date and time for activation, and complete field SCHED for the time intervals to perform the activity. TIMED Activate the option between the specified dates and times. For the CMCORIG option, the valid AMA selectors are ON, OFF, TIMED, and DEFAULT. Default is OFF. For the CMCTERM option, the valid AMA selectors are ON, OFF, TIMED, and DEFAULT. Default is OFF. For the CMCICWK option, the valid AMA selectors are ON, OFF, TIMED, and DEFAULT. Default is OFF.
	ONDATE	*Activation on date* If AMASEL = TIMED, enter the year, the month, and the day on which the activation of the option is set to ON. The format is YYMMDD. Otherwise, there is no prompt for this field.
	ONTIME	*Activation on time* If AMASEL = TIMED, enter the hour and minute the option will be activated. The format is HHMM. Otherwise, there is no prompt for this field.

-continued-

Datafilling table AMAOPTS (continued)		
Field	**Subfield**	**Explanation and action**
	OFFDATE	*Activation off date* If AMASEL = TIMED, enter the year, the month, and the day on which the activation of the option is set to OFF. The format is YYMMDD. Otherwise, there is no prompt for this field.
	OFFTIME	*Activation off time* If AMASEL = TIMED, enter the hour and minute the option will be deactivated. The format is HHMM. Otherwise, there is no prompt for this field.
End		

Datafill example for table AMAOPTS

The following example shows sample datafill for table AMAOPTS. In this example, option CMCORIG is enabled.

Datafill example for table AMAOPTS

Example of a MAP display:

```
        OPTION                  SCHEDULE
-------------------------------------------

         CMCORIG                    ON
```

Translation verification tools

Translation verification tools are not applicable for this feature package.

Service orders

Service orders are not applicable for this feature package.

NTXE67AA - Equal Access Intermediate Tandem

Package name

Equal Access Intermediate Tandem

Package number

NTXE67AA

Feature number

The NTXE67AA feature package consists of the following feature:

NTXE67AA feature number and name

Feature number	Feature name
AF2016	Equal Access Intermediate Tandem

BCS applicability

BCS36 and up

Feature package prerequisites

This package requires the following feature packages:

Feature package prerequisites

Feature package	Feature package name
NTX710AA	LATA Equal Access System
NTX803AA	Equal Access Alternate Switching Point

Description

This feature package, used in conjunction with the LEAS feature package, provides a DMS-100/200 or DMS-200 office with the capability of transferring IEC calls incoming from NCEOs to an AT. Alternatively, the calls can be routed directly to an IEC, provided the IEC has a point of presence at the Equal Access intermediate tandem (EAIT) office.

Theory of operation

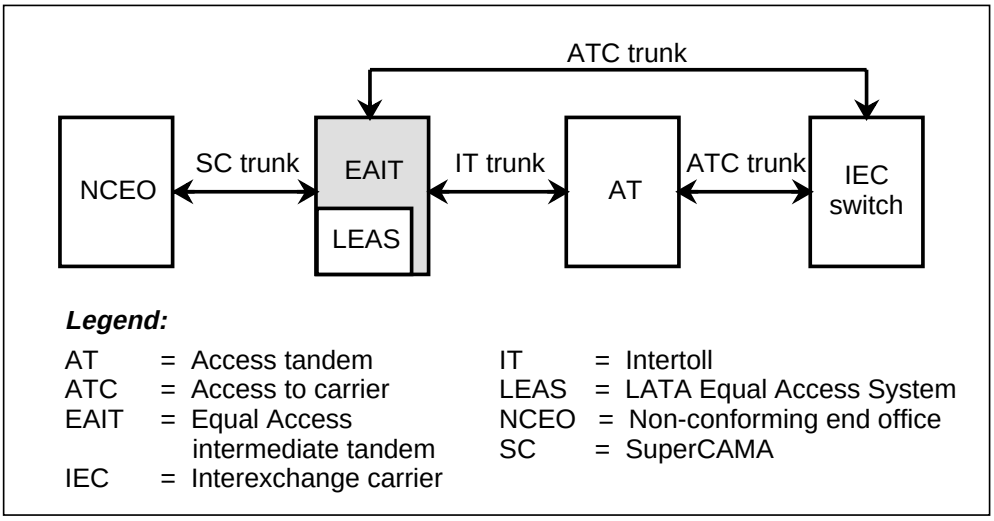
In some rural areas served by independent telephone companies, there are clusters of small electromechanical end offices with the nearest AT office too far away for economical provisioning of Equal Access-like service. These offices are called nonconforming end offices (NCEO). Certain telephone companies want to be able to deliver Equal Access traffic from NCEOs or EAEOs to an EAIT and then tandem that traffic to an AT or send the traffic directly to the IEC.

The existing EASP feature package (NTX803AA) allows a DMS-100, DMS-100/200, or DMS-200 switch to tandem Equal Access traffic between

NTXE67AA - Equal Access Intermediate Tandem (continued)

a cluster of EAEOs and an AT. The EASP feature, however, cannot provide Equal Access-like service to NCEOs. The LEAS feature package (NTX710AA) does not provide the ability to tandem Equal Access traffic from NCEOs to an AT. However, it does provide Equal Access-like service to NCEOs. The EAIT feature package uses the capabilities of the EASP and LEAS to provide the ability to tandem Equal Access traffic from NCEOs through an EAIT to an AT or directly to the carrier. The EAIT is a DMS-100/200 or a DMS-200 switch with LEAS. Figure 4-13 shows an EAIT switching configuration.

Figure 4-13
EAIT switching configuration



With this feature package, non-OA calls incoming to the EAIT over SC trunks that are recognized as LEAS calls will be tandemed to an AT over IT trunks using FGD signaling. If the carrier has a point of presence at the EAIT, the calls can be sent directly to the carrier over ATC trunks. Operator traffic will be routed as done with LEAS.

FGD signaling is used between the EAIT and the AT for national and international calls. When the AT is seized by the EAIT, this feature package generates a digit stream to the AT. For national calls, digit stream KP+0ZZ+XXX+ST is generated. For international calls, digit stream KP+1NX+XXX+CCC+ST is generated. This digit stream constitutes the first stage of outpulsing. The AT then seizes a trunk to the carrier, regenerates the digits, and sends them to the carrier.

The second stage of outpulsing is made up of two phases. During this second stage, the AT remains transparent to the digits outpulsed to the carrier. The first phase sends the information digits and the ANI through the

AT to the carrier. The second phase sends the called number through the AT to the carrier.

Following the second stage of outpulsing, an acknowledgement wink is received from the carrier and regenerated by the AT to the EAIT. Finally, the call is supervised for answer. Billing is done in the EAIT for calls incoming from NCEOs.

Carrier identification code expansion

Currently, each carrier is identified by a three-digit code, called the CIC. Because CICs in the series 10X, 15X, and 16X are not used, only up to 970 CICs can be assigned to an FGD carrier.

To prepare for the expected exhaustion of available CICs, this feature package expands the number of assignable CICs to 10 000. The format of the CAC, which is the dialing sequence used to access the carrier, is expanded from 10XXX to 101XXXX, where XXX and XXXX are the CICs. This feature package supports the CIC expansion for LEAS calls.

The transition from three- to four-digit CICs is implemented in three phases. They are described in table 4-9.

Table 4-9
Conversion phases to implement four-digit CICs

Conversion period		Valid CACs	Invalid CACs	Number of CICs available
Current		10XXX	1010X 1015X 1016X	970
Permissive	(part 1)	10XXX 1010XXX	1010X 1015X 1016X	970
	(part 2)	10XXX 1010XXX 1015XXX 1016XXX	1010X 1015X 1016X	2970
Final		101XXXX	10XXX	10 000

During the first part of the permissive period, the EAIT can process CACs of the form 10XXX and 1010XXX. The three-digit CIC assigned to each carrier is expanded to four digits by adding a leading zero. In this period, CACs of the form 1010X, 1015X, 1016X, 1015XXX, and 1016XXX are

unassigned. If the subscriber dials an unassigned code, the call is sent to treatment.

In the second part of the permissive period, CACs of the form 1015XXX and 1016XXX are assigned. CACs of the form 1010X, 1015X, and 1016X remain unassigned to help the EAIT distinguish between three- and four-digit CICs. When 10, 15, or 16 appears as digits 3 and 4 in the CAC, the LEAS assumes that a four-digit CIC has been dialed. Any other sequence is assumed to be a three-digit CIC.

In the final period, only four-digit CICs are accepted by the EAIT. Any call with a three-digit CIC is sent to treatment.

Implementing four-digit CICs in an EAIT

During the permissive period, the EAIT must be able to receive both three-digit CICs from non-converted EAEOs and four-digit CICs from converted EAEOs. However, because the EAIT should not receive both three- and four-digit CICs on the same trunk group, it will be converted trunk group by trunk group.

Table CICSIZE4 contains the trunk groups which use four-digit CICs. Trunk groups that do not appear in this table are assumed to use three-digit CICs. When full four-digit CIC conversion is achieved, all trunks at the EAIT carry four-digit CICs. Table CICSIZE4 is then no longer required and does not need to be consulted during translation. Office parameter EA_TAB_CICSIZE4_OBSOLETE is then set to Y to specify that table CICSIZE4 is no longer required.

Implementing the permissive dialing phase

The following table lists the actions required to implement the permissive dialing phase of the CIC expansion.

Implementing the permissive dialing phase

Step	Action
1	Add tuples to the standard pretranslator for the seven-digit CACs to be translated.
2	Add the trunk name to table CICSIZE4 for the trunk groups that carry four-digit CICs.

The following table shows a tuple added to subtable STDPRTCT.STDPRT. In this example, CIC 123 has been expanded to 0123.

Datafill example for subtable STDPRTCT.STDPRT

Example of a MAP display:

```
Current      080123      080123
entry             T NP 6  OFRT  202   6   6   NONE

New          0800123     0800123
entry             T NP 7  OFRT  202   7   7   NONE
```

Implementing the final dialing phase

The following table lists the actions required to implement the final dialing phase of the CIC expansion.

Implementing the permissive dialing phase

Step	Action
1	Make sure all four-digit CICs are datafilled in table OCCINFO.
2	Change the standard pretranslator in table STDPRTCT to translate seven-digit CACs.
3	Revise table CICSIZE4 to add the trunk groups which carry four-digit CICs. If all trunks have been converted to carry four-digit CICs, set office parameter EA_TAB_CICSIZE4_OBSOLETE to Y. In this case, you do not need to datafill table CICSIZE4.

The following table shows a tuple added to subtable STDPRTCT.STDPRT. In this example, CIC 222 has been expanded to 0222.

Datafill example for subtable STDPRTCT.STDPRT

Example of a MAP display:

```
Current      080222      080222
entry             T NP 6  OFRT  202   6   6   NONE

New          0800222     0800222
entry             T NP 7  OFRT  202   7   7   NONE
```

NTXE67AA - Equal Access Intermediate Tandem (continued)

Package limitations and restrictions

The following limitations and restrictions apply to this feature package:

- Non-OA traffic must be routed from the EAIT to the AT over IT trunks.
- Except for the changes provided by this feature, all restrictions/limitations inherent to the LEAS feature apply.
- LEAS does not support the AMA billing call codes 111 (inter-LATA WATS (wide area telephone service), station detail), 114 (inter-LATA WATS, billing number), and 117 (inter-LATA Datapath). Call code 120 (originating overflow counts for ATC trunks) is not generated if the call comes over a TOPS trunk group. Long duration calls over TOPS trunk groups do not generate A, B, C, or D records.

Feature interactions

Feature interactions are not applicable for this feature package.

Activation/deactivation by the end user

Activation/deactivation is not applicable for this feature package.

Billing

Billing is done in the EAIT for calls incoming from NCEOs.

NTXE67AA - Equal Access Intermediate Tandem (continued)

Datafilling office parameters

The following table identifies the datafill for this package.

Office parameters used by Equal Access Intermediate Tandem

Table name **Parameter**	**Explanation and action**
OFCENG EA_TAB_CICSIZE4_OBSOLETE	This office parameter specifies whether table CICSIZE4 is required. Set this parameter to N during the permissive phase of the CIC expansion. During this phase, table CICSIZE4 contains trunk groups with 4-digit CICs. When all CICs are converted to 4 digits, set this parameter to Y. Table CICSIZE4 is not used when this parameter is set to Y.

Datafill sequence

The following tables require datafill to implement the feature package.

Datafill tables required for Equal Access Intermediate Tandem

Table	Form	NTP	Purpose of table
CICSIZE4		297-1001-451	Table CICSIZE4 (carrier identification codes with 4 digits) identifies trunk groups with 4-digit CICs. This table is used only during CIC expansion transitional phase.

Datafilling table CICSIZE4

Table CICSIZE4 contains the trunk groups which use four-digit CICs. Trunk groups that do not appear in this table are assumed to use three-digit CICs. The following procedure shows the datafill for table CICSIZE4. See *Common Customer Data Schema,* 297-1001-451, for additional information.

Datafilling table CICSIZE4

Field	Subfield	Explanation and action
TRUNKGRP		Enter the trunk groups that use a 4-digit CIC. This table is datafilled only during the permissive phase, when office parameter EA_TAB_CICSIZE4_OBSOLETE is set to N. When this parameter is set to Y, table CACSIZE4 is not used.

Datafill example for table CICSIZE4

The following example shows sample datafill for table CICSIZE4.

Datafill example for table CICSIZE4

Example of a MAP display:

```
TRUNKGRP
```

```
TGRPX
TGRPY
TGRPZ
```

Translation verification tools

Translation verification tools are not applicable for this package.

Service orders

Service orders are not applicable for this package.

Datafilling an end office or an access tandem

This chapter describes feature package NTX989AA - Carrier Access Code Blocking for IEC/INC, which is available for the end office and the access tandem. This chapter also explains how to datafill the package.

NTX989AA - CAC Blocking for IEC/INC

Package name

CAC Blocking for IEC/INC

Package number

NTX989AA

Feature number

The NTX989AA feature package consists of the following feature:

NTX989AA feature number and name

Feature number	Feature name
AL0288	CAC Blocking for IEC/INC

BCS applicability

BCS30 and up

Feature package prerequisites

This package requires the following feature packages:

Feature package prerequisites

Feature package	Feature package name
NTX000AA	Bilge
NTX001AA	Common Basic
NTX186AA or NTX186AB	Equal Access End Office (for an end office)
NTX710AA	LATA Equal Access System (for an access tandem)

Description

With this feature package, an operating company can block CAC calls for a carrier. This feature is enabled or disabled through table control.

If a subscriber dials a CAC and the carrier has requested CAC blocking, the call will be routed to the CACB treatment, and the subscriber will hear an announcement stating that the carrier does not accept calls dialed with a CAC.

NTX989AA - CAC Blocking for IEC/INC (continued)

Theory of operation

This feature package affects call processing for LEAS and Equal Access calls. If a carrier does not want to receive CAC calls, field CACBLOCK in table OCCINFO must be set to Y.

Call processing checks the CAC blocking condition after other call processing options are checked. If another condition blocks a CAC call, the CAC blocking feature will not be activated. Other types of blocking take precedence over CAC blocking. They are

- intra-LATA call blocking
- interstate/intrastate call blocking
- international call blocking
- subscriber CAC blocking

Subscriber CAC blocking means that a particular subscriber is denied access to a carrier. Subscriber CAC blocking occurs when

- the subscriber is not allowed to make any CAC calls
- the subscriber is denied access to a specific carrier or list of carriers (CTD option is enabled)

CAC blocking takes precedence over abbreviated dialing blocking. If a carrier chooses to block both abbreviated dialing and CAC calls, the subscriber will receive the CACB treatment.

Package limitations and restrictions

This feature package does not impose any restrictions or limitations.

Feature interactions

This feature package interacts with the following features:

- CAC-dialed emergency calls (10XXX+911) are not affected by this feature package. These calls are not treated as Equal Access calls, and are routed from table HNPACONT.
- Certain LEAS calls require the operator to enter a three-digit carrier code. These calls are not affected by this feature.
- FGB calls are not affected by this feature package.

Activation/deactivation by the end user

Activation/deactivation is not applicable for this feature package.

Billing

This package does not affect billing.

NTX989AA - CAC Blocking for IEC/INC (continued)

Datafilling office parameters

This package does not affect office parameters.

Datafill sequence

The following table requires datafill to implement this package.

Datafill table required for CAC Blocking for IEC/INC

Table	Form	NTP	Purpose of table
OCCINFO	2355A-B	297-1001-451	Table OCCINFO (other common carrier information) defines the attributes for the carriers serving a DMS switch and screens calls for carrier compatibility.

Datafilling table OCCINFO

Table OCCINFO defines the attributes for carriers serving the office and screens calls for carrier compatibility. For example, table OCCINFO allows international traffic to be sent only to carriers capable of handling such traffic.

The following procedure shows the datafill for table OCCINFO. This procedure contains only those fields that apply to this package. See *Common Customer Data Schema*, 297-1001-451, for a description of the other fields.

Datafilling table OCCINFO

Field	Subfield	Explanation and action
CTDOA		*Carrier toll deny operator assisted* Enter Y to block OA calls to this carrier when the subscriber has the CTD line option applied for this carrier. Otherwise, enter N, the default value.
CACBLOCK		*Carrier access code blocking* Enter Y if the carrier wants to block all calls dialed with a CAC. Otherwise, enter N.

Datafill example for table OCCINFO

The following example shows sample datafill for table OCCINFO.

NTX989AA - CAC Blocking for IEC/INC (end)

Datafill example for table OCCINFO

Example of a MAP display:

```
CARRNAME CARRNUM ACCESS INTER INTNTL INTRA ANI FANI ONISCRN AD1
OVERLAP INTERS INTRAS TERMREC OCCSEPNO OPSIG PICIND NOA950
INCCPN DTMFIND OPSERV CACBLOCK CTDOA CMCMON SCRNWATS CRMCRA
ATPINCL INTRAOPR
```

```
     C111      111   EAP     Y      Y     N   Y    N        N  Y
     Y        Y      Y    LONG       O  FGRPC      Y      N
      N       N      N        N     N      N        N      Y
       N        N
```

Translation verification tools

Translations verification tools are not applicable for this package.

Service orders

Service orders are not applicable for this package.

List of terms

access tandem (AT)

A switching system that provides a traffic concentration and distribution function for interexchange traffic originating or terminating within a local access and transport area (LATA). The AT provides the interexchange carrier (IEC) with access to more than one end office within the LATA. The AT also acts as a toll tandem for intra-LATA traffic. The AT technical functions include automatic message accounting (AMA) recording, routing, and call supervision.

access to carrier (ATC) trunk

A trunk group that connects an end office or an access tandem (AT) to an interexchange carrier (IEC) or international carrier (INC).

AMA

automatic message accounting

ANI

automatic number identification

announcement machine

A recording machine that gives voice guidance to a subscriber if, for example, a call cannot be connected.

AT

access tandem

ATC

access to carrier

automatic message accounting (AMA)

An automatic recording system that documents the necessary billing data for subscriber-dialed long distance calls.

automatic number identification (ANI)

A system whereby a calling number is identified automatically and transmitted to the automatic message accounting (AMA) office equipment.

This number is used for billing records generated by an interexchange carrier (IEC) or international carrier (INC). *See also* operator number identification.

batch change supplement (BCS)

A DMS Family software release.

BCD

binary coded decimal

BCS

batch change supplement

Bell Communications Research (Bellcore)

A group responsible for coordinating Bell operating company projects and setting guidelines for a switching system.

Bellcore

Bell Communications Research

Bellcore AMA format

The standard format for automatic message accounting (AMA) data used by Bell operating companies. The format consists of a structure code that identifies the format of the data fields in the call record, a call code that identifies the type of call, other data fields that define the attributes of the call and, if needed, one or more module codes that identify the format of any additional data appended to the call record.

binary coded decimal (BCD)

A numerical system in which each digit of a decimal number is expressed separately as a four-bit binary number.

CAC

carrier access code

call management services (CMS)

Equivalent to CLASS in the United States. It is a set of services that capitalizes on the fact that information can be transmitted to the subscriber on both the calling and called line numbers. CMS is primarily targeted at single-line users, such as small business and residential, giving subscribers more control over their calls.

CAMA

centralized automatic message accounting

CAROT

centralized automatic reporting on trunks

carrier access code (CAC)

A set of digits (10XXX, 101XXXX, or 950-WXXX) in the Equal Access and interim dialing plan that is used to access a carrier.

carrier identification code (CIC)

A set of three or four digits (XXX or XXXX) in the Equal Access and interim dialing plans that designates the interexchange carrier (IEC) or international carrier (INC) that handles a call. The digits are either dialed by the subscriber or added to the dialed digits by the system software.

carrier toll denied (CTD)

A service that denies access to specified carriers for a designated line. When this service is assigned to a line, the carriers that are denied access are also identified.

CCITT

Consultative Committee on International Telephony and Telegraphy

CCS7

common channel signaling 7

cellular mobile carrier (CMC)

A utility that provides telephone service to mobile customers by using radio cell sites connected to a CMC switching office.

central processing unit (CPU)

The hardware unit of a computing system that contains the circuits controlling and performing the execution of instructions.

centralized automatic message accounting (CAMA)

A system that produces itemized billing details for subscriber-dialed long distance calls. Details are recorded at a central facility serving a number of exchanges. In exchanges not equipped for automatic number identification (ANI), calls are routed to a CAMA operator who obtains the calling number and keys it into the computer for billing. *See also* local automatic message accounting.

centralized automatic reporting on trunks (CAROT)

A system for automatically reporting faults identified on toll trunk circuits.

centrex

Centralized private branch exchange (PBX). A service that provides a business telephone subscriber with direct inward dialing to extensions on the same system and direct outward dialing from all extensions. Centrex switching equipment can be at the central office or on the operating company customer's premises.

CIC

carrier identification code

circuit reservation acknowledgement (CRA)

An initial address message (IAM) parameter used by the interexchange carrier (IEC) to acknowledge the reservation of a circuit. This parameter is used only in a feature group D (FGD) multifrequency (MF) or common channel signaling 7 (CCS7) interworking scenario for calls routed to an IEC through the access tandem (AT). When the AT receives the CRA, it sends a wink to the Equal Access end office (EAEO).

circuit reservation message (CRM)

An initial address message (IAM) parameter used by the access tandem (AT) to reserve or seize a circuit with the selected interexchange carrier (IEC). This parameter is used only in a feature group D (FGD) multifrequency (MF) or common channel signaling 7 (CCS7) interworking scenario for calls routed to an IEC through the AT.

CLASS

custom local area signaling service

CLLI

common language location identifier

CMC

cellular mobile carrier

CMS

call management services

common channel signaling 7 (CCS7)

Digital, message-based, network signaling Consultative Committee on International Telephony and Telegraphy (CCITT) standard. It separates call signaling information from voice channels so that interoffice signaling is exchanged over a separate signaling link.

common language location identifier (CLLI)

A standard identification method for trunk groups in the form:

aaaa bb xx yyyy

where

aaaa	=	city code
bb	=	province or state code
xx	=	trunk group identifier
yyyy	=	trunk number

Consultative Committee on International Telephony and Telegraphy (CCITT)

One of the four permanent groups within the International Telecommunication Union. The CCITT is responsible for studying technical, operating, and tariff questions. This organization also prepares recommendations relating to telephony and telegraphy, including data and program services.

corridor call

An interexchange call that is routed through a local exchange carrier (LEC) instead of an interexchange carrier (IEC).

CPU

central processing unit

CRA

circuit reservation acknowledgement

CRM

circuit reservation message

CTD

carrier toll denied

custom local area signaling service (CLASS)

A set of call services that provides the ability to supply Calling Line Identification to the call destination, store information on the last incoming and last outgoing call, and monitor the status of a destination line.

DA

directory assistance

data modification order (DMO)

A request initiated by operating company personnel to change DMS information. The request can be made through either the table editor or the Service Order System (SERVORD).

Datapath

Northern Telecom's system for providing direct circuit-switched digital data transmission through a DMS switch over existing telephone networks. Datapath also provides connectivity to public and private networks. Datapath functions with industry-standard data terminal equipment and applications, using T-link rate adaptation protocol for communication.

DCR

Dynamically Controlled Routing

DD

direct dial

DDD

direct distance dialing

DDU

disk drive unit

default carrier

An interexchange carrier (IEC) selected by the operating company to handle interexchange or international traffic for subscribers without a primary inter-LATA carrier (PIC) and not dialing an Equal Access plan (EAP) or interim prefix.

dial pulse (DP)

A method of transmitting signaling information from a telephone set or a trunk circuit. Dial pulses are generated by alternately opening and closing a contact in the telephone through which the direct current flows. *See also* Digitone *and* dual-tone multifrequency signaling.

Digital Multiplex System (DMS)

A central office switching system in which all external signals are converted to digital data and stored in assigned time slots. Switching is performed by reassigning the original time slots.

digital recorded announcement machine (DRAM)

A peripheral module (PM), developed for the DMS switch, in which voice messages are stored in digital form, providing access to up to 30 different service voice announcements.

Digitone

A service-related telephony feature that allows address information to be generated from a telephone set in the form of a dual-tone multifrequency (DTMF) signals by manually pressing nonlocking buttons. Also known as dual-tone multifrequency dialing.

direct dial (DD)

A call that requires no operator intervention.

direct distance dialing (DDD)

A telephone exchange service that permits subscribers to call a number outside their local area without operator assistance.

directory assistance (DA)

A service that allows a subscriber to ask an operator to look up information from a telephone listing database.

directory number (DN)

The full complement of digits required to designate a subscriber's station within one numbering plan area (NPA)-usually a three-digit central office code followed by a four-digit station number.

disk drive unit (DDU)

A hardware device that consists of a disk drive and a power converter card installed in an input/output equipment frame.

DMO

data modification order

DMS

Digital Multiplex System

DMS-100

A member of a family of digital multiplexed switching systems. The DMS-100 is a local switch.

DMS-100 Family switches

A family of digital multiplexed switching systems, which includes the following: DMS-100, DMS-100/200, DMS-100 switching cluster, DMS-100 switching network, DMS-200, DMS-250, and DMS-300.

DMS-100/200

A member of a family of digital multiplexed switching systems. A DMS-100/200 is a switch of mixed function, in this case a combined local/toll switch.

DMS-200

A member of a family of digital multiplexed switching systems. The DMS-200 is a toll switch.

DN

directory number

DP

dial pulse

DRAM

digital recorded announcement machine

DTMF

dual-tone multifrequency

dual-tone multifrequency (DTMF) signaling

A signaling method that uses set combinations of two specific voice-band frequencies. One of these voice-band frequencies is selected from a group of four low frequencies, and the other is selected from a group of three or four relatively high frequencies.

Dynamically Controlled Routing (DCR)

A feature that allows a DMS switch to reserve idle trunks in trunk groups to provide routes for overflowing traffic. The trunks are separated by one or more links from an original toll switch.

EAEO

Equal Access end office

EAIT

Equal Access intermediate tandem

EAOSS

Equal Access operator services signaling

EAP

Equal Access plan

EASP

Equal Access alternate switching point

EBS

electronic business set

electronic business set (EBS)

A telephone set that provides subscribers with push-button access to various business features. Also known as electronic telephone set. *See also* Meridian business set.

end office

A local switching office that interconnects subscriber station lines to each other and to trunks.

Equal Access

A software feature, or group of features, that allows an operating company to offer subscribers a choice of carriers every time they make a long distance call. Subscribers choose their long distance carriers either by

presubscription or by dialing a carrier access code (CAC) to reach a specific interexchange carrier (IEC) or international carrier (INC).

Equal Access alternate switching point (EASP)

A special switching arrangement used to pass feature group C (FGC) and feature group D (FGD) calls from a typical Equal Access end office (EAEO) to an access tandem (AT) or directly to an interexchange carrier (IEC) or international carrier (INC).

Equal Access end office (EAEO)

An end office that provides the required Equal Access features.

Equal Access intermediate tandem (EAIT)

The EAIT allows operating companies to extend Equal Access capabilities for long distance carrier service to subscribers served from nonconforming end offices (NCEO). With the EAIT, operating companies can deliver Equal Access traffic from NCEOs to an EAIT and then tandem that traffic to an access tandem (AT) or, if the carrier has a point of presence (POP) at the EAIT, send the traffic directly to the interexchange carrier (IEC).

Equal Access operator services signaling (EAOSS)

A signaling type that permits an operating company to combine different types of traffic (operator and non-operator) on the same operator trunk group.

Equal Access plan (EAP)

This final plan implements the Modification of Final Judgement requirements by providing end offices with access to interexchange carriers (IEC) and international carriers (INC). With this plan, subscribers can choose their long distance carriers through presubscription.

The EAP uses a prefix (10XXX or 101XXXX) that accesses either a feature group C (FGC) or feature group D (FGD) carrier. The first digits (10 and 101) of the prefix form a reserved access code for universal services. The last digits (XXX and XXXX) represent the carrier identification code (CIC). The EAP prefix is either dialed by the subscriber or added by the system software.

FANI

flexible automatic number identification

feature group A (FGA)

A switching arrangement that provides line-side access from an end office switch to an interexchange carrier (IEC). The FGA carrier uses conventional signaling and is billed by the local exchange carrier (LEC) on a flat rate basis for local access or leased facilities.

feature group B (FGB)

A plan that allows an Equal Access end office (EAEO) or a non-EAEO to provide its subscribers with trunk-side access to FGB carriers. An FGB carrier uses conventional signaling and is billed by the local exchange carrier (LEC) according to the actual usage of its facilities. To use this plan, a subscriber must dial 950-WXXX.

feature group C (FGC)

The FGC switching arrangement provides the end office with trunk-side access to the interexchange carrier (IEC) and international carrier (INC) toll networks. It implements the Equal Access plan (EAP) with the following exceptions: it uses pre-divestiture signaling and additional trunk group types.

feature group D (FGD)

A switching arrangement that implements the Modification of Final Judgement requirements by providing end offices with trunk-side access to interexchange carriers (IEC) and international carriers (INC). Three dialing plans are available for FGD: interim, transitional, and Equal Access. *See also* interim plan, transitional plan, *and* Equal Access plan.

FGA

feature group A

FGB

feature group B

FGC

feature group C

FGD

feature group D

flat rate charge service

A service that, for a fixed monthly charge, permits an unlimited number of completed calls from a local noncoin line to a flat rate area. Two or more flat rate areas can be specified for a central office with some destinations assigned to more than one flat rate area.

flexible automatic number identification (FANI)

A service that allows an operating company to define special-purpose automatic number identification (ANI) information digits to identify special types of calls that are not already covered by the general Bellcore-defined ANI information digits. These flexible ANI information digits apply to outgoing Equal Access, Equal Access corridor, and Operator Services System (OSS) calls.

HNPA

home numbering plan area

home numbering plan area (HNPA)

The numbering plan area (NPA), or area code, of the switch under consideration.

hunt group

The association of several stations in the Meridian Digital Centrex (MDC) subscriber group to allow incoming calls to search for an idle line.

IAM

initial address message

IEC

interexchange carrier

INC

international carrier

initial address message (IAM)

The first message in a call (connection-oriented or connectionless). It contains information required to route the call to its destination.

integrated services digital network (ISDN)

A set of standards proposed by the Consultative Committee on International Telephony and Telegraphy (CCITT) to establish compatibility between the telephone network and various data terminals and devices. ISDN is a fully digital network, in general evolving from a telephone integrated digital network. It provides end-to-end connectivity to support a wide range of services, including circuit-switched voice, circuit-switched data, and packet-switched data over the same local facility.

intercept call

A call that comes to an operator position when the subscriber dials an out-of-service number or a number that has recently been changed.

interexchange carrier (IEC)

Any carrier authorized to carry customer transmissions between local access and transport areas (LATA) interstate or intrastate.

inter-LATA carrier

Any carrier authorized to carry customer transmissions between local access and transport areas (LATA) interstate or intrastate.

interim plan

A switching arrangement that uses feature group D (FGD) signaling but feature group B (FGB) dialing. In this plan, the subscriber dials the interim prefix (950-WXXX) to access the carrier. The first three digits (950) dialed form a reserved central office code. The fourth digit (W) is a predetermined filler digit (0 to 9) defined by the operating company. The remaining digits (XXX) represent the carrier identification code (CIC).

international carrier (INC)

Any carrier that handles overseas portions of an international call.

interregister signaling

An inband signaling method used on analog trunks for the transmission of address signals. Interregister signaling typically uses the multifrequency (MF) signaling technique. *See also* multifrequency.

intertoll (IT) trunk

A trunk between two toll offices.

interworking

The controlled transfer of information across the interface between signaling systems.

intra-LATA carrier

An operating company or carrier that has regulatory approval to provide intra-LATA services.

intra-LATA PIC (LPIC)

A service that allows subscribers to choose a primary carrier for intra-LATA services.

inward wide area telephone service (INWATS)

A telephony service that allows a subscriber to receive long distance telephone calls originating within specified areas without a charge to the originating party. A 1-800 number is assigned to a certain private branch exchange (PBX) to allow for free calls. *See also* outward wide area telephone service.

INWATS

inward wide area telephone service

ISDN

integrated services digital network

ISDN user part (ISUP)

A level of the common channel signaling 7 (CCS7) layered protocol. The main functions of ISUP include the signaling functions required to provide switched services and user facilities for voice and non-voice applications in the integrated services digital network (ISDN). *See also* common channel signaling 7 *and* integrated services digital network.

ISUP

ISDN user part

IT

intertoll

key-pulse (KP)

A key-pulse indicates the start of the digit stream.

KP

key-pulse

LAMA

local automatic message accounting

Large Business Remote (LBR)

A DMS-100 switch configured to serve as a switching unit at a remote site.

LATA

local access and transport area

LATA Equal Access System (LEAS)

The LEAS adds many of the capabilities of an Equal Access end office (EAEO) to a non-EAEO. It provides the capability of routing incoming calls from a non-EAEO to the DMS-200 access tandem (AT) switch for completion to carriers. It performs screening and translations functions like an EAEO. With a LEAS, non-EAEO subscribers can access an interexchange carrier (IEC) or international carrier (INC) by selecting one primary inter-LATA carrier (PIC) or dialing the carrier access code (CAC).

LBR

Large Business Remote

LCC

line class code

LEAS

LATA Equal Access System

LEC

local exchange carrier

LEN

line equipment number

line class code (LCC)

An alphanumeric code that identifies the class of service assigned to a line.

line equipment number (LEN)

A seven-digit functional reference that identifies line circuits. The LEN provides physical location information on equipment such as site, frame number, unit number, line subgroup (shelf), and circuit pack.

local access and transport area (LATA)

A fixed, non-overlapping geographic area, referred to as an exchange or exchange area, where an operating company offers telecommunications services.

local automatic message accounting (LAMA)

A system similar to automatic message accounting (AMA) but providing local collection and recording of billing information. LAMA consists of a combination of AMA equipment and automatic number identification (ANI) equipment in the same office. Such a system can automatically process a subscriber-dialed toll call without operator assistance. *See also* centralized automatic message accounting.

local exchange carrier (LEC)

A local phone company. LECs used to be called telephone companies or telcos.

log report

A message sent from the DMS switch whenever a significant event has occurred in the switch or one of its peripherals. A log report includes state and activity reports as well as reports on hardware and software faults, test results, and other events or conditions likely to affect the performance of the switch. A log report can be generated in response to a system or manual action.

LPIC

intra-LATA PIC

maintenance and administration position (MAP)

A group of components that provides a user interface between operating company personnel and the DMS Family switches. The interface consists of

a visual display unit and keyboard, a voice communications module, test facilities, and special furniture.

MAP

maintenance and administration position

master position

A Traffic Operator Position System (TOPS) position used by on-site personnel to perform diagnostics.

MBS

Meridian business set

MDC

Meridian Digital Centrex

Meridian business set (MBS)

A telephone set that provides subscribers with push-button access to various business features. This set, used by the supervisor, has one more field display than the electronic business set (EBS). *See also* electronic business set.

Meridian Digital Centrex (MDC)

A special DMS business services package that uses the data-handling capabilities of DMS-100 Family offices to provide a centralized telephone exchange service. Formerly known as Integrated Business Network (IBN).

MF

multifrequency

Modification of Final Judgement

The ruling from an antitrust suit between the U.S. Justice Department and the American Telephone and Telegraph (AT&T) company. This ruling stated that subscribers should be able to choose their long distance carriers. It also stated that all carriers must provide services that are equal in type, quality, and price to those provided by AT&T.

multifrequency (MF)

A signaling method that uses 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.

NCEO

nonconforming end office

nonconforming end office (NCEO)

In some rural areas served by independent telephone companies, clusters of small electromechanical end offices with the nearest access tandem (AT) office too far away for economical provisioning of Equal Access-like service. DMS-10 switches are examples of NCEOs.

non-EAEO

non-Equal Access end office

non-Equal Access end office (non-EAEO)

An end office that does not provide the Equal Access features required by the Modification of Final Judgement.

NPA

numbering plan area

NT

Northern Telecom

numbering plan area (NPA)

Any of the designated geographical divisions of the United States, Canada, Bermuda, Caribbean, Northwestern Mexico, and Hawaii within which no two telephones have the same seven-digit number. Each NPA is assigned a unique three-digit area code. Also know as area code.

OA

operator assisted

OC

outgoing CAMA

OM

operational measurements

ONI

operator number identification

operating company

The owner/operator of a DMS switch.

operational measurements (OM)

The hardware and software resources of the DMS switches that control the collection and display of measurements taken on an operating system. The OM subsystem organizes the measurement data and manages its transfer to displays and records. The OM data is used for maintenance, traffic, accounting, and provisioning decisions.

operator-assisted (OA) calls

Calls that are dialed by the subscriber but require help from the operator.

operator number identification (ONI)

The process used to bring an operator into the circuit to check the calling number when a subscriber has direct-dialed a long distance call to be changed on an itemized bill by centralized automatic message accounting (CAMA) equipment. *See also* automatic number identification.

Operator Services System (OSS)

A cost-effective method of providing subscribers with directory assitance (DA). The OSS resides in a DMS-100 or DMS-200 switch. It handles DA calls, for example, 411 and 555-1212, and includes a Force Management System and the capability for automatic message accounting (AMA).

OSS

Operator Services System

outgoing CAMA (OC) trunk

Outgoing trunk from a local office to a centralized automatic message accounting (CAMA) office.

outpulsing

The transmission of digital address information over a trunk from one switch to another.

outward wide area telephone service (OUTWATS)

A telephony service provided over one or more dedicated access lines to the serving central office. OUTWATS permits subscribers to make calls to specified service areas on a direct dialing basis for a flat monthly charge or for a charge based on accumulated use. OUTWATS lines have special directory numbers (DN). *See also* inward wide area telephone service.

OUTWATS

outward wide area telephone service

overflow

Traffic in excess of the capacity of the circuits on a particular route. The overflow traffic is offered to an alternate route.

PBX

private branch exchange

peg count

The number of times an event occurs; for example, the number of telephone calls originated during a specified period of time.

peripheral module (PM)

A generic term referring to all hardware modules in the DMS Family of switches that provide interfaces between external line, trunk, or service facilities. A PM contains peripheral processors, which perform local routines, thus relieving the load on the CPU.

PIC

primary inter-LATA carrier

plain old telephone service (POTS)

Basic telephone service with no frills or special facilities.

PM

peripheral module

point of presence (POP)

The physical location where an interexchange carrier (IEC) obtains exchange access.

POP

point of presence

POTS

plain old telephone service

presubscription

The choice by a subscriber of a selected interexchange carrier (IEC).

primary inter-LATA carrier (PIC)

The carrier designated by a subscriber to provide long distance service automatically without requiring the subscriber to dial an access code for Equal Access services. The subscriber chooses whether to designate any carrier as a PIC.

private branch exchange (PBX)

A telephone exchange, either automatic or attendant-operated, that provides telephone service within an organization as well as connections to the public network.

private exchange (PX) trunk

A two-way PBX digital trunk.

private virtual network (PVN)

A service that uses the public and private switched network to provide private network features and capabilities.

PVN

private virtual network

PX

private exchange

real time

The real time during which the DMS Family CPU performs its functions. The time is divided into two main categories: call processing time and noncall-processing time.

route list

In DMS call processing, the software used to specify route identification.

SAC

service access code

SC

SuperCAMA

SCP

service control point

service access code (SAC)

A code that replaces a numbering plan area (NPA) in the dialing sequence. Subscribers use SACs to access a particular service provided by an interexchange carrier (IEC), international carrier (INC), or operating company.

service control point (SCP)

A node in a common channel signaling 7 (CCS7) signaling network that supports application databases. The function of an SCP is to accept a query for information, retrieve the requested information from one of its application databases, and send a response message to the originator of the request.

Service Order System (SERVORD)

A user interface consisting of commands used to change, add, or delete subscriber lines. The format used for commands in the SERVORD comply with the standard telephone industry command format; for example, 3WC is three-way calling, ADO is add option, DEL is delete, and CWT is call waiting.

service switching point (SSP)

A common channel signaling 7 (CCS7) signaling node that interacts with the service control point (SCP) to implement special service code features.

serving numbering plan area (SNPA)

The first 16 primary numbering plan areas (NPA).

serving translation scheme (STS)

The serving home numbering plan area (HNPA) of a trunk group or line.

SERVORD

Service Order System

signaling transfer point (STP)

A node in a common channel signaling 7 (CCS7) network that routes messages between nodes. STPs transfer messages between incoming and outgoing signaling links but, with the exception of network management information, do not originate or terminate messages. STPs are deployed in pairs. If one STP fails, the mate takes over, ensuring that service continues without interruption.

SMDR

Station Message Detail Recording

SNPA

serving numbering plan area

SSP

service switching point

ST

start pulse

start pulse (ST)

An ST indicates the end of a digit stream.

Station Message Detail Recording (SMDR)

In Meridian Digital Centrex (MDC), a system that provides recording facilities for the details of billable and nonbillable calls for each MDC customer group.

STP

signaling transfer point

STS

serving translation scheme

SuperCAMA (SC) trunk

A nondedicated trunk used for overflow 911 and other traffic.

time-out

The action taken when equipment receives no response from an addressed location within a specified time.

TNS

transit network selection

TOPS

Traffic Operator Position System

TOPS Equal Access

An operating company tariff offering for Traffic Operator Position System (TOPS) local access transport area (LATA) access equal in type, quality, and price for all inter-LATA carriers.

Traffic Operator Position System (TOPS)

A call processing system made up of a number of operator positions. Each operator position consists of a virtual display unit, a controller, a keyboard, and a headset.

Traffic Separations Measurement System (TSMS)

An operational measurements (OM) feature that measures in detail the use of different parts of the DMS Family switches for different types of calls. TSMS enables division of revenue for long distance calling.

transitional plan

One of the three dialing plans available for feature group D (FGD). The transitional plan uses the dialing procedures of both the transitional plan and the Equal Access plan (EAP).

transit network selection (TNS)

A parameter included in the initial address message (IAM) for national and international calls routed to the access tandem (AT) and for international calls routed directly to the interexchange carrier (IEC). The TNS parameter contains the carrier identification code (CIC).

translation verification (TRAVER)

A diagnostic tool that allows the operating company to access and simulate a telephone call in software and display the tables and tuples used to establish the lines, trunks, or positions to which a call is routed.

TRAVER

translation verification

treatment

A software-generated reaction to a call-failure condition.

TSMS

Traffic Separations Measurement System

usage counts

Sampled measurements (states) used to determine the degree of usage of switching hardware and software.

VFG

virtual facility group

virtual facility group (VFG)

A software structure that emulates a trunk. For example, a VFG can limit the number of calls coming into a customer group or simulate a loop-around trunk without using physical trunk resources. This software also allows E911 data, such as serving numbering plan area (SNPA), emergency service number, or emergency service central office digits, to be associated with an E911 call.

WATS

wide area telephone service

wide area telephone service (WATS)

A special direct distance dialing service that, for a flat monthly charge or a charge based on accumulated usage, permits either inward or outward dialing between a subscriber and specified areas. *See also* inward wide area telephone service, outward wide area telephone service.

wink (WK)

A method of signaling between idle trunk circuits whereby trunks signal off-hook towards each other. A WK signal consists of timed off-hook signals transmitted to the calling end after a connection is made.

WK

wink

DMS-100 Family

Equal Access

Translations Guide

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